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Can't find the product you are looking for?

34

Resistors, Potentiometers & Thermistors

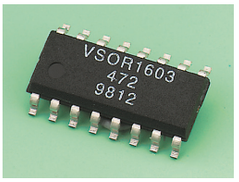
Thin Film Networks

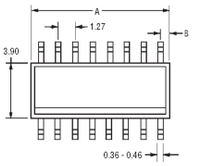
VSOR Series - DIL Surface Mount

1.27mm (0.05") Pitch

VISHAY

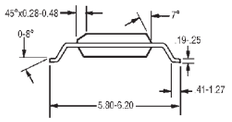
SMD

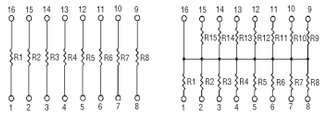




Dimensions

A	B
9.8 to 9.98	0.51





- Bussed or isolated circuits
- 16 pin small outline package
- Tantalum nitride on silicone technology
- Compatible with automatic insertion equipment

Power rating per element	100mW	TCR tracking	±10ppm/°C
Resistance tolerance	±5%	TCR absolute	±100ppm/°C
Maximum voltage	50V d.c.		

Stocked in the following OHMIC Values:

VSOR 1601 Bussed Resistors

330R = **120-3463** 1K = **120-3465** 4K7 = **120-3467** 10K = **120-3468**
470R = **120-3464** 2K2 = **120-3466**

VSOR 1603 Isolated Resistors

10R = **120-3446** 47R = **120-3451** 330R = **120-3455** 2K2 = **120-3458**
22R = **120-3449** 100R = **120-3452** 470R = **120-3456** 4K7 = **120-3461**
33R = **120-3450** 220R = **120-3453** 1K = **120-3457** 10K = **120-3462**

207307

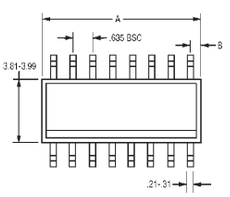
		Price Each				
Style	Order Code	1+	25+	50+	100+	+
VSOR 1601	All Values ●	6.03	5.51	5.20	3.72	– –
VSOR 1603	All Values ●	6.03	5.51	5.20	3.72	– –

VSSR Series - DIL Surface Mount

0.635mm (0.025") Pitch

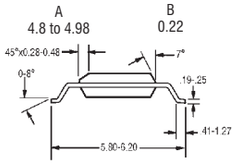
VISHAY

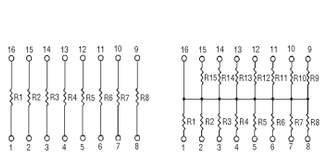
SMD



Dimensions

A	B
4.8 to 4.98	0.22





- Bussed or isolated circuits
- 16 pin small outline package
- Tantalum nitride on silicone technology
- Compatible with automatic insertion equipment

Power rating per element	100mW	TCR tracking	±10ppm/°C
Resistance tolerance	±5%	TCR absolute	±100ppm/°C
Maximum voltage	50V d.c.		

Stocked in the following OHMIC Values:

VSSR 1601 Bussed Resistors

330R = **120-3482** 1K = **120-3483** 2K2 = **120-3485** 4K7 = **120-3486** 10K = **120-3487**

VSSR 1603 Isolated Resistors

33R = **120-3469** 220R = **120-3473** 510R = **120-3475** 1K = **120-3478** 10K = **120-3480**
51R = **120-3470** 330R = **120-3474** 680R = **120-3477** 2K2 = **120-3479** 20K = **120-3481**
68R = **120-3471**

207306

		Price Each				
Style	Order Code	1+	25+	50+	100+	+
VSSR 1601	All Values ●	6.03	5.51	5.20	3.72	– –
VSSR 1603	All Values ●	6.03	5.51	5.20	3.72	– –

Thick Film Networks

RNA310 Series - Surface Mount

1206 Case Size

Phicomp

- Eight bussed thick film chip resistors on one 1206 package

Supplied on 8mm embossed tape (reel=5k pcs)

SMD

L=3.3±0.2, W=1.6±0.15, H=0.55±0.1

Power rating @ 70°C	310mW	Temperature coefficient	≤200x 10^{-6}/K
Resistance tolerance	±5%	Operating temperature	-55°C to +125°C
Maximum Voltage	25V d.c or a.c rms		

Stocked in the following OHMIC Values:

10R = **923-6104** 150R = **923-6147** 1K = **923-6180** 6K8 = **923-6228** 33K = **923-6260**
47R = **923-6112** 330R = **923-6155** 1K5 = **923-6198** 10K = **923-6236** 47K = **923-6279**
68R = **923-6120** 470R = **923-6163** 3K3 = **923-6201** 15K = **923-6244** 100K = **923-6287**
100R = **923-6139** 680R = **923-6171** 4K7 = **923-6210** 22K = **923-6252**

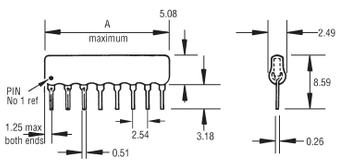
227147

		Price Each				
Style	Order Code	5+	25+	100+	500+	+
RNA310	All Values ●	0.46	0.35	0.30	0.19	– –

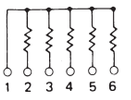
Conformal Single In-Line Package

BOURNS® Reliable Electronic Solutions

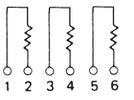
Schematic Diagrams



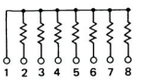
4605X-101
(4 resistors, 5 pins)
A max=12.65



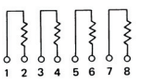
4606X-101
(5 resistors, 6 pins)
A max=15.19



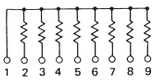
4606X-102
(3 resistors, 6 pins)
A max=15.19



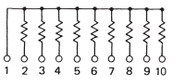
4608X-101
(7 resistors, 8 pins)
A max=20.27



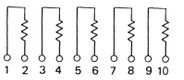
4608X-102
(4 resistors, 8 pins)
A max=20.27



4609X-101
(8 resistors, 9 pins)
A max=22.81



4610X-101
(9 resistors, 10 pins)
A max=25.35



4610X-102
(5 resistors, 10 pins)
A max=25.35

Thick film, resistor networks in 5, 6, 8, 9 or 10 pin, the 8 pin being available in either bussed or isolated configuration. Laser marked on a gold epoxy coating for permanent identification.

Power rating @ 70°C	200mW/element (bussed) 300mW/element (isolated)	Resistance T.C. tracking	±50ppm/°C
		Voltage rating	100V dc
Resistance tolerance	±=1,5033ppm/°C for 10R to 50R)	Insulation resistance	10MΩ min
Resistance T.C.	±2% (±250ppm/°C for 10R to 50R)	Operating temperature	-55°C to +125°C

Stocked in the following OHMIC Values:

4605X-101

1K = **219-150** 4K7 = **219-174** 22K = **447-195** 100K = **447-213**
2K2 = **219-162** 10K = **219-186** 47K = **447-201**

4606X-101

100R = **107-039** 680R = **476-330** 3K3 = **476-353** 22K = **107-046** 220K = **107-049**
150R = **476-328** 1K = **107-042** 4K7 = **107-044** 47K = **107-047** 470K = **107-050**
220R = **107-040** 1K5 = **476-341** 10K = **107-045** 100K = **107-048** 1M = **107-051**
470R = **107-041** 2K2 = **107-043**

4606X-102

100R = **476-365** 2K2 = **447-237** 10K = **447-250** 1M = **476-389**
1K = **447-225** 4K7 = **447-249** 100K = **476-377**

4608X-101

33R = **477-369** 220R = **148-968** 2K2 = **148-971** 22K = **148-974** 220K = **106-098**
47R = **477-370** 470R = **148-969** 4K7 = **148-972** 47K = **148-975** 470K = **106-099**
100R = **148-967** 1K = **148-970** 10K = **148-973** 100K = **148-977** 1M = **106-100**

4608X-102

10R = **107-052** 100R = **107-055** 680R = **447-330** 2K7 = **447-341** 100K = **107-064**
22R = **107-053** 150R = **447-304** 1K = **107-058** 3K3 = **447-353** 220K = **107-065**
33R = **447-262** 270R = **447-316** 1K5 = **476-390** 10K = **107-061** 470K = **107-066**
47R = **107-054** 330R = **447-328** 2K2 = **107-059** 22K = **107-062** 1M = **107-067**
56R = **447-274** 470R = **107-057**

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products,
prices are subject to change without notice.

4609X-101

10R = **106-101**	150R = **447-365**	1K = **148-981**	4K7 = **148-983**	47K = **148-986**
22R = **106-102**	180R = **447-377**	1K5 = **447-419**	15K = **476-407**	100K = **148-988**
33R = **477-382**	270R = **447-389**	2K2 = **148-982**	18K = **447-444**	220K = **106-104**
47R = **106-103**	470R = **148-980**	2K7 = **447-420**	22K = **148-985**	470K = **106-105**
100R = **148-978**	680R = **447-407**	3K3 = **447-432**	33K = **447-456**	1M = **106-106**

4610X-101

100R = **148-989**	470R = **148-991**	3K3 = **447-481**	22K = **148-996**	220K = **106-110**
150R = **476-419**	1K = **148-992**	4K7 = **148-994**	47K = **148-997**	470K = **106-111**
220R = **148-990**	2K2 = **148-993**	10K = **148-995**	100K = **148-999**	1M = **106-112**
330R = **447-468**				

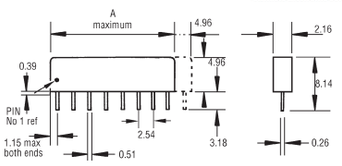
4610X-102

10R = **476-420**	47R = **447-511**	220R = **447-535**	1K = **447-559**	4K7 = **447-572**
22R = **447-493**	100R = **447-523**	470R = **447-547**	2K2 = **447-560**	10K = **452-269**
33R = **447-500**				

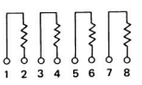
207423

Style	Order Code	Price Each 5+	100+	500+	1K+
4605X-101	**All Values**	0.49	0.43	0.40	0.32
4606X-101	**All Values**	0.49	0.43	0.40	0.32
4606X-102	**All Values**	0.49	0.43	0.40	0.32
4608X-101	**All Values**	0.56	0.46	0.43	0.32
4608X-102	**All Values**	0.56	0.46	0.43	0.32
4609X-101	**All Values**	0.56	0.46	0.43	0.32
4610X-101	**All Values**	0.66	0.56	0.49	0.41
4610X-102	**All Values**	0.66	0.54	0.47	0.40

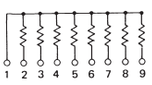
Moulded Single In-Line Package



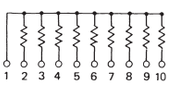
A max = 19.92



4308R-102
(4 resistors, 8 pins)



4309R-101
(8 resistors, 9 pins)
A max = 22.46



4310R-101
(9 resistors, 10 pins)
A max = 25.0

Low profile moulded thick film resistor networks in 8, 9 or 10 pin, the 8 pin being available in either bussed or isolated configuration. Compatible with automatic insertion equipment. Laser marked on a gold coating for permanent identification.

Power rating @ 70°C	200mW/element	Resistance T.C. tracking	±50ppm/°C
4308R-102	300mW	Voltage rating	100V dc
Resistance tolerance	±2%	Insulation resistance	10MΩ min.
Resistance T.C.	±100ppm/°C	Operating temperature	-55°C to +125°C

Stocked in the following OHMIC Values

4308R-101
1K = **106-170** 4K7 = **106-172** 10K = **106-173**

4308R-102
100R = **106-177** 1K = **106-180** 4K7 = **106-182** 22K = **106-184** 100K = **106-186**
470R = **106-179** 2K2 = **106-181** 10K = **106-183** 47K = **106-185**

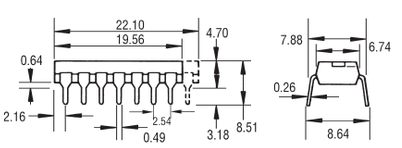
4309R-101
220R = **106-188** 1K = **106-190** 4K7 = **106-192** 22K = **106-194** 100K = **106-196**
470R = **106-189** 2K2 = **106-191** 10K = **106-193** 47K = **106-195**

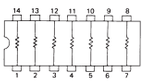
4310R-101
220R = **107-069** 2K2 = **107-072** 10K = **107-074**

207168

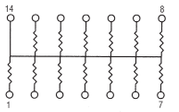
Style	Order Code	Price Each 5+	50+	100+	500+	+
4308R-101	**All Values**	1.05	0.94	0.85	0.62	– –
4308R-102	**All Values**	1.05	0.94	0.85	0.62	– –
4309R-101	**All Values**	1.69	1.61	1.45	0.66	– –
4310R-101	**All Values**	1.24	1.07	0.94	0.72	– –

Moulded Dual In-Line Package

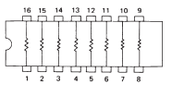




4114R-001
(7 resistors, 14 pins)



4114R-002
(13 resistors, 14 pins)



4116R-001
(8 resistors, 16 pins)

Thick film resistor networks having 7 and 8 isolated resistors or 13 bussed resistors of equal value. Laser marked on a gold epoxy coating for permanent identification.

Power rating @ 70°C		Resistance T.C. tracking	±50ppm/°C
4114R Series	2.0W	Voltage rating	100V dc
4116R Series	2.25W	Insulation resistance	10MΩ min
Resistance tolerance	±2%	Operating temperature	-55°C to +125°C
Resistance T.C.	±100ppm/°C		

Stocked in the following OHMIC Values:

4114R-001
47R = **935-5715** 150R = **935-5669** 470R = **935-5723** 4K7 = **935-5731** 47K = **935-5740**
68R = **935-5758** 220R = **935-5677** 1K = **935-5634** 10K = **935-5642** 100K = **935-5650**
100R = **935-5626** 270R = **935-5707** 2K2 = **935-5685** 22K = **935-5693**

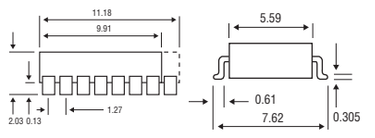
4114R-002
1K = **935-5766** 2K2 = **935-5782** 4K7 = **935-5790** 10K = **935-5774**

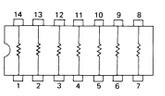
4116R-001
10R = **935-5804** 100R = **935-5812** 330R = **935-5936** 1K5 = **935-5863** 10K = **935-5839**
22R = **935-5871** 150R = **935-5855** 470R = **935-5960** 2K2 = **935-5898** 22K = **935-5901**
33R = **935-5928** 220R = **935-5880** 680R = **935-6002** 3K3 = **935-5944** 47K = **935-5987**
47R = **935-5952** 270R = **935-5910** 1K = **935-5820** 4K7 = **935-5979** 100K = **935-5847**
68R = **935-5995**

207424

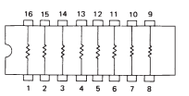
Style	Order Code	Price Each 5+	100+	500+	1K+
4114R-001 ●	**All Values** ●	1.01	0.85	0.82	0.69
4114R-002 ●	**All Values** ●	1.01	0.85	0.82	0.69
4116R-001 ●	**All Values** ●	0.98	0.79	0.79	0.66

Surface Mount - Moulded Dual In-Line

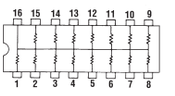




4814P-T01
(7 resistors, 14 pins)



4816P-T01
(8 resistors, 16 pins)



4816P-T02
(15 resistors, 16 pins)

Surface mount thick film resistor networks having 7 and 8 isolated resistors or 15 bussed resistors of equal value. Laser marked on a gold epoxy coating for permanent identification. Compatible with automatic placement equipment and all popular soldering techniques.

Power rating @ 70°C		Voltage rating	50V dc
4814P Series	1.12W	Resistance T.C.	±100ppm/°C
4816P Series	1.28W	Insulation resistance	10MΩ min
Resistance tolerance	±2%	Operating temperature	-55°C to +125°C
Resistance T.C. tracking	±50ppm/°C		

Stocked in the following OHMIC Values:

4814P-T01
33R = **935-7416** 220R = **935-7394** 1K = **935-7378** 4K7 = **935-7432** 10K = **935-7386**
100R = **935-7360** 470R = **935-7424** 2K2 = **935-7408**

4816P-T01
10R = **935-7440** 220R = **935-7505** 2K2 = **935-7513** 10K = **935-7475** 100K = **935-7483**
33R = **935-7521** 470R = **935-7530** 4K7 = **935-7548** 47K = **935-7556** 1M = **935-7491**
100R = **935-7459** 1K = **935-7467**

4816P-T02
100R = **935-7564** 470R = **935-7637** 2K2 = **935-7629** 10K = **935-7580** 100K = **935-7599**
220R = **935-7610** 1K = **935-7572** 4K7 = **935-7645** 47K = **935-7653** 1M = **935-7602**

207198

Style	Order Code	Price Each 5+	50+	100+	500+	+
4814P-T01 ●	**All Values** ●	2.82	2.58	2.36	1.29	– –
4816P-T01 ●	**All Values** ●	2.52	2.30	2.11	1.26	– –
4816P-T02 ●	**All Values** ●	2.62	2.39	2.20	1.29	– –

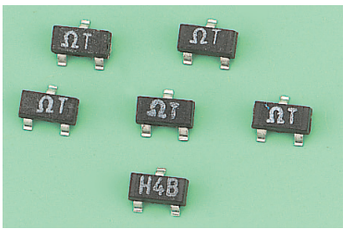
RoHS ● Compliant ▲ Non-compliant ‡ Limited stock - RoHS replacement available

Farnell Page 1138 Date: 21-08-06 time: 18:38

Thin Film Precision Dividers

MPM Series - SOT23 Package Surface Mount

VISHAY



- Precision thin film dividers for gain defining applications
- Low TCR
- Close ratio tolerances

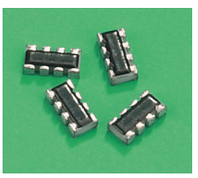
207304

Ratio	Resistance Values	Order Code	Price Each 1+	5+	10+	25+	+
100:1	100K/1K	SMD 120-3383●	15.79	14.55	13.77	9.83	– –
50:1	50K/1K	SMD 120-3384●	15.79	14.55	13.77	9.83	– –
25:1	25K/1K	SMD 120-3385●	15.79	14.55	13.77	9.83	– –
20:1	20K/1K	SMD 120-3386●	10.42	9.61	9.01	6.84	– –
10:1	10K/1K	SMD 120-3387●	10.42	9.61	9.01	6.49	– –
5:1	5K/1K	SMD 120-3388●	10.42	9.61	9.01	6.49	– –
2:1	2K/1K	SMD 120-3389●	10.42	9.61	9.01	6.49	– –
1:1	1K/1K	SMD 120-3390●	10.52	9.70	9.14	6.55	– –
1:1	500R/500R	SMD 120-3391●	10.52	9.70	9.14	6.55	– –
1:1	10K/10K	SMD 120-3392●	8.02	7.43	6.99	5.04	– –

Resistor Arrays

0402 Case Size

Phicomp A YAGEO COMPANY



- Four surface mount resistors on one 0804 package

SMD

L=2 W=1 H=0.5

Supplied on tape (reel = 5Kpcs)

Power rating	0.063W
Resistance tolerance	5%
Maximum voltage	50V a.c/d.c
Climatic category (IEC68)	55/125/56

Stocked in the following OHMIC values

0R = 325-7290	100R = 325-7368	680R = 325-7411	15K = 325-7496	330K = 325-7575
10R = 325-7307	150R = 325-7370	1K = 325-7423	22K = 325-7502	470K = 325-7587
15R = 325-7319	220R = 325-7381	1K5 = 325-7435	100K = 325-7540	680K = 325-7599
47R = 325-7344	330R = 325-7393	4K7 = 325-7460	150K = 325-7551	1M = 325-7605
68R = 325-7356	470R = 325-7400	6K8 = 325-7472	220K = 325-7563	

207366

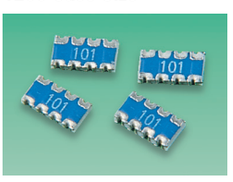
	Order Code	Price Each 10+	50+	100+	1K+	+
▲ ARV 341	All values ▲ ‡	0.43	0.42	0.40	0.21	– –

0R = 923-5221	68R = 923-5299	680R = 923-5353	10K = 923-5418	150K = 923-5477
10R = 923-5248	100R = 923-5302	1K = 923-5361	15K = 923-5426	220K = 923-5485
15R = 923-5256	150R = 923-5310	1K5 = 923-5370	22K = 923-5434	470K = 923-5493
22R = 923-5264	220R = 923-5329	2K2 = 923-5388	47K = 923-5442	680K = 923-5507
33R = 923-5272	330R = 923-5337	3K3 = 923-5396	68K = 923-5450	1M = 923-5515
47R = 923-5280	470R = 923-5345	4K7 = 923-5400	100K = 923-5469	

	Order Code	Price Each 10+	50+	100+	1K+	+
ARV 341	All values ●	0.43	0.42	0.40	0.21	– –

1206 Case Size

Phicomp A YAGEO COMPANY



Four surface mount resistors in one 1206 size package.

SMD

L = 3.2, W = 1.6, H = 0.6

Supplied on tape (reel = 5Kpcs)

ARC 242 ±1% - (Concave terminations) Stocked in the following OHMIC Values

0R = 923-4675	68R = 923-4730	680R = 923-4799	10K = 923-4853	68K = 923-4900
10R = 923-4683	100R = 923-4748	1K = 923-4802	15K = 923-4861	100K = 923-4918
15R = 923-4691	150R = 923-4756	1K5 = 923-4810	22K = 923-4870	150K = 923-4926
22R = 923-4705	220R = 923-4764	2K2 = 923-4829	33K = 923-4888	220K = 923-4934
33R = 923-4713	330R = 923-4772	3K3 = 923-4837	47K = 923-4896	470K = 923-4942
47R = 923-4721	470R = 923-4780	4K7 = 923-4845		

ARC 241 ±5% - (Concave terminations) Stocked in the following OHMIC Values

10R = 924-1132	120R = 923-5000	1K = 924-1256	8K2 = 923-5124	68K = 924-1361
15R = 924-1140	150R = 924-1205	1K2 = 923-5060	10K = 924-1310	100K = 924-1370
18R = 923-4950	180R = 923-5019	1K5 = 924-1264	12K = 923-5132	120K = 923-5183
22R = 924-1159	220R = 924-1213	1K8 = 923-5078	15K = 924-1329	150K = 924-1388
27R = 923-4969	270R = 923-5027	2K2 = 924-1272	18K = 923-5140	180K = 923-5191
33R = 924-1167	330R = 924-1221	2K7 = 923-5086	22K = 924-1337	220K = 924-1396
39R = 923-4977	390R = 923-5035	3K3 = 924-1280	27K = 923-5159	330K = 924-1400
47R = 924-1175	470R = 924-1230	3K9 = 923-5094	33K = 924-1345	470K = 924-1418
56R = 923-4985	560R = 923-5043	4K7 = 924-1299	39K = 923-5167	560K = 923-5205
68R = 924-1183	680R = 924-1248	5K6 = 923-5116	47K = 924-1353	680K = 924-1426
82R = 923-4993	820R = 923-5051	6K8 = 924-1302	56K = 923-5175	1M = 923-5213
100R = 924-1191				

ARV 241 ±5% - (Convex terminations) Stocked in the following OHMIC values

0R = 923-4381	68R = 923-4446	680R = 923-4500	10K = 923-4560	150K = 923-4624
10R = 923-4390	100R = 923-4454	1K = 923-4519	15K = 923-4578	220K = 923-4632
15R = 923-4403	150R = 923-4462	1K5 = 923-4527	33K = 923-4586	330K = 923-4640
22R = 923-4411	220R = 923-4470	2K2 = 923-4535	47K = 923-4594	470K = 923-4659
33R = 923-4420	330R = 923-4489	3K3 = 923-4543	68K = 923-4608	680K = 923-4667
47R = 923-4438	470R = 923-4497	4K7 = 923-4551	100K = 923-4616	

207245

Order Code	Price Each 10+	50+	100+	1K+	+
ARC 242 ●●	0.66	0.61	0.58	0.29	– –
ARC 241 ARV241 ●●	0.21	0.20	0.19	0.11	– –

ARV1206 ±1% (convex terminations)

NEW

Stocked in the following ohmic values

1K = 108-6508	39K = 108-6527	150R = 108-6543	680K = 108-6562
1m = 108-6511	39R = 108-6528	180K = 108-6544	680R = 108-6563
10K = 108-6512	47K = 108-6529	180R = 108-6545	820K = 108-6564
10R = 108-6513	47R = 108-6530	220K = 108-6547	820R = 108-6565
12K = 108-6514	56K = 108-6531	220R = 108-6548	1K2 = 108-6566
12R = 108-6515	56R = 108-6532	270K = 108-6549	1K5 = 108-6567
15K = 108-6516	68K = 108-6533	270R = 108-6550	1K8 = 108-6568
15R = 108-6517	68R = 108-6535	330K = 108-6551	2K2 = 108-6569
18K = 108-6518	82K = 108-6536	330R = 108-6552	2K7 = 108-6570
18R = 108-6519	82R = 108-6537	390K = 108-6554	3K3 = 108-6572
22K = 108-6520	100K = 108-6538	390R = 108-6555	3K9 = 108-6573
22R = 108-6521	100R = 108-6539	470K = 108-6556	4K7 = 108-6574
27K = 108-6523	120K = 108-6540	470R = 108-6557	5K6 = 108-6575
27R = 108-6524	120R = 108-6541	560K = 108-6559	6K8 = 108-6576
33K = 108-6525	150K = 108-6542	560R = 108-6561	8K2 = 108-6577
33R = 108-6526			

Order Multiple = 10 Order Code	Price Each 10+	50+	100+	1K+	+
All Values ●	0.62	0.55	0.49	0.41	– –

423719

Resistor Arrays - Full Reels

SMD

Phicomp A YAGEO COMPANY

- Four surface mount resistors in one 1206 size package supplied on full reels

NEW

FULL REELS

ARC 241 ±5% - (Concave terminations) Stocked in the following OHMIC Values

0R = 111-7478	100R = 111-7443	1K5 = 111-7450	15K = 111-7451	150K = 111-7453
10R = 111-7448	150R = 111-7449	2K2 = 111-7456	22K = 111-7457	220K = 111-7458
15R = 111-7454	220R = 111-7455	3K3 = 111-7461	33K = 111-7462	330K = 111-7463
22R = 111-7459	330R = 111-7460	4K7 = 111-7467	47K = 111-7468	470K = 111-7470
33R = 111-7465	470R = 111-7466	6K8 = 111-7473	68K = 111-7474	680K = 111-7475
47R = 111-7471	680R = 111-7472	10K = 111-7445	100K = 111-7446	1M = 111-7447
68R = 111-7477	1K = 111-7444			

423709

Order Code	Reel Quantity	Price Per Reel 1+	3+
All Values ●	5000	280.61	252.56

Zero Ohm Link

0.25 Watt - MCF ¼W Series

multicomp

L=6.8 max, Dia=2.5 max

Lead length=28.0, Lead dia=0.6

Supplied bandoliered on tape (box=5K pcs)

- Low resistance link in a standard resistor size

Power rating @ 70°C	0.25W	Insulation resistance	Dry	10000MΩ
Maximum resistance	0.01Ω		Wet	100MΩ
Dielectric strength	500V rms	Current rating		25A @ 25°C derating 0A à 150°C

207413

Order Code	Price Each 50+	500+	1K+	5K+	+
508-792‡	0.04	0.03	0.03	0.02	– –
933-9027●	0.04	0.03	0.03	0.02	– –

Carbon Film

0.125 Watt ±5% – MCF ⅛W Series

multicomp

L=3.5 max, Dia.=1.8 max,

Lead length=28.0, Lead dia.=0.45

Supplied bandoliered on tape (box=2K pcs)

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products,
prices are subject to change without notice.

C = CYAN M = Magenta Y = Yellow B = Black/SING

Power rating @ 70°C	0.125W	Maximum overload voltage	400V
Temperature coefficient	0 to -700ppm/°C	Operating temperature	-55°C to + 155°C
Voltage rating	200V		

Stocked in the following OHMIC Values:

1R = **477-606**	22R = **477-680**	390R = **770-050**	5K6 = **770-127**	82K = **770-190**
1R5 = **477-618**	27R = **769-988**	470R = **477-760**	6K8 = **477-837**	100K = **477-904**
1R5 = **477-618**	33R = **477-692**	560R = **770-061**	8K2 = **770-139**	120K = **770-206**
2R2 = **477-620**	39R = **769-990**	680R = **477-771**	10K = **477-849**	150K = **477-916**
2R7 = **769-927**	47R = **477-709**	820R = **770-073**	12K = **770-140**	180K = **770-218**
3R3 = **477-631**	56R = **770-000**	1K = **477-783**	15K = **477-850**	220K = **477-928**
3R9 = **769-939**	68R = **477-710**	1K2 = **770-085**	18K = **770-152**	270K = **770-220**
4R7 = **477-643**	82R = **770-012**	1K5 = **477-795**	22K = **477-862**	330K = **477-930**
5R6 = **769-940**	100R = **477-722**	1K8 = **770-097**	27K = **770-164**	390K = **770-231**
6R8 = **477-655**	120R = **770-024**	2K2 = **477-801**	33K = **477-874**	470K = **477-941**
8R2 = **769-952**	150R = **477-734**	2K7 = **770-103**	39K = **770-176**	560K = **770-243**
10R = **477-667**	180R = **770-036**	3K3 = **477-813**	47K = **477-886**	680K = **477-953**
12R = **769-964**	220R = **477-746**	3K9 = **770-115**	56K = **770-188**	820K = **770-255**
15R = **477-679**	270R = **770-048**	4K7 = **477-825**	68K = **477-898**	1M = **477-965**
18R = **769-976**	330R = **477-758**			

207215

	Price Each				
	MIXED QUANTITY PRICING				
Order Code	50+	100+	500+	1K+	+
All values	0.04	0.03	0.03	0.02	– –

For 0.125 Watt ±5% — MCF ⅛W Series — see page 1157

0.25 Watt ±5% – MCF ¼W Series

multicomp

L=6.8 max, Dia=2.5 max Lead length=28.0, Lead dia=0.6

Supplied bandoliered on tape (box=5K pcs)

Power rating @ 70°C	0.25W	Maximum overload voltage	500V
Temperature coefficient	0 to –700ppm/°C	Operating temperature	-55°C to + 155°C
Voltage rating	250V		

Stocked in the following OHMIC Values:

1R =	**933-9094**	27R =	**933-9345**	680R =	**933-9655**	18K =	**933-9256**	470K =	**933-9566**
1R2 =	**933-9159**	33R =	**933-9400**	820R =	**933-9710**	22K =	**933-9310**	560K =	**933-9620**
1R5 =	**933-9213**	39R =	**933-9469**	1K =	**933-9051**	27K =	**933-9370**	680K =	**933-9680**
1R8 =	**933-9272**	47R =	**933-9523**	1K2 =	**933-9124**	33K =	**933-9434**	820K =	**933-9744**
2R2 =	**933-9337**	56R =	**933-9582**	1K5 =	**933-9183**	39K =	**933-9493**	1M =	**933-9086**
2R7 =	**933-9396**	68R =	**933-9647**	1K8 =	**933-9248**	47K =	**933-9558**	1M2 =	**118-6236**
3R3 =	**933-9450**	82R =	**933-9701**	2K2 =	**933-9302**	56K =	**933-9612**	1M5 =	**118-6237**
3R9 =	**933-9515**	100R =	**933-9043**	2K7 =	**933-9361**	68K =	**933-9671**	1M8 =	**118-6238**
4R7 =	**933-9574**	120R =	**933-9116**	3K3 =	**933-9426**	82K =	**933-9736**	2M2 =	**118-6239**
5R6 =	**933-9639**	150R =	**933-9175**	3K9 =	**933-9485**	100K =	**933-9078**	2M7 =	**118-6240**
6R8 =	**933-9698**	180R =	**933-9230**	4K7 =	**933-9540**	120K =	**933-9140**	3M3 =	**118-6241**
8R2 =	**933-9752**	220R =	**933-9299**	5K6 =	**933-9604**	150K =	**933-9205**	3M9 =	**118-6242**
10R =	**933-9035**	270R =	**933-9353**	6K8 =	**933-9663**	180K =	**933-9264**	4M7 =	**118-6244**
12R =	**933-9108**	330R =	**933-9418**	8K2 =	**933-9728**	220K =	**933-9329**	5M6 =	**118-6245**
15R =	**933-9167**	390R =	**933-9477**	10K =	**933-9060**	270K =	**933-9388**	6M8 =	**118-6246**
18R =	**933-9221**	470R =	**933-9531**	12K =	**933-9132**	330K =	**933-9442**	8M2 =	**118-6247**
22R =	**933-9280**	560R =	**933-9590**	15K =	**933-9191**	390K =	**933-9507**	10M =	**118-6248**

207404

	Price Each				
	MIXED QUANTITY PRICING				
Order Code	50+	500+	1K+	5K+	+
All values ●	0.04	0.03	0.03	0.02	– –

0.5 Watt ±5% – MCF ½W Series

multicomp

Lead length=28.0, Lead dia. =0.6 L=9.0, Dia=3.0 Supplied bandoliered on tape (box=2K pcs.)

Power rating @ 70°C	0.5W	Maximum overload voltage	700V
Temperature coefficient	0 to -700ppm/°C	Operating temperature	-55°C to + 155°C
Voltage rating	350V		

Stocked in the following OHMIC Values

1R =	**933-8411**	68R =	**933-8918**	1K5 =	**933-8497**	33K =	**933-8721**	680K =	**933-8950**
1R5 =	**933-8527**	82R =	**933-8977**	1K8 =	**933-8551**	39K =	**933-8780**	820K =	**933-9019**
2R2 =	**933-8632**	100R =	**933-8357**	2K2 =	**933-8608**	47K =	**933-8837**	1M =	**933-8390**
3R3 =	**933-8748**	120R =	**933-8438**	2K7 =	**933-8667**	56K =	**933-8896**	1M2 =	**118-6234**
4R7 =	**933-8853**	150R =	**933-8489**	3K3 =	**933-8713**	68K =	**933-8942**	1M5 =	**118-6249**
6R8 =	**933-8969**	180R =	**933-8543**	3K9 =	**933-8772**	82K =	**933-9000**	1M8 =	**118-6250**
10R =	**933-8349**	220R =	**933-8594**	4K7 =	**933-8829**	100K =	**933-8381**	2M2 =	**118-6252**
12R =	**933-8420**	270R =	**933-8659**	5K6 =	**933-8888**	120K =	**933-8462**	2M7 =	**118-6253**
15R =	**933-8470**	330R =	**933-8705**	6K8 =	**933-8934**	150K =	**933-8519**	3M3 =	**118-6254**
18R =	**933-8535**	390R =	**933-8764**	8K2 =	**933-8993**	180K =	**933-8578**	3M9 =	**118-6256**
22R =	**933-8586**	470R =	**933-8810**	10K =	**933-8373**	220K =	**933-8624**	4M7 =	**118-6257**
27R =	**933-8640**	560R =	**933-8870**	12K =	**933-8454**	270K =	**933-8683**	5M6 =	**118-6258**
33R =	**933-8691**	680R =	**933-8926**	15K =	**933-8500**	330K =	**933-8730**	8M2 =	**118-6259**
39R =	**933-8756**	820R =	**933-8985**	18K =	**933-8560**	390K =	**933-8799**	6M8 =	**118-6260**
47R =	**933-8802**	1K =	**933-8365**	22K =	**933-8616**	470K =	**933-8845**	10M =	**933-8403**
56R =	**933-8861**	1K2 =	**933-8446**	27K =	**933-8675**	560K =	**933-8900**		

207192

	Price Each				
	MIXED QUANTITY PRICING				
Order Code	50+	500+	1K+	2K+	+
All values ●	0.04	0.03	0.03	0.02	– –

Carbon Film ±5% Resistor Kits

multicomp

- 0.25 and 0.5 watt carbon film resistor kits
- E6, E12 and E24 series of values
- 100 pieces of each preferred value from 10R to 1M

E6 series	10, 15, 22, 33, 47, 68 (100 of each value)
E12 Series	10, 12, 15, 18, 22, 27, 33, 39, 47, 56, 68, 82 (100 of each value)

207193

			Price Each		
		Order Code	1+	3+	6+
0.25 Watt					
E6 Kit	31 Values	**117-1087** ●	123.92	99.97	89.70
E12 Kit	61 Values	**117-1088** ●	223.64	198.12	177.71
0.5 Watt					
E6 Kit	31 Values	**117-0593** ●	103.57	91.32	77.62
E12 Kit	61 Values	**117-0595** ●	208.49	183.89	156.29

1 Watt ±5% – MCF 1W Series

multicomp

L=12.0, Dia.=5.0 Lead Length=28.0, Lead dia.=0.7

Supplied bandoliered on tape (box=1K pcs)

Power rating @ 70°C	0.5W	Maximum overload voltage	700V
Temperature coefficient	0 to -700ppm/°C	Operating temperature	-55°C to + 155°C
Voltage rating	350V	Temperature coefficient	0 to -700ppm/°C

Stocked in the following OHMIC Values:

1R =	**933-7717**	22R =	**933-7784**	470R =	**933-7911**	5K6 =	**933-7962**	100K =	**933-7695**
1R5 =	**933-7776**	33R =	**933-7849**	680R =	**933-7989**	6K8 =	**933-7997**	150K =	**933-7768**
2R2 =	**933-7830**	47R =	**933-7903**	1K =	**933-7679**	10K =	**933-7687**	220K =	**933-7822**
3R3 =	**933-7890**	68R =	**933-7970**	1K5 =	**933-7741**	15K =	**933-7750**	330K =	**933-7881**
4R7 =	**933-7954**	100R =	**933-7660**	2K2 =	**933-7806**	22K =	**933-7814**	470K =	**933-7946**
6R8 =	**933-8020**	150R =	**933-7733**	3K3 =	**933-7865**	33K =	**933-7873**	680K =	**933-8012**
10R =	**933-7652**	220R =	**933-7792**	4K7 =	**933-7920**	47K =	**933-7938**	1M =	**933-7709**
15R =	**933-7725**	330R =	**933-7857**	5K6 =	**333-4946**	68K =	**933-8004**		

207195

	Price Each				
	MIXED QUANTITY PRICING				
Order Code	10+	500+	1K+	5K+	+
All values ●	0.04	0.03	0.03	0.03	– –

2 Watt ±5% – MCF 2W Series

multicomp

L=16.0, Dia.=5.5

Lead length=28.0, Lead dia.=0.8

Supplied bandoliered on tape (box=1K pcs)

Power rating 70°C	2W	Operating temperature	–55°C to + 155°C
Voltage rating	500V	Temperature coefficient	0 to –700ppm/°C
Maximum overload voltage	1000V		

Stocked in the following OHMIC Values:

10R =	**933-8039**	150R =	**933-8101**	2K2 =	**933-8160**	15K =	**933-8128**	150K =	**933-8136**
15R =	**933-8098**	220R =	**933-8152**	1K5 =	**933-8110**	22K =	**933-8179**	220K =	**933-8187**
22R =	**933-8144**	330R =	**933-8209**	3K3 =	**933-8217**	33K =	**933-8225**	330K =	**933-8233**
33R =	**933-8195**	470R =	**933-8250**	4K7 =	**933-8268**	47K =	**933-8276**	470K =	**933-8284**
47R =	**933-8241**	680R =	**933-8306**	6K8 =	**933-8314**	68K =	**933-8322**	680K =	**933-8330**
68R =	**933-8292**	1K =	**933-8055**	10K =	**933-8063**	100K =	**933-8071**	1M =	**933-8080**
100R =	**933-8047**								

207194

	Price Each				
●	MIXED QUANTITY PRICING				
Order Code	10+	500+	+	+	+
All values ●	0.04	0.04	– –	– –	– –

Thick Film

Surface Mount - ±1%

multicomp

SMD

Supplied on 8mm tape individually marked (reel=5K pcs)

Operating temperature -55°C to + 125°C

Case Size	Dimensions L	W	H	Maximum Working Voltage (V)	Temperature Coefficient	Tolerance
0603	1.6	0.8	0.4-0.55	50	±200ppm/°C	±1%
0805	2	1.25	0.4-0.55	100	±200ppm/°C	±1%
1206	3.2	1.6	0.4-0.65	200	±200ppm/°C	±1%

0.063 Watt ±1% (0603 Case Size)

Stocked in the following OHMIC Values

● Compliant
◄ Non-compliant
++ Limited stock - RoHS replacement available

RoHS

C = CYAN M = Magenta Y = Yellow B = Black/SING

Farnell Page 1140 Date: 21-08-06 time: 18:40

0R =	933-1662	95R3 =	117-0686	845R =	117-0781	7K5 =	933-1514	69K8 =	117-0972
1R5 =	933-0640	97R6 =	117-0687	866R =	117-0782	7K68 =	117-0877	71K5 =	117-0973
2R2 =	933-0852	100R =	933-0364	887R =	117-0783	7K87 =	117-0878	73K2 =	117-0974
3R3 =	933-1069	102R =	117-0688	909R =	117-0784	8K06 =	117-0881	75K =	933-1522
4R7 =	933-1280	105R =	117-0689	910R =	933-1603	8K2 =	933-1565	76K8 =	117-0975
6R8 =	933-1492	107R =	117-0690	931R =	117-0785	8K25 =	117-0882	78K7 =	117-0976
10R =	933-0429	110R =	933-0437	953R =	117-0786	8K45 =	117-0883	80K6 =	117-0977
10R2 =	117-0597	113R =	117-0691	976R =	117-0787	8K66 =	117-0884	82K =	933-1573
10R5 =	117-0598	115R =	117-0692	1K =	933-0380	8K87 =	117-0885	82K5 =	117-0978
11R =	933-0470	118R =	117-0693	1K02 =	117-0789	9K09 =	117-0886	84K5 =	117-0979
11R5 =	117-0599	120R =	933-0496	1K05 =	117-0791	9K1 =	933-1611	86K6 =	117-0980
12R =	933-0534	121R =	117-0694	1K07 =	117-0792	9K53 =	117-0887	88K7 =	117-0981
12R1 =	117-0601	124R =	117-0695	1K1 =	933-0445	9K76 =	117-0888	90K9 =	117-0982
12R4 =	117-0602	127R =	117-0698	1K13 =	117-0793	10K =	933-0399	91K =	933-1620
12R7 =	117-0603	130R =	933-0542	1K15 =	117-0794	10K2 =	117-0889	93K1 =	117-0984
13R =	933-0585	133R =	117-0699	1K18 =	117-0795	10K5 =	117-0890	95K3 =	117-0985
13R3 =	117-0604	137R =	117-0700	1K2 =	933-0500	10K7 =	117-0891	97K6 =	117-0986
14R =	117-0605	140R =	117-0701	1K21 =	117-0796	11K =	933-0453	100K =	933-0402
14R3 =	117-0606	143R =	117-0702	1K24 =	117-0797	11K3 =	117-0893	102K =	117-0987
14R7 =	117-0607	147R =	117-0704	1K27 =	117-0798	11K5 =	117-0894	105K =	117-0988
15R =	933-0631	150R =	933-0593	1K3 =	933-0550	11K8 =	117-0895	107K =	117-0989
15R4 =	117-0608	154R =	117-0705	1K33 =	117-0799	12K =	933-0518	110K =	933-0461
16R =	933-0690	158R =	117-0706	1K37 =	117-0800	12K1 =	117-0896	113K =	117-0990
16R2 =	117-0609	160R =	933-0658	1K4 =	117-0801	12K4 =	117-0897	115K =	117-0991
16R5 =	117-0610	162R =	117-0707	1K43 =	117-0802	12K7 =	117-0898	118K =	117-0992
16R9 =	117-0611	165R =	117-0708	1K47 =	117-0803	13K =	933-0569	120K =	933-0526
17R8 =	117-0613	169R =	117-0709	1K5 =	933-0607	13K3 =	117-0899	121K =	117-0993
18R =	933-0747	174R =	117-0710	1K54 =	117-0804	13K7 =	117-0900	124K =	117-0994
18R2 =	117-0614	178R =	117-0711	1K58 =	117-0805	14K =	117-0901	127K =	117-0996
18R7 =	117-0616	180R =	933-0704	1K6 =	933-0666	14K3 =	117-0902	130K =	933-0577
19R1 =	117-0617	182R =	117-0712	1K62 =	117-0807	14K7 =	117-0903	133K =	117-0997
19R6 =	117-0618	187R =	117-0713	1K65 =	117-0808	15K =	933-0615	137K =	117-0999
20R =	933-0798	191R =	117-0714	1K69 =	117-0809	15K4 =	117-0904	140K =	117-1000
20R5 =	117-0619	196R =	117-0716	1K74 =	117-0810	15K8 =	117-0905	143K =	117-1001
21R =	117-0620	200R =	933-0755	1K78 =	117-0811	16K =	933-0674	147K =	117-1002
21R5 =	117-0621	205R =	117-0717	1K8 =	933-0712	16K2 =	117-0906	150K =	933-0623
22R =	933-0844	210R =	117-0718	1K82 =	117-0812	16K5 =	117-0907	154K =	117-1003
22R1 =	117-0622	215R =	117-0719	1K87 =	117-0813	16K9 =	117-0908	158K =	117-1005
22R6 =	117-0623	220R =	933-0801	1K91 =	117-0814	17K4 =	117-0911	160K =	933-0682
23R2 =	117-0625	221R =	117-0720	1K96 =	117-0815	17K8 =	117-0912	165K =	117-1006
23R7 =	117-0626	226R =	117-0721	2K =	933-0763	18K =	933-0720	169K =	117-1007
24R =	933-0909	232R =	117-0722	2K05 =	117-0816	18K2 =	117-0913	174K =	117-1009
24R3 =	117-0627	237R =	117-0723	2K1 =	117-0817	18K7 =	117-0914	180K =	933-0739
24R9 =	117-0628	240R =	933-0860	2K15 =	117-0819	19K1 =	117-0915	182K =	117-1011
25R5 =	117-0629	243R =	117-0724	2K2 =	933-0810	19K6 =	117-0916	187K =	117-1012
26R1 =	117-0630	249R =	117-0725	2K21 =	117-0821	20K =	933-0771	191K =	117-1013
26R7 =	117-0631	255R =	117-0726	2K26 =	117-0822	20K5 =	117-0917	196K =	117-1014
27R =	933-0950	261R =	117-0728	2K32 =	117-0823	21K =	117-0918	200K =	933-0780
27R4 =	117-0632	267R =	117-0729	2K37 =	117-0824	21K5 =	117-0919	205K =	117-1015
28R =	117-0633	270R =	933-0917	2K4 =	933-0879	22K =	933-0828	210K =	117-1016
28R7 =	117-0634	274R =	117-0730	2K43 =	117-0825	22K1 =	117-0920	215K =	117-1017
30R =	933-1000	280R =	117-0731	2K49 =	117-0826	22K6 =	117-0921	220K =	933-0836
30R1 =	117-0635	287R =	117-0732	2K55 =	117-0827	23K2 =	117-0923	221K =	117-1018
30R9 =	117-0637	294R =	117-0733	2K61 =	117-0828	23K7 =	117-0924	226K =	117-1019
31R6 =	117-0638	300R =	933-0968	2K67 =	117-0829	24K =	933-0887	232K =	117-1020
33R =	933-1050	301R =	117-0734	2K7 =	933-0925	24K3 =	117-0925	237K =	117-1022
33R2 =	117-0639	309R =	117-0735	2K74 =	117-0830	24K9 =	117-0926	240K =	933-0895
34R =	117-0640	316R =	117-0736	2K8 =	117-0832	25K5 =	117-0927	243K =	117-1023
34R8 =	117-0641	324R =	117-0737	2K87 =	117-0834	26K1 =	117-0928	249K =	117-1024
35R7 =	117-0642	330R =	933-1018	2K94 =	117-0835	26K7 =	117-0929	255K =	117-1025
36R =	933-1123	332R =	117-0738	3K =	933-0976	27K =	933-0933	261K =	117-1026
36R5 =	117-0643	340R =	117-0741	3K01 =	117-0836	27K4 =	117-0930	267K =	117-1027
37R4 =	117-0644	348R =	117-0742	3K09 =	117-0837	28K =	117-0931	270K =	933-0941
38R3 =	117-0645	357R =	117-0743	3K16 =	117-0838	28K7 =	117-0932	274K =	117-1028
39R =	933-1174	360R =	933-1077	3K24 =	117-0839	29K4 =	117-0933	287K =	117-1029
39R2 =	117-0646	365R =	117-0744	3K3 =	933-1026	30K =	933-0984	294K =	117-1030
40R2 =	117-0647	374R =	117-0745	3K32 =	117-0840	30K1 =	117-0935	300K =	933-0992
41R2 =	117-0649	383R =	117-0746	3K4 =	117-0841	30K9 =	117-0936	301K =	117-1031
42R2 =	117-0651	390R =	933-1131	3K48 =	117-0842	31K6 =	117-0937	309K =	117-1032
43R =	933-1220	392R =	117-0747	3K57 =	117-0844	32K4 =	117-0938	316K =	117-1034
43R2 =	117-0652	402R =	117-0748	3K6 =	933-1085	33K =	933-1034	324K =	117-1035
44R2 =	117-0653	412R =	117-0749	3K65 =	117-0845	33K2 =	117-0939	330K =	933-1042
45R3 =	117-0654	422R =	117-0750	3K74 =	117-0846	34K =	117-0940	332K =	117-1037
46R4 =	117-0655	430R =	933-1182	3K83 =	117-0847	34K8 =	117-0941	340K =	117-1038
47R =	933-1271	432R =	117-0751	3K9 =	933-1140	35K7 =	117-0942	348K =	117-1039
47R5 =	117-0656	442R =	117-0753	3K92 =	117-0848	36K =	933-1093	357K =	117-1040
48R7 =	117-0657	453R =	117-0754	4K02 =	117-0849	36K5 =	117-0943	360K =	933-1115
49R9 =	117-0658	464R =	117-0755	4K12 =	117-0850	37K4 =	117-0944	365K =	117-1041
51R =	933-1336	470R =	933-1239	4K22 =	117-0851	38K3 =	117-0945	374K =	117-1042
52R3 =	117-0659	475R =	117-0756	4K3 =	933-1190	39K =	933-1158	383K =	117-1043
53R6 =	117-0660	487R =	117-0757	4K32 =	117-0852	39K2 =	117-0947	390K =	933-1166
54R9 =	117-0662	499R =	117-0758	4K42 =	117-0853	40K2 =	117-0948	392K =	117-1044
56R =	933-1387	510R =	933-1298	4K53 =	117-0854	41K2 =	117-0949	402K =	117-1046
56R2 =	117-0663	511R =	117-0759	4K64 =	117-0856	42K2 =	117-0950	412K =	117-1047
57R6 =	117-0664	523R =	117-0760	4K7 =	933-1247	43K =	933-1204	422K =	117-1048
59R =	117-0665	536R =	117-0761	4K75 =	117-0857	43K2 =	117-0951	430K =	933-1212
60R4 =	117-0666	549R =	117-0762	4K87 =	117-0858	45K3 =	117-0952	432K =	117-1049
61R9 =	117-0667	560R =	933-1344	4K99 =	117-0859	46K4 =	117-0953	442K =	117-1050
62R =	933-1433	562R =	117-0763	5K1 =	933-1301	47K =	933-1255	453K =	117-1051
63R4 =	117-0668	576R =	117-0765	5K11 =	117-0860	48K7 =	117-0954	464K =	117-1052
64R9 =	117-0669	590R =	117-0766	5K23 =	117-0861	49K9 =	117-0955	470K =	933-1263
66R5 =	117-0670	604R =	117-0767	5K36 =	117-0862	51K =	933-1310	475K =	117-1053
68R =	933-1484	619R =	117-0768	5K49 =	117-0863	51K1 =	117-0956	487K =	117-1054
68R1 =	117-0671	620R =	933-1395	5K6 =	933-1352	52K3 =	117-0957	499K =	117-1055
71R5 =	117-0672	634R =	117-0769	5K62 =	117-0864	53K6 =	117-0959	510K =	933-1328
73R2 =	117-0674	649R =	117-0770	5K76 =	117-0865	54K9 =	117-0961	511K =	117-1056
75R =	933-1549	665R =	117-0771	5K9 =	117-0866	56K =	933-1360	523K =	117-1058
76R8 =	117-0675	680R =	933-1441	6K04 =	117-0868	56K2 =	117-0962	536K =	117-1059
78R7 =	117-0676	681R =	117-0772	6K19 =	117-0869	57K6 =	117-0963	549K =	117-1060
80R6 =	117-0677	698R =	117-0773	6K2 =	933-1409	59K =	117-0964	560K =	933-1379
82R =	933-1590	715R =	117-0774	6K34 =	117-0870	60K4 =	117-0965	562K =	117-1061
82R5 =	117-0679	732R =	117-0775	6K49 =	117-0871	61K9 =	117-0966	576K =	117-1062
84R5 =	117-0680	750R =	933-1506	6K65 =	117-0872	62K =	933-1417	590K =	117-1063
86R6 =	117-0681	768R =	117-0777	6K8 =	933-1450	63K4 =	117-0967	604K =	117-1064
88R7 =	117-0682	787R =	117-0778	6K81 =	117-0873	64K9 =	117-0968	619K =	117-1065
90R9 =	117-0683	806R =	117-0779	6K98 =	117-0874	66K5 =	117-0969	620K =	933-1425
91R =	933-1646	820R =	933-1557	7K15 =	117-0875	68K =	933-1468	634K =	117-1066
93R1 =	117-0684	825R =	117-0780	7K32 =	117-0876	68K1 =	117-0970	649K =	117-1067
665K =	117-1068	732K =	117-1074	806K =	117-1077	866K =	117-1080	931K =	117-1084
680K =	933-1476	750K =	933-1530	820K =	933-1581	887K =	117-1081	953K =	117-1085
681K =	117-1071	768K =	117-1075	825K =	117-1078	909K =	117-1083	976K =	117-1086
698K =	117-1072	787K =	117-1076	845K =	117-1079	910K =	933-1638	1M	933-0410
715K =	117-1073								

		Price Each			
		MIXED QUANTITY PRICING			
	Order Code	50+	250+	1K+	5K+
0603 Case Size	All values ●	0.06	0.05	0.04	0.03

MC 0.1 Watt ±1% (0805 Case Size)

Stocked in the following OHMIC Values

1R5 =	933-2642	75R =	933-3568	820R =	933-3576	9K1 =	933-3630	100K =	933-2405
2R2 =	933-2855	82R =	933-3614	910R =	933-3622	10K =	933-2391	110K =	933-2464
3R3 =	933-3096	91R =	933-3665	1K =	933-2383	11K =	933-2456	120K =	933-2510
4R7 =	933-3304	100R =	933-2375	1K1 =	933-2448	12K =	933-2502	130K =	933-2570
6R8 =	933-3517	110R =	933-2430	1K2 =	933-2499	13K =	933-2561	150K =	933-2626
10R =	933-2421	120R =	933-2480	1K3 =	933-2553	15K =	933-2618	160K =	933-2685
11R =	933-2472	130R =	933-2545	1K5 =	933-2600	16K =	933-2677	180K =	933-2731
12R =	933-2529	150R =	933-2596	1K6 =	933-2669	18K =	933-2723	200K =	933-2782
13R =	933-2588	160R =	933-2650	1K8 =	933-2715	20K =	933-2774	220K =	933-2839
15R =	933-2634	180R =	933-2707	2K =	933-2766	22K =	933-2820	240K =	933-2910
16R =	933-2693	200R =	933-2758	2K2 =	933-2812	24K =	933-2901	270K =	933-2960
18R =	933-2740	220R =	933-2804	2K4 =	933-2880	27K =	933-2952	300K =	933-3010
20R =	933-2790	240R =	933-2871	2K7 =	933-2944	30K =	933-3002	330K =	933-3070
22R =	933-2847	270R =	933-2936	3K =	933-2995	33K =	933-3053	360K =	933-3134
24R =	933-2928	300R =	933-2987	3K3 =	933-3045	36K =	933-3126	390K =	933-3185
27R =	933-2979	330R =	933-3037	3K6 =	933-3118	39K =	933-3177	430K =	933-3231
30R =	933-3029	360R =	933-3100	3K9 =	933-3169	43K =	933-3223	470K =	933-3282
33R =	933-3088	390R =	933-3150	4K3 =	933-3215	47K =	933-3274	510K =	933-3347
36R =	933-3142	430R =	933-3207	4K7 =	933-3266	51K =	933-3339	560K =	933-3398
39R =	933-3193	470R =	933-3258	5K1 =	933-3320	56K =	933-3380	620K =	933-3444
43R =	933-3240	510R =	933-3312	5K6 =	933-3371	62K =	933-3436	680K =	933-3495
47R =	933-3290	560R =	933-3363	6K2 =	933-3428	68K =	933-3487	750K =	933-3550
51R =	933-3355	620R =	933-3410	6K8 =	933-3479	75K =	933-3541	820K =	933-3606
56R =	933-3401	680R =	933-3460	7K5 =	933-3533	82K =	933-3592	910K =	933-3657
62R =	933-3452	750R =	933-3525	8K2 =	933-3584	91K =	933-3649	1M =	933-2413
68R =	933-3509								

Order Multiple=50		Price Each			
		MIXED QUANTITY PRICING			
	Order Code	50+	250+	1K+	5K+
0805 Case Size	All values ●	0.06	0.05	0.04	0.03

0.125 Watt ±1% (1206 Case Size)

Stocked in the following OHMIC Values

0R =	933-6974	110R =	933-5803	1K1 =	933-5811	11K =	933-5820	110K =	933-5838
10R =	933-5790	120R =	933-5854	1K2 =	933-5862	12K =	933-5870	120K =	933-5889
11R =	933-5846	130R =	933-5900	1K3 =	933-5919	13K =	933-5927	130K =	933-5935
12R =	933-5897	150R =	933-5943	1K5 =	933-5951	15K =	933-5960	150K =	933-5978
15R =	933-5986	160R =	933-5994	1K6 =	933-6001	16K =	933-6028	160K =	933-6036
16R =	933-6044	180R =	933-6052	1K8 =	933-6060	18K =	933-6079	180K =	933-6087
18R =	933-6095	200R =	933-6109	2K =	933-6117	20K =	933-6125	200K =	933-6133
20R =	933-6141	220R =	933-6150	2K2 =	933-6168	22K =	933-6176	220K =	933-6184
22R =	933-6192	240R =	933-6206	2K4 =	933-6214	24K =	933-6222	240K =	933-6230
24R =	933-6249	270R =	933-6257	2K7 =	933-6265	27K =	933-6273	270K =	933-6281
27R =	933-6290	300R =	933-6303	3K =	933-6311	30K =	933-6320	300K =	933-6338
30R =	933-6346	330R =	933-6354	3K3 =	933-6362	33K =	933-6370	330K =	933-6389
33R =	933-6397	360R =	933-6400	3K6 =	933-6419	36K =	933-6427	360K =	933-6435
36R =	933-6451	390R =	933-6460	3K9 =	933-6478	39K =	933-6486	390K =	933-6494
39R =	933-6508	430R =	933-6516	4K3 =	933-6524	43K =	933-6532	430K =	933-6540
43R =	933-6559	470R =	933-6567	4K7 =	933-6575	47K =	933-6583	470K =	933-6591
47R =	933-6605	510R =	933-6613	5K1 =	933-6621	51K =	933-6630	510K =	933-6648
51R =	933-6656	560R =	933-6664	5K6 =	933-6672	56K =	933-6680	560K =	933-6699
56R =	933-6702	620R =	933-6710	6K2 =	933-6729	62K =	933-6737	620K =	933-6745
62R =	933-6753	680R =	933-6761	6K8 =	933-6770	68K =	933-6788	680K =	933-6796
68R =	933-6800	750R =	933-6818	7K5 =	933-6826	75K =	933-6834	750K =	933-6842
75R =	933-6850	820R =	933-6869	8K2 =	933-6877	82K =	933-6885	820K =	933-6893
82R =	933-6907	910R =	933-6915	9K1 =	933-6923	91K =	933-6931	910K =	933-6940
91R =	933-6958	1K =	933-5757	10K =	933-5765	100K =	933-5773	1M =	933-5781
100R =	933-5749								

207266

Order Multiple=50		Price Each			
		MIXED QUANTITY PRICING			
	Order Code	50+	250+	1K+	5K+
1206 Case Size	All values ●	0.06	0.05	0.04	0.03

MiniReel™

Surface Mount – ±1%

Tape Width = 8mm

- 100mm reel size
- 1000 pieces on each reel
- Ideal for pre-production, prototyping and production shortfalls
- Complete with leader tape
- Surface mount thick film resistors
- ±1% tolerance

0.063 Watt ±1% (0603 Case Size)

Prices are in Singapore Dollars and exclusive of GST. Due to the volatile nature of certain products, prices are subject to change without notice.

C = CYAN M = Magenta Y = Yellow B = Black/SING

Stocked in the following OHMIC Values:

0R = **345-5970**	82R = **345-6109**	1K = **345-6237**	12K = **345-6365**	120K = **345-6481**
10R = **345-5981**	100R = **345-6110**	1K2 = **345-6249**	15K = **345-6377**	150K = **345-6493**
12R = **345-5993**	120R = **345-6122**	1K5 = **345-6250**	18K = **345-6389**	180K = **345-6500**
15R = **345-6006**	150R = **345-6134**	1K8 = **345-6262**	22K = **345-6390**	220K = **345-6511**
18R = **345-6018**	180R = **345-6146**	2K2 = **345-6274**	27K = **345-6407**	270K = **345-6523**
22R = **345-6020**	220R = **345-6158**	2K7 = **345-6286**	33K = **345-6419**	330K = **345-6535**
27R = **345-6031**	270R = **345-6160**	3K3 = **345-6298**	39K = **345-6420**	390K = **345-6547**
33R = **345-6043**	330R = **345-6171**	3K9 = **345-6304**	47K = **345-6432**	470K = **345-6559**
39R = **345-6055**	390R = **345-6183**	4K7 = **345-6316**	56K = **345-6444**	560K = **345-6560**
47R = **345-6067**	470R = **345-6195**	5K6 = **345-6328**	68K = **345-6456**	680K = **345-6572**
56R = **345-6079**	560R = **345-6201**	6K8 = **345-6330**	82K = **345-6468**	820K = **345-6584**
68R = **345-6080**	680R = **345-6213**	8K2 = **345-6341**	100K = **345-6470**	1M = **345-6596**
75R = **345-6092**	820R = **345-6225**	10K = **345-6353**		

1000 Pieces Per Reel		**Price Per Reel**		
	Order Code	1+	3+	5+
0603 Case Size	**All Values**	27.69	26.18	25.52

0.1 Watt ±1% (0805 Case Size)

Stocked in the following OHMIC Values:

0R = **345-6602**	82R = **345-6730**	1K = **345-6869**	12K = **345-6997**	120K = **345-7114**
10R = **345-6614**	100R = **345-6742**	1K2 = **345-6870**	15K = **345-7000**	150K = **345-7126**
12R = **345-6626**	120R = **345-6754**	1K5 = **345-6882**	18K = **345-7011**	180K = **345-7138**
15R = **345-6638**	150R = **345-6766**	1K8 = **345-6894**	22K = **345-7023**	220K = **345-7140**
18R = **345-6640**	180R = **345-6778**	2K2 = **345-6900**	27K = **345-7035**	270K = **345-7151**
22R = **345-6651**	220R = **345-6780**	2K7 = **345-6912**	33K = **345-7047**	330K = **345-7163**
27R = **345-6663**	270R = **345-6791**	3K3 = **345-6924**	39K = **345-7059**	390K = **345-7175**
33R = **345-6675**	330R = **345-6808**	3K9 = **345-6936**	47K = **345-7060**	470K = **345-7187**
39R = **345-6687**	390R = **345-6810**	4K7 = **345-6948**	56K = **345-7072**	560K = **345-7199**
47R = **345-6699**	470R = **345-6821**	5K6 = **345-6950**	68K = **345-7084**	680K = **345-7205**
56R = **345-6705**	560R = **345-6833**	6K8 = **345-6961**	82K = **345-7096**	820K = **345-7217**
68R = **345-6717**	680R = **345-6845**	8K2 = **345-6973**	100K = **345-7102**	1M = **345-7229**
75R = **345-6729**	820R = **345-6857**	10K = **345-6985**		

1000 Pieces Per Reel		**Price Per Reel**		
	Order Code	1+	3+	5+
0805 Case Size	**All Values**	25.96	24.29	23.34

0.125 Watt ±1% (1206 Case Size)

Stocked in the following OHMIC Values:

0R = **345-7230**	82R = **345-7369**	1K = **345-7497**	12K = **345-7620**	120K = **345-7746**
10R = **345-7242**	100R = **345-7370**	1K2 = **345-7503**	15K = **345-7631**	150K = **345-7758**
12R = **345-7254**	120R = **345-7382**	1K5 = **345-7515**	18K = **345-7643**	180K = **345-7760**
15R = **345-7266**	150R = **345-7394**	1K8 = **345-7527**	22K = **345-7655**	220K = **345-7771**
18R = **345-7278**	180R = **345-7400**	2K2 = **345-7539**	27K = **345-7667**	270K = **345-7783**
22R = **345-7280**	220R = **345-7412**	2K7 = **345-7540**	33K = **345-7679**	330K = **345-7795**
27R = **345-7291**	270R = **345-7424**	3K3 = **345-7552**	39K = **345-7680**	390K = **345-7801**
33R = **345-7308**	330R = **345-7436**	3K9 = **345-7564**	47K = **345-7692**	470K = **345-7813**
39R = **345-7310**	390R = **345-7448**	4K7 = **345-7576**	56K = **345-7709**	560K = **345-7825**
47R = **345-7321**	470R = **345-7450**	5K6 = **345-7588**	68K = **345-7710**	680K = **345-7837**
56R = **345-7333**	560R = **345-7461**	6K8 = **345-7590**	82K = **345-7722**	820K = **345-7849**
68R = **345-7345**	680R = **345-7473**	8K2 = **345-7606**	100K = **345-7734**	1M = **345-7850**
75R = **345-7357**	820R = **345-7485**	10K = **345-7618**		

228309

1000 Pieces Per Reel		**Price Each**		
	Order Code	1+	3+	5+
1206 Case Size	**All Values**	30.18	27.81	26.74

Surface Mount ±5%

tyco/Electronics NEOHM

0.063W ±5% 0402 Case Size

● High power to size ratio

SMD

Working voltage	50V
Max. overload voltage	100V
Climatic category	55/125/56

Dimensions W = 1.0mm, D = 0.5mm, 0.35mm

Stocked in the following OHMIC values:

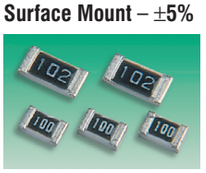
0R = **117-4140**	100R = **117-4146**	1K = **117-4154**	10K = **117-4160**	100K = **117-4167**
10R = **117-4141**	150R = **117-4147**	1K5 = **117-4155**	15K = **117-4161**	150K = **117-4168**
15R = **117-4142**	220R = **117-4148**	2K2 = **117-4156**	22K = **117-4163**	330K = **117-4169**
22R = **117-4143**	330R = **117-4151**	3K3 = **117-4157**	33K = **117-4164**	470K = **117-4170**
33R = **117-4144**	470R = **117-4152**	4K7 = **117-4158**	47K = **117-4165**	680K = **117-4171**
47R = **117-4145**	680R = **117-4153**	6K8 = **117-4159**	68K = **117-4166**	1M = **117-4172**

234792

		Price Each				
	Order Code	50+	250+	1K+	5K+	+
0402 Case Size	**All Values** ●	0.07	0.05	0.05	0.03	– –

Surface Mount – ±5%

multicomp



SMD

Supplied on 8mm tape individually marked (reel=5K pcs)

Case Size	Dimensions L	W	H	Maximum Working Voltage (V)	Temperature Coefficient	Tolerance
0603	1.6	0.8	0.4 - 0.55	50	±200ppm/°C	±1%
0805	2	1.25	0.4 - 0.55	100	±200ppm/°C	±0%
1206	3.2	1.6	0.4 - 0.65	200	±200ppm/°C	±0%

Operating temperature -55°C to +125°C

0.063 Watt ±5% (0603 Case Size)

Stocked in the following OHMIC Values:

0R = **772-227**	47R = **612-327**	680R = **612-467**	8K2 = **612-595**	100K = **612-728**
1R5 = **758-267**	56R = **612-339**	820R = **612-479**	10K = **612-601**	120K = **612-730**
2R2 = **758-279**	68R = **612-340**	1K = **612-480**	12K = **612-613**	150K = **612-741**
3R3 = **758-280**	82R = **612-352**	1K2 = **612-492**	15K = **612-625**	180K = **612-753**
4R7 = **758-292**	100R = **612-364**	1K5 = **612-509**	18K = **612-637**	220K = **612-765**
6R8 = **758-309**	120R = **612-376**	1K8 = **612-510**	22K = **612-649**	270K = **612-777**
10R = **612-248**	150R = **612-388**	2K2 = **612-522**	27K = **612-650**	330K = **612-789**
12R = **612-250**	180R = **612-390**	2K7 = **612-534**	33K = **612-662**	390K = **612-790**
15R = **612-261**	220R = **612-406**	3K3 = **612-546**	39K = **612-674**	470K = **612-807**
18R = **612-273**	270R = **612-418**	3K9 = **612-558**	47K = **612-686**	560K = **612-819**
22R = **612-285**	330R = **612-420**	4K7 = **612-560**	56K = **612-698**	680K = **612-820**
27R = **612-297**	390R = **612-431**	5K6 = **612-571**	68K = **612-704**	820K = **612-832**
33R = **612-303**	470R = **612-443**	6K8 = **612-583**	82K = **612-716**	1M = **612-844**
39R = **612-315**	560R = **612-455**			

		Price Each			
		MIXED QUANTITY PRICING			
	Order Code	50+	250+	1K+	5K+
0603 Case Size	**All Values**	0.04	0.03	0.03	0.02

0R = **933-1662**	47R = **933-2138**	680R = **933-2251**	8K2 = **933-2324**	100K = **933-1719**
1R5 = **933-1832**	56R = **933-2197**	820R = **933-2316**	10K = **933-1700**	120K = **933-1778**
2R2 = **933-1948**	68R = **933-2243**	1K = **933-1697**	12K = **933-1760**	150K = **933-1824**
3R3 = **933-2073**	82R = **933-2308**	1K2 = **933-1751**	15K = **933-1816**	180K = **933-1883**
4R7 = **933-2189**	100R = **933-1689**	1K5 = **933-1808**	18K = **933-1875**	220K = **933-1930**
6R8 = **933-2294**	120R = **933-1743**	1K8 = **933-1867**	22K = **933-1921**	270K = **933-1999**
10R = **933-1670**	150R = **933-1794**	2K2 = **933-1913**	27K = **933-1980**	330K = **933-2057**
12R = **933-1735**	180R = **933-1859**	2K7 = **933-1972**	33K = **933-2049**	390K = **933-2120**
15R = **933-1786**	220R = **933-1905**	3K3 = **933-2022**	39K = **933-2111**	470K = **933-2170**
18R = **933-1840**	270R = **933-1964**	3K9 = **933-2103**	47K = **933-2162**	560K = **933-2235**
22R = **933-1891**	330R = **933-2014**	4K7 = **933-2154**	56K = **933-2227**	680K = **933-2286**
27R = **933-1956**	390R = **933-2090**	5K6 = **933-2219**	68K = **933-2278**	820K = **933-2340**
33R = **933-2006**	470R = **933-2146**	6K8 = **933-2260**	82K = **933-2332**	1M = **933-1727**
39R = **933-2081**	560R = **933-2200**			

0.063 Watt ±5% (0603 Case Size)

		Price Each			
		MIXED QUANTITY PRICING			
	Order Code	50+	250+	1K+	5K+
0805 Case Size	**All Values** ●	0.06	0.05	0.04	0.03

1000 Piece Reels

● 100mm reel containing 1000 pieces

Stocked in the following OHMIC Values:

0R = **758-413**	100R = **758-449**	1K = **758-474**	10K = **758-504**	47K = **758-802**
10R = **758-425**	220R = **758-450**	2K2 = **758-486**	22K = **758-516**	100K = **759-764**
47R = **758-437**	330R = **758-462**	4K7 = **758-498**	33K = **758-528**	1M = **759-776**

1000 Pieces per Reel		**Price Per Reel**			
		MIXED QUANTITY PRICING			
	Order Code	1+	3+	5+	10+
0603 Case Size	**All Values**	21.44	19.98	19.48	10.72

0.1 Watt ±5% (0805 Case Size)

Stocked in the following OHMIC Values:

0R = **772-239**	68R = **612-959**	820R = **613-083**	9K1 = **771-454**	100K = **613-332**
1R5 = **758-310**	75R = **771-200**	910R = **771-338**	10K = **613-216**	110K = **771-582**
2R2 = **758-322**	82R = **612-960**	1K = **613-095**	11K = **771-466**	120K = **613-344**
3R3 = **758-334**	91R = **771-211**	1K1 = **771-340**	12K = **613-228**	130K = **771-594**
4R7 = **758-346**	100R = **933-3703**	1K2 = **613-101**	13K = **771-478**	150K = **613-356**
6R8 = **758-358**	110R = **771-223**	1K3 = **771-351**	15K = **613-230**	160K = **771-600**
10R = **612-856**	120R = **612-984**	1K5 = **613-113**	16K = **771-480**	180K = **613-368**
11R = **771-107**	130R = **771-235**	1K6 = **771-363**	18K = **613-241**	200K = **771-612**
12R = **612-868**	150R = **612-996**	1K8 = **613-125**	20K = **771-491**	220K = **613-370**
13R = **771-119**	160R = **771-247**	2K = **771-375**	22K = **613-253**	240K = **771-624**
15R = **612-870**	180R = **613-009**	2K2 = **613-137**	24K = **771-508**	270K = **613-381**
16R = **771-120**	200R = **771-259**	2K4 = **771-387**	27K = **613-265**	300K = **771-636**
18R = **612-881**	220R = **613-010**	2K7 = **613-149**	30K = **771-510**	330K = **613-393**
20R = **771-132**	240R = **771-260**	3K = **771-399**	33K = **613-277**	360K = **771-648**
22R = **612-893**	270R = **613-022**	3K3 = **613-150**	36K = **771-521**	390K = **613-400**
24R = **771-144**	300R = **771-272**	3K6 = **771-405**	39K = **613-289**	430K = **771-650**
27R = **612-900**	330R = **613-034**	3K9 = **613-162**	43K = **771-533**	470K = **613-411**
30R = **771-156**	360R = **771-284**	4K3 = **771-417**	47K = **613-290**	510K = **771-661**
33R = **612-911**	390R = **613-046**	4K7 = **613-174**	51K = **771-545**	560K = **613-423**
36R = **771-168**	430R = **771-296**	5K1 = **771-429**	56K = **613-307**	620K = **771-673**
39R = **612-923**	470R = **613-058**	5K6 = **613-186**	62K = **771-557**	680K = **613-435**
43R = **771-170**	510R = **771-302**	6K2 = **771-430**	68K = **613-319**	750K = **771-685**
47R = **612-935**	560R = **613-060**	6K8 = **613-198**	75K = **771-569**	820K = **613-447**
51R = **771-181**	620R = **771-314**	7K5 = **771-442**	82K = **613-320**	910K = **771-697**
56R = **612-947**	680R = **613-071**	8K2 = **613-204**	91K = **771-570**	1M = **613-459**
62R = **771-193**	750R = **771-326**			

		Price Each			
		MIXED QUANTITY PRICING			
	Order Code	50+	250+	1K+	5K+
0805 Case Size	**All Values**	0.04	0.03	0.03	0.02

0R = **933-3681**	16R = **933-3967**	47R = **933-4564**	130R = **933-3860**	390R = **933-4475**
1R5 = **933-3959**	18R = **933-4017**	51R = **933-4629**	150R = **933-3916**	430R = **933-4521**
2R2 = **933-4173**	20R = **933-4068**	56R = **933-4670**	160R = **933-3975**	470R = **933-4572**
3R3 = **933-4394**	22R = **933-4122**	62R = **933-4726**	180R = **933-4025**	510R = **933-4637**
4R7 = **933-4610**	24R = **933-4181**	68R = **933-4777**	200R = **933-4076**	560R = **933-4688**
6R8 = **933-4823**	27R = **933-4246**	75R = **933-4831**	220R = **933-4130**	620R = **933-4734**
10R = **933-3690**	30R = **933-4297**	82R = **933-4882**	240R = **933-4190**	680R = **933-4785**
11R = **933-3754**	33R = **933-4343**	91R = **933-4939**	270R = **933-4254**	750R = **933-4840**
12R = **933-3800**	36R = **933-4408**	100R = **933-3703**	300R = **933-4300**	820R = **933-4890**
13R = **933-3851**	39R = **933-4467**	110R = **933-3762**	330R = **933-4351**	910R = **933-4947**
15R = **933-3908**	43R = **933-4513**	120R = **933-3819**	360R = **933-4416**	1K = **933-3711**

RoHS ● Compliant ▲ Non-compliant ‡ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

1K1 = **933-3770**	4K7 = **933-4580**	20K = **933-4092**	75K = **933-4866**	300K = **933-4335**
1K2 = **933-3827**	5K1 = **933-4645**	22K = **933-4157**	82K = **933-4912**	330K = **933-4386**
1K3 = **933-3878**	5K6 = **933-4696**	24K = **933-4220**	91K = **933-4963**	360K = **933-4459**
1K5 = **933-3924**	6K2 = **933-4742**	27K = **933-4270**	100K = **933-3738**	390K = **933-4505**
1K6 = **933-3983**	6K8 = **933-4793**	30K = **933-4327**	110K = **933-3797**	430K = **933-4556**
1K8 = **933-4033**	7K5 = **933-4858**	33K = **933-4378**	120K = **933-3843**	470K = **933-4602**
2K = **933-4084**	8K2 = **933-4904**	36K = **933-4440**	130K = **933-3894**	510K = **933-4661**
2K2 = **933-4149**	9K1 = **933-4955**	39K = **933-4491**	150K = **933-3940**	560K = **933-4718**
2K4 = **933-4203**	10K = **933-3720**	43K = **933-4548**	160K = **933-4009**	620K = **933-4769**
2K7 = **933-4262**	11K = **933-3789**	47K = **933-4599**	180K = **933-4050**	680K = **933-4815**
3K = **933-4319**	12K = **933-3835**	51K = **933-4653**	200K = **933-4106**	750K = **933-4874**
3K3 = **933-4360**	13K = **933-3886**	56K = **933-4700**	220K = **933-4165**	820K = **933-4920**
3K6 = **933-4432**	15K = **933-3932**	62K = **933-4750**	240K = **933-4238**	910K = **933-4971**
3K9 = **933-4483**	16K = **933-3991**	68K = **933-4807**	270K = **933-4289**	1M = **933-3746**
4K3 = **933-4530**	18K = **933-4041**			

0.1 Watt ±5% (0805 Case Size)

		Price Each			
		MIXED QUANTITY PRICING			
	Order Code	50+	250+	1K+	5K+
0805 Case Size	All Values ●	0.06	0.05	0.04	0.03

1000 Piece Reels

● 100mm reel containing 1000 pieces

Stocked in the following OHMIC Values:

0R = **759-788**	100R = **759-855**	1K5 = **759-922**	15K = **760-511**	150K = **761-620**
10R = **759-790**	150R = **759-867**	2K2 = **760-183**	22K = **761-084**	220K = **761-631**
15R = **759-806**	220R = **759-879**	3K3 = **760-195**	33K = **761-588**	330K = **761-643**
22R = **759-818**	330R = **759-880**	4K7 = **760-201**	47K = **761-590**	470K = **761-655**
33R = **759-820**	470R = **759-892**	6K8 = **760-213**	68K = **761-606**	680K = **761-667**
47R = **759-831**	680R = **759-909**	10K = **760-225**	100K = **761-618**	1M = **761-679**
68R = **759-843**	1K = **759-910**			

1000 Pieces per Reel		Price Per Reel			
		MIXED QUANTITY PRICING			
	Order Code	1+	3+	5+	10+
0805 Case Size	All values	21.30	19.50	14.70	9.70

0.125 Watt ±5% (1206 Case Size)

Stocked in the following OHMIC Values:

0R = **772-240**	47R = **613-540**	680R = **613-680**	8K2 = **613-812**	100K = **613-940**
1R5 = **758-360**	56R = **613-551**	820R = **613-691**	10K = **613-824**	120K = **613-952**
2R2 = **758-371**	68R = **613-563**	1K = **613-708**	12K = **613-836**	150K = **613-964**
3R3 = **758-383**	82R = **613-575**	1K2 = **613-710**	15K = **613-848**	180K = **613-976**
4R7 = **758-395**	100R = **613-587**	1K5 = **613-721**	18K = **613-850**	220K = **613-988**
6R8 = **758-401**	120R = **613-599**	1K8 = **613-733**	22K = **613-861**	270K = **613-990**
10R = **613-460**	150R = **613-605**	2K2 = **613-745**	27K = **613-873**	330K = **614-002**
12R = **613-472**	180R = **613-617**	2K7 = **613-757**	33K = **613-885**	390K = **614-014**
15R = **613-484**	220R = **613-629**	3K3 = **613-769**	39K = **613-897**	470K = **614-026**
18R = **613-496**	270R = **613-630**	3K9 = **613-770**	47K = **613-903**	560K = **614-038**
22R = **613-502**	330R = **613-642**	4K7 = **613-782**	56K = **613-915**	680K = **614-040**
27R = **613-514**	390R = **613-654**	5K6 = **613-794**	68K = **613-927**	820K = **614-051**
33R = **613-526**	470R = **613-666**	6K8 = **613-800**	82K = **613-939**	1M = **614-063**
39R = **613-538**	560R = **613-678**			

		Price Each			
		MIXED QUANTITY PRICING			
	Order Code	50+	250+	1K+	5K+
1206 Case Size	All Values	0.04	0.03	0.03	0.02

0R = **933-6974**	47R = **933-7423**	680R = **933-7547**	8K2 = **933-7610**	100K = **933-7024**
1R5 = **933-7148**	56R = **933-7482**	820R = **933-7601**	10K = **933-7016**	120K = **933-7083**
2R2 = **933-7253**	68R = **933-7539**	1K = **933-7008**	12K = **933-7075**	150K = **933-7130**
3R3 = **933-7369**	82R = **933-7598**	1K2 = **933-7067**	15K = **933-7121**	180K = **933-7199**
4R7 = **933-7474**	100R = **933-6990**	1K5 = **933-7113**	18K = **933-7180**	220K = **933-7245**
6R8 = **933-7580**	120R = **933-7059**	1K8 = **933-7172**	22K = **933-7237**	270K = **933-7300**
10R = **933-6982**	150R = **933-7105**	2K2 = **933-7229**	27K = **933-7296**	330K = **933-7350**
12R = **933-7040**	180R = **933-7164**	2K7 = **933-7288**	33K = **933-7342**	390K = **933-7415**
15R = **933-7091**	220R = **933-7210**	3K3 = **933-7334**	39K = **933-7407**	470K = **933-7466**
18R = **933-7156**	270R = **933-7270**	3K9 = **933-7393**	47K = **933-7458**	560K = **933-7520**
22R = **933-7202**	330R = **933-7326**	4K7 = **933-7440**	56K = **933-7512**	680K = **933-7571**
27R = **933-7261**	390R = **933-7385**	5K6 = **933-7504**	68K = **933-7563**	820K = **933-7636**
33R = **933-7318**	470R = **933-7431**	6K8 = **933-7555**	82K = **933-7628**	1M = **933-7032**
39R = **933-7377**	560R = **933-7490**			

0.125 Watt ±5% (1206 Case Size)

		Price Each			
		MIXED QUANTITY PRICING			
	Order Code	50+	250+	1K+	5K+
0805 Case Size	All Values ●	0.06	0.05	0.04	0.03

1000 Piece Reels

● 100mm reel containing 1000 pieces

Stocked in the following OHMIC Values:

0R = **761-680**	150R = **761-710**	2K2 = **761-746**	10K = **761-771**	100K = **761-801**
10R = **761-692**	470R = **761-722**	3K3 = **761-758**	22K = **761-783**	120K = **761-813**
100R = **761-709**	1K = **761-734**	4K7 = **761-760**	47K = **761-795**	1M = **761-825**

207227

1000 Pieces per Reel		Price Per Reel			
		MIXED QUANTITY PRICING			
	Order Code	1+	3+	5+	10+
1206 Case Size	All Values	0.04	0.03	0.03	0.02

Surface Mount Resistor Kits

multicomp

- Ring binder surface mount resistor kits
- 0603, 0805 and 1206 case sizes
- 5% and 1% tolerance options
- Available in E6, E12 and E24 series values
- Kits contain 100 pieces of each ohmic value from 10R to 1M plus 0R
- All resistors are individually marked and supplied on 8mm tapes
- Kits can be restocked when required

SMD

E6 Series Kits	0, 10, 15, 22, 33, 47, 68 (100 of each value)
E12 Series Kits	0, 10, 12, 15, 18, 22, 27, 33, 39, 47, 56, 68, 82 (100 of each value)
E24 Series Kits	0, 10, 11, 12, 13, 15, 16, 18, 20, 22, 24, 27, 30, 33, 36, 39, 43, 47, 51, 56, 62, 68, 75, 82, 91 (100 of each value)
Contents:	E6 kits 32 values, E12 kits 62 values, E24 kits 121 values

272554

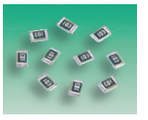
Case Size	Contents	Tolerance	Order Code	Price Each 1+	3+	5+
0603	E24	±1%	**933-1654**●	313.52	297.31	283.74
0603	E6	±5%	**933-2359**●	194.65	184.20	179.22
0603	E12	±5%	**933-2367**●	211.90	201.65	195.85
0805	E24	±1%	**933-3673**●	313.52	297.31	283.74
0805	E12	±5%	**933-4980**●	211.90	201.65	195.85
0805	E24	±5%	**933-4998**●	270.39	256.40	244.68
1206	E24	±1%	**933-6966**●	313.52	297.31	283.74
1206	E12	±5%	**933-7644**●	211.90	201.65	195.85

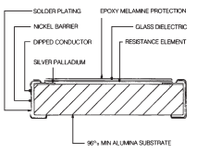
Insert Sheets		Price Per Pack 1+	3+	5+
Pack of 5	NEW **541-2067**	19.37	17.74	– –

Surface Mount – Nickel Barrier

TT electronics Welwyn

WCR Series





SMD

Proof voltage	500V	Operating temperature	-55°C to +125°C
Insulation resistance	1000MRΩ @ 500V		

0.1 Watt ±2% (0805 Case Size)

L = 2.0, W = 1.25, H = 0.4—0.55 Voltage rating 100V

Stocked in the following OHMIC Values:

0R = **109-9786**	100R = **109-9793**	1K2 = **110-0315**	12K = **110-0321**	120K = **110-0328**
10R = **109-9787**	120R = **110-0308**	1K5 = **109-9801**	15K = **109-9808**	150K = **109-9817**
12R = **110-0302**	150R = **109-9794**	1K8 = **110-0316**	18K = **110-0322**	180K = **110-0329**
15R = **109-9788**	180R = **110-0309**	2K2 = **109-9803**	22K = **109-9809**	220K = **109-9818**
18R = **110-0303**	220R = **109-9795**	2K7 = **110-0317**	27K = **110-0323**	270K = **110-0330**
22R = **109-9789**	270R = **110-0310**	3K3 = **109-9804**	33K = **109-9810**	330K = **109-9820**
27R = **110-0304**	330R = **109-9797**	3K9 = **110-0318**	39K = **110-0325**	390K = **110-0331**
33R = **109-9790**	390R = **110-0311**	4K7 = **109-9805**	47K = **109-9812**	470K = **109-9821**
39R = **110-0305**	470R = **109-9798**	5K6 = **110-0319**	56K = **110-0326**	560K = **110-0332**
47R = **109-9791**	560R = **110-0313**	6K8 = **109-9806**	68K = **109-9813**	680K = **109-9822**
56R = **110-0306**	680R = **109-9799**	8K2 = **110-0320**	82K = **110-0327**	820K = **110-0333**
68R = **109-9792**	820R = **110-0314**	10K = **109-9807**	100K = **109-9816**	1M = **109-9823**
82R = **110-0307**	1K = **109-9800**			

	Price Each			
	MIXED QUANTITY PRICING			
Order Code	50+	500+	1K+	5K+
All Values ●	0.09	0.06	0.05	0.03

0.25 Watt ±2% (1206 Case Size)

Note : >1M = 0.125W

L= 3.2, W=1.6, H=0.5—0.65 Voltage rating 200V.

Stocked in the following OHMIC Values:

0R = **110-0137**	75R = **110-0161**	620R = **110-0186**	5K1 = **110-0211**	43K = **110-0235**
10R = **110-0138**	82R = **110-0162**	680R = **110-0187**	5K6 = **110-0212**	47K = **110-0236**
11R = **110-0139**	91R = **110-0163**	750R = **110-0188**	6K2 = **110-0213**	51K = **110-0237**
12R = **110-0140**	100R = **110-0164**	820R = **110-0189**	6K8 = **110-0214**	56K = **110-0238**
13R = **110-0141**	110R = **110-0165**	910R = **110-0190**	7K5 = **110-0215**	62K = **110-0239**
15R = **110-0143**	120R = **110-0167**	1K = **110-0192**	8K2 = **110-0216**	68K = **110-0240**
16R = **110-0144**	130R = **110-0168**	1K1 = **110-0193**	9K1 = **110-0217**	75K = **110-0241**
18R = **110-0145**	150R = **110-0169**	1K2 = **110-0194**	10K = **110-0218**	82K = **110-0242**
20R = **110-0146**	160R = **110-0170**	1K3 = **110-0195**	11K = **110-0219**	91K = **110-0243**
22R = **110-0147**	180R = **110-0171**	1K5 = **110-0196**	12K = **110-0220**	100K = **110-0244**
24R = **110-0148**	200R = **110-0172**	1K6 = **110-0197**	13K = **110-0222**	110K = **110-0246**
27R = **110-0149**	220R = **110-0173**	1K8 = **110-0198**	15K = **110-0223**	120K = **110-0247**
30R = **110-0150**	240R = **110-0174**	2K = **110-0199**	16K = **110-0224**	130K = **110-0248**
33R = **110-0151**	270R = **110-0175**	2K2 = **110-0200**	18K = **110-0225**	150K = **110-0249**
36R = **110-0152**	300R = **110-0176**	2K4 = **110-0201**	20K = **110-0226**	160K = **110-0250**
39R = **110-0153**	330R = **110-0177**	2K7 = **110-0202**	22K = **110-0227**	180K = **110-0251**
43R = **110-0155**	360R = **110-0179**	3K = **110-0203**	24K = **110-0228**	200K = **110-0252**
47R = **110-0156**	390R = **110-0181**	3K3 = **110-0204**	27K = **110-0229**	220K = **110-0253**
51R = **110-0157**	430R = **110-0182**	3K6 = **110-0205**	30K = **110-0230**	240K = **110-0254**
56R = **110-0158**	470R = **110-0183**	3K9 = **110-0206**	33K = **110-0231**	270K = **110-0255**
62R = **110-0159**	510R = **110-0184**	4K3 = **110-0207**	36K = **110-0232**	300K = **110-0256**
68R = **110-0160**	560R = **110-0185**	4K7 = **110-0209**	39K = **110-0234**	330K = **110-0258**

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

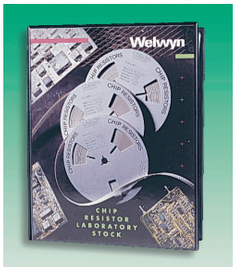
360K = **110-0259**	470K = **110-0262**	620K = **110-0265**	820K = **110-0268**	1M5 = **110-0273**
390K = **110-0260**	510K = **110-0263**	680K = **110-0266**	910K = **110-0271**	2M2 = **110-0274**
430K = **110-0261**	560K = **110-0264**	750K = **110-0267**	1M = **110-0272**	3M3 = **110-0275**

207199

	Price Each			
	MIXED QUANTITY PRICING			
Order Code	50+	+	+	+
All Values ●	0.02	– –	– –	– –

WCR Lab Kits
(0805 and 1206 Case Sizes)

TT electronics Welwyn



- Sturdy plastic binder
- 50 each of 121 E24 values
- 0805 and 1206 case sizes in the range 10R to 1M
- Includes 0Ω jumper
- Binder can be restocked when required

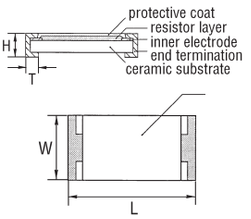
SMD

207202

Case Size	Order Code	Price Each
0805	SMD **109-9902**●	383.91
1206	SMD **109-9785**●	395.25

Surface Mount - Nickel Barrier
RC Series

Phycomp A YAGEO COMPANY



SMD

Range	Case Size	Dimensions L	W	H	T	Voltage Rating	Tolerance	Power rating @ 70°C	Temperature Coefficient
RC31	0402	1	0.5	0.55	0.5	50	5%	0.063	±200ppm/°C
RC32H	0402	1	0.5	0.35	0.2	50	1%	0.063	±250ppm/°C
RC21	0603	1.6	0.8	0.55	0.4	50	5%	0.063	±200ppm/°C
RC22H	0603	1.6	0.8	0.45	0.3	50	1%	0.063	±250ppm/°C
RC11	0805	2	1.25	0.45	0.3	150	5%	0.125	±200ppm/°C
RC12H	0805	2	1.25	0.55	0.4	150	1%	0.125	±250ppm/°C
RC01	1206	3.2	1.6	0.35	0.25	200	5%	0.25	±200ppm/°C
RC02H	1206	3.2	1.6	0.6	0.5	200	1%	0.25	±100ppm/°C
SRC01	1206	3.25	1.6	0.55	0.45	200	5%	0.063	±200ppm/°C

Operating temperature RC31, RC32H -55°C to +125°C
RC21, RC22H, RC11, RC12H, RC01, RC02H, SRC01 -55°C to +155°C

RC31 - 0.063 Watt ±5% (0402 Case Size)
10000 per Reel

Stocked in the following OHMIC Values:

0R = **923-2516**	100R = **923-2648**	1K = **923-2761**	10K = **923-2885**	100K = **923-3008**
10R = **923-2524**	120R = **923-2656**	1K2 = **923-2770**	12K = **923-2893**	150K = **923-3024**
12R = **923-2532**	150R = **923-2664**	1K5 = **923-2788**	15K = **923-2907**	180K = **923-3032**
15R = **923-2540**	180R = **923-2672**	1K8 = **923-2796**	18K = **923-2915**	220K = **923-3040**
18R = **923-2559**	220R = **923-2680**	2K2 = **923-2800**	22K = **923-2923**	270K = **923-3059**
22R = **923-2567**	270R = **923-2699**	2K7 = **923-2818**	27K = **923-2931**	330K = **923-3067**
27R = **923-2575**	330R = **923-2702**	3K3 = **923-2826**	33K = **923-2940**	390K = **923-3075**
33R = **923-2583**	390R = **923-2710**	3K9 = **923-2834**	39K = **923-2958**	470K = **923-3083**
39R = **923-2591**	470R = **923-2729**	4K7 = **923-2842**	47K = **923-2966**	560K = **923-3091**
47R = **923-2605**	560R = **923-2737**	5K6 = **923-2850**	56K = **923-2974**	680K = **923-3105**
56R = **923-2613**	680R = **923-2745**	6K8 = **923-2869**	68K = **923-2982**	820K = **923-3113**
68R = **923-2621**	820R = **923-2753**	8K2 = **923-2877**	82K = **923-2990**	1M = **923-3121**
82R = **923-2630**				

	Price Each			
	MIXED QUANTITY PRICING			
Order Code	50+	1K+	5K+	15K+
All Values ●	0.09	0.06	0.03	0.02

RC32H - 0.063 Watt ±1% (0402 Case Size)
10000 per Reel

Stocked in the following OHMIC Values:

6R8 = **923-8972**	82R = **923-9103**	1K = **923-9235**	12K = **923-9367**	150K = **923-9499**
8R2 = **923-8980**	100R = **923-9111**	1K2 = **923-9243**	15K = **923-9375**	180K = **923-9502**
10R = **923-8999**	120R = **923-9120**	1K5 = **923-9251**	18K = **923-9383**	220K = **923-9510**
12R = **923-9006**	150R = **923-9138**	1K8 = **923-9260**	22K = **923-9391**	270K = **923-9529**
15R = **923-9014**	180R = **923-9146**	2K2 = **923-9278**	27K = **923-9405**	330K = **923-9537**
18R = **923-9022**	220R = **923-9154**	2K7 = **923-9286**	33K = **923-9413**	390K = **923-9545**
22R = **923-9030**	270R = **923-9162**	3K3 = **923-9294**	39K = **923-9421**	470K = **923-9553**
27R = **923-9049**	330R = **923-9170**	3K9 = **923-9308**	47K = **923-9430**	680K = **923-9561**
33R = **923-9057**	390R = **923-9189**	4K7 = **923-9316**	56K = **923-9448**	820K = **923-9570**
39R = **923-9065**	470R = **923-9197**	5K6 = **923-9324**	68K = **923-9456**	1M = **923-9588**
47R = **923-9073**	560R = **923-9200**	6K8 = **923-9332**	82K = **923-9464**	1M2 = **923-9596**
56R = **923-9081**	680R = **923-9219**	8K2 = **923-9340**	100K = **923-9472**	1M5 = **923-9600**
68R = **923-9090**	820R = **923-9227**	10K = **923-9359**	120K = **923-9480**	2M2 = **923-9618**

Order Multiple=50	Price Each			
	MIXED QUANTITY PRICING			
Order Code	50+	1K+	5K+	15K+
All Values ●	0.15	0.08	0.05	0.02

RC21 - 0.063 Watt ±5% (0603 Case Size)
10000* per Reel

Stocked in the following OHMIC Values:

0R = **923-3130**	120R = **923-3261**	1K5 = **923-3407**	15K = **923-3520**	150K = **923-3644**
10R = **923-3148**	150R = **923-3270**	1K8 = **923-3415**	18K = **923-3539**	180K = **923-3652**
15R = **923-3156**	180R = **923-3288**	2K2 = **923-3423**	22K = **923-3547**	220K = **923-3660**
18R = **923-3164**	220R = **923-3296**	2K7 = **923-3431**	27K = **923-3555**	270K = **923-3679**
22R = **923-3172**	270R = **923-3300**	3K3 = **923-3440**	33K = **923-3563**	330K = **923-3687**
27R = **923-3180**	330R = **923-3318**	3K9 = **923-3458**	39K = **923-3571**	390K = **923-3695**
33R = **923-3199**	390R = **923-3326**	4K7 = **923-3466**	47K = **923-3580**	470K = **923-3709**
39R = **923-3202**	470R = **923-3334**	5K6 = **923-3474**	56K = **923-3598**	560K = **923-3717**
47R = **923-3210**	560R = **923-3342**	6K8 = **923-3482**	68K = **923-3601**	680K = **923-3725**
56R = **923-3229**	680R = **923-3369**	8K2 = **923-3490**	82K = **923-3610**	820K = **923-3733**
68R = **923-3237**	820R = **923-3377**	10K = **923-3504**	100K = **923-3628**	1M = **923-3741**
82R = **923-3245**	1K = **923-3385**	12K = **923-3512**	120K = **923-3636**	10M = **923-6350**
100R = **923-3253**	1K2 = **923-3393**			

Order Multiple=50	Price Each			
	MIXED QUANTITY PRICING			
Order Code	50+	1K+	5K+	15K+
All Values ●	0.15	0.08	0.03	0.02

RC22H - 0.063 Watt ±1% (0603 Case Size)
5000 per Reel

Stocked in the following OHMIC Values:

1R = **923-8123**	27R = **923-8298**	680R = **923-8468**	18K = **923-8638**	470K = **923-8808**
1R2 = **923-8131**	33R = **923-8301**	820R = **923-8476**	22K = **923-8646**	560K = **923-8816**
1R5 = **923-8140**	39R = **923-8310**	1K = **923-8484**	27K = **923-8654**	680K = **923-8824**
1R8 = **923-8158**	47R = **923-8328**	1K2 = **923-8492**	33K = **923-8662**	820K = **923-8832**
2R2 = **923-8166**	56R = **923-8336**	1K5 = **923-8506**	39K = **923-8670**	1M = **923-8840**
2R7 = **923-8174**	68R = **923-8344**	1K8 = **923-8514**	47K = **923-8689**	1M2 = **923-8859**
3R3 = **923-8182**	82R = **923-8352**	2K2 = **923-8522**	56K = **923-8697**	1M5 = **923-8867**
3R9 = **923-8190**	100R = **923-8360**	2K7 = **923-8530**	68K = **923-8700**	1M8 = **923-8875**
4R7 = **923-8204**	120R = **923-8379**	3K3 = **923-8549**	82K = **923-8719**	2M2 = **923-8883**
5R6 = **923-8212**	150R = **923-8387**	3K9 = **923-8557**	100K = **923-8727**	2M7 = **923-8891**
6R8 = **923-8220**	180R = **923-8395**	4K7 = **923-8565**	120K = **923-8735**	3M3 = **923-8905**
8R2 = **923-8239**	220R = **923-8409**	5K6 = **923-8573**	150K = **923-8743**	3M9 = **923-8913**
10R = **923-8247**	270R = **923-8417**	6K8 = **923-8581**	180K = **923-8751**	4M7 = **923-8921**
12R = **923-8255**	330R = **923-8425**	8K2 = **923-8590**	220K = **923-8760**	5M6 = **923-8930**
15R = **923-8263**	390R = **923-8433**	10K = **923-8603**	270K = **923-8778**	6M8 = **923-8948**
18R = **923-8271**	470R = **923-8441**	12K = **923-8611**	330K = **923-8786**	8M2 = **923-8956**
22R = **923-8280**	560R = **923-8450**	15K = **923-8620**	390K = **923-8794**	10M = **923-8964**

Order Multiple=50	Price Each			
	MIXED QUANTITY PRICING			
Order Code	50+	1K+	5K+	15K+
All Values ●	0.15	0.08	0.05	0.02

RC11 - 0.125 Watt ±5% (0805 Case Size)
10000 per Reel

Stocked in the following OHMIC Values:

0R = **923-3750**	100R = **923-3881**	1K2 = **923-4012**	15K = **923-4152**	150K = **923-4276**
10R = **923-3768**	120R = **923-3890**	1K5 = **923-4020**	18K = **923-4160**	180K = **923-4284**
12R = **923-3776**	150R = **923-3903**	1K8 = **923-4039**	22K = **923-4179**	220K = **923-4292**
15R = **923-3784**	180R = **923-3911**	2K2 = **923-4055**	27K = **923-4187**	270K = **923-4306**
18R = **923-3792**	220R = **923-3920**	2K7 = **923-4063**	33K = **923-4195**	330K = **923-4314**
22R = **923-3806**	270R = **923-3938**	3K3 = **923-4071**	39K = **923-4209**	390K = **923-4322**
27R = **923-3814**	330R = **923-3946**	3K9 = **923-4080**	47K = **923-4217**	470K = **923-4330**
33R = **923-3822**	390R = **923-3954**	4K7 = **923-4098**	56K = **923-4225**	560K = **923-4349**
39R = **923-3830**	470R = **923-3962**	5K6 = **923-4101**	68K = **923-4233**	680K = **923-4357**
47R = **923-3849**	560R = **923-3970**	6K8 = **923-4110**	82K = **923-4241**	820K = **923-4365**
56R = **923-3857**	680R = **923-3989**	8K2 = **923-4128**	100K = **923-4250**	1M = **923-4373**
68R = **923-3865**	820R = **923-3997**	10K = **923-4136**	120K = **923-4268**	10M = **923-6392**
82R = **923-3873**	1K = **923-4004**	12K = **923-4144**		

Order Multiple=50	Price Each			
	MIXED QUANTITY PRICING			
Order Code	50+	1K+	5K+	15K+
All Values ●	0.15	0.08	0.03	0.02

RC12H - 0.125 Watt ±1% (0805 Case Size)
Stocked in the following OHMIC Values:
5000 per Reel

1R = **923-7127**	27R = **923-7291**	680R = **923-7470**	18K = **923-7780**	470K = **923-7950**
1R2 = **923-7135**	33R = **923-7305**	820R = **923-7488**	22K = **923-7798**	560K = **923-7968**
1R5 = **923-7143**	39R = **923-7313**	1K = **923-7496**	27K = **923-7801**	680K = **923-7976**
1R8 = **923-7151**	47R = **923-7321**	1K2 = **923-7500**	33K = **923-7810**	820K = **923-7984**
2R2 = **923-7160**	56R = **923-7330**	1K5 = **923-7518**	39K = **923-7828**	1M = **923-7992**
2R7 = **923-7178**	68R = **923-7348**	1K8 = **923-7526**	47K = **923-7836**	1M2 = **923-8000**
3R3 = **923-7186**	82R = **923-7356**	2K2 = **923-7534**	56K = **923-7844**	1M5 = **923-8018**
3R9 = **923-7194**	100R = **923-7364**	2K7 = **923-7666**	68K = **923-7852**	1M8 = **923-8026**
4R7 = **923-7208**	120R = **923-7372**	3K3 = **923-7682**	82K = **923-7860**	2M2 = **923-8034**
5R6 = **923-7216**	150R = **923-7380**	3K9 = **923-7690**	100K = **923-7879**	2M7 = **923-8042**
6R8 = **923-7224**	180R = **923-7399**	4K7 = **923-7704**	120K = **923-7887**	3M3 = **923-8050**
8R2 = **923-7232**	220R = **923-7402**	5K6 = **923-7712**	150K = **923-7895**	3M9 = **923-8069**
10R = **923-7240**	270R = **923-7410**	6K8 = **923-7739**	180K = **923-7909**	4M7 = **923-8077**
12R = **923-7259**	330R = **923-7429**	8K2 = **923-7747**	220K = **923-7917**	5M6 = **923-8085**
15R = **923-7267**	390R = **923-7437**	10K = **923-7755**	270K = **923-7925**	6M8 = **923-8093**
18R = **923-7275**	470R = **923-7445**	12K = **923-7763**	330K = **923-7933**	8M2 = **923-8107**
22R = **923-7283**	560R = **923-7461**	15K = **923-7771**	390K = **923-7941**	10M = **923-8115**

Order Multiple=50	Price Each			
	MIXED QUANTITY PRICING			
Order Code	50+	1K+	5K+	15K+
All Values ●	0.17	0.09	0.05	0.03

RoHS ● Compliant ◀ Non-compliant ‡ Limited stock - RoHS replacement available

RC01 - 0.25 Watt ±5% (1206 Case Size)

Stocked in the following OHMIC Values:

5000 per Reel

0R =	**924-0276**	100R =	**924-0403**	1K =	**924-0527**	10K =	**924-0640**	100K =	**924-0764**
10R =	**924-0284**	120R =	**924-0411**	1K2 =	**924-0535**	12K =	**924-0659**	120K =	**924-0772**
12R =	**924-0292**	150R =	**924-0420**	1K5 =	**924-0543**	15K =	**924-0667**	150K =	**924-0780**
15R =	**924-0306**	180R =	**924-0438**	1K8 =	**924-0551**	18K =	**924-0675**	220K =	**924-0799**
18R =	**924-0314**	220R =	**924-0446**	2K2 =	**924-0560**	22K =	**924-0683**	330K =	**924-0802**
22R =	**924-0322**	270R =	**924-0454**	2K7 =	**924-0578**	27K =	**924-0691**	330K =	**924-0810**
27R =	**924-0330**	330R =	**924-0462**	3K3 =	**924-0586**	33K =	**924-0705**	390K =	**924-0829**
33R =	**924-0349**	390R =	**924-0470**	3K9 =	**924-0594**	39K =	**924-0713**	470K =	**924-0837**
39R =	**924-0357**	470R =	**924-0489**	4K7 =	**924-0608**	47K =	**924-0721**	560K =	**924-0845**
47R =	**924-0365**	560R =	**924-0497**	5K6 =	**924-0616**	56K =	**924-0730**	680K =	**924-0853**
56R =	**924-0373**	680R =	**924-0500**	6K8 =	**924-0624**	68K =	**924-0748**	820K =	**924-0861**
68R =	**924-0381**	820R =	**924-0519**	8K2 =	**924-0632**	82K =	**924-0756**	1M =	**924-0870**
82R =	**924-0390**								

Order Multiple=50 ●	Price Each MIXED QUANTITY PRICING			
Order Code	50+	1K+	5K+	15K+
All Values ●	0.18	0.09	0.05	0.03

RC02H - 0.25 Watt ±1% (1206 Case Size)

Stocked in the following OHMIC Values:

5000 per Reel

Stocked in the following OHMIC Values:

1R =	**923-6520**	27R =	**923-6694**	680R =	**924-0934**	18K =	**923-6899**	470K =	**924-1108**
1R2 =	**923-6538**	33R =	**923-6708**	820R =	**923-6813**	22K =	**924-1027**	560K =	**923-6988**
1R5 =	**923-6546**	39R =	**923-6716**	1K =	**924-0942**	27K =	**923-6902**	680K =	**924-1116**
1R8 =	**923-6554**	47R =	**923-6724**	1K2 =	**923-6821**	33K =	**924-1035**	820K =	**923-6996**
2R2 =	**923-6562**	56R =	**923-6732**	1K5 =	**924-0950**	39K =	**923-6910**	1M =	**924-1124**
2R7 =	**923-6570**	68R =	**923-6740**	1K8 =	**923-6830**	47K =	**924-1043**	1M2 =	**923-7003**
3R3 =	**923-6589**	82R =	**923-6759**	2K2 =	**924-0969**	56K =	**923-6929**	1M5 =	**923-7011**
3R9 =	**923-6597**	100R =	**924-0888**	2K7 =	**923-6848**	68K =	**924-1051**	1M8 =	**923-7020**
4R7 =	**923-6600**	120R =	**923-6767**	3K3 =	**924-0977**	82K =	**923-6937**	2M2 =	**923-7038**
5R6 =	**923-6619**	150R =	**924-0896**	3K9 =	**923-6856**	100K =	**924-1060**	2M7 =	**923-7046**
6R8 =	**923-6627**	180R =	**923-6775**	4K7 =	**924-0985**	120K =	**923-6945**	3M3 =	**923-7054**
8R2 =	**923-6635**	220R =	**924-0900**	5K6 =	**923-6864**	150K =	**924-1078**	3M9 =	**923-7062**
10R =	**923-6643**	270R =	**923-6783**	6K8 =	**924-0993**	180K =	**923-6953**	4M7 =	**923-7070**
12R =	**923-6651**	330R =	**924-0918**	8K2 =	**923-6872**	220K =	**924-1086**	5M6 =	**923-7089**
15R =	**923-6660**	390R =	**923-6791**	10K =	**924-1000**	270K =	**923-6961**	6M8 =	**923-7097**
18R =	**923-6678**	470R =	**924-0926**	12K =	**923-6880**	330K =	**924-1094**	8M2 =	**923-7100**
22R =	**923-6686**	560R =	**923-6805**	15K =	**924-1019**	390K =	**923-6970**	10M =	**923-7119**

Order Multiple=50	Price Each MIXED QUANTITY PRICING			
Order Code	50+	1K+	5K+	15K+
All Values ●	0.06	0.05	0.03	0.03

SRC01, Surge Resistor - 0.063 Watt ±5% (1206 Case Size)

5000 per Reel

2R2 = **923-9650**

207200

Order Multiple=50	Price Each MIXED QUANTITY PRICING			
Order Code	50+	1K+	5K+	15K+
All Values ●	0.72	0.49	0.42	0.33

Surface Mount - Nickel Barrier Full Reels

Phycomp A YAGEO COMPANY

RC Series

- Thick film surface mount resistors supplied on full reels

NEW SMD FULL REELS

RC32H - 0.063 Watt ±1% (0402 Case Size)

10000 per Reel

Stocked in the following OHMIC Values:

0R =	**111-7280**	68R =	**111-7318**	1K =	**111-7283**	15K =	**111-7290**	220K =	**111-7298**
6R8 =	**111-7317**	100R =	**111-7281**	1K5 =	**111-7289**	22K =	**111-7297**	330K =	**111-7305**
10R =	**111-7287**	150R =	**111-7288**	2K2 =	**111-7296**	33K =	**111-7304**	470K =	**111-7310**
15R =	**111-7293**	220R =	**111-7295**	3K3 =	**111-7303**	47K =	**111-7309**	680K =	**111-7316**
22R =	**111-7301**	330R =	**111-7302**	4K7 =	**111-7308**	68K =	**111-7315**	1M =	**111-7286**
33R =	**111-7306**	470R =	**111-7307**	6K8 =	**111-7314**	100K =	**111-7285**	1M5 =	**111-7292**
47R =	**111-7311**	680R =	**111-7313**	10K =	**111-7284**	150K =	**111-7291**	2M2 =	**111-7299**

		Price Per Reel	
Order Code	Reel Quantity	1+	3+
All Values ●	10000	89.81	80.82

RC22H - 0.063 Watt ±1% (0603 Case Size)

5000 per Reel

Stocked in the following OHMIC Values:

0R =	**111-6890**	22R =	**111-7255**	680R =	**111-7273**	22K =	**111-7251**	680K =	**111-7276**
1R =	**111-7239**	33R =	**111-7263**	1K =	**111-7234**	33K =	**111-7259**	1M =	**111-7237**
1R5 =	**111-7247**	47R =	**111-7272**	1K5 =	**111-7242**	47K =	**111-7266**	1M5 =	**111-7246**
2R2 =	**111-7254**	68R =	**111-7279**	2K2 =	**111-7250**	68K =	**111-7275**	2M2 =	**111-7253**
3R3 =	**111-7262**	100R =	**111-7232**	3K3 =	**111-7258**	100K =	**111-7236**	3M3 =	**111-7261**
4R7 =	**111-7271**	150R =	**111-7241**	4K7 =	**111-7265**	150K =	**111-7244**	4M7 =	**111-7268**
6R8 =	**111-7278**	220R =	**111-7249**	6K8 =	**111-7274**	220K =	**111-7252**	6M8 =	**111-7277**
10R =	**111-7240**	330R =	**111-7256**	10K =	**111-7235**	330K =	**111-7260**	10M =	**111-7238**
15R =	**111-7248**	470R =	**111-7264**	15K =	**111-7243**	470K =	**111-7267**		

		Price Per Reel	
Order Code	Reel Quantity	1+	3+
All Values ●	5000	33.66	30.30

RC12H - 0.125 Watt ±1% (0805 Case Size)

5000 per Reel

Stocked in the following OHMIC Values:

0R =	**111-7368**	22R =	**111-7392**	680R =	**111-7409**	22K =	**111-7388**	680K =	**111-7412**
1R =	**111-7376**	33R =	**111-7400**	1K =	**111-7370**	33K =	**111-7395**	1M =	**111-7374**
1R5 =	**111-7383**	47R =	**111-7408**	1K5 =	**111-7379**	47K =	**111-7404**	1M5 =	**111-7382**
2R2 =	**111-7391**	68R =	**111-7416**	2K2 =	**111-7387**	68K =	**111-7411**	2M2 =	**111-7390**
3R3 =	**111-7399**	100R =	**111-7369**	3K3 =	**111-7394**	100K =	**111-7372**	3M3 =	**111-7398**
4R7 =	**111-7407**	150R =	**111-7378**	4K7 =	**111-7402**	150K =	**111-7381**	4M7 =	**111-7406**
6R8 =	**111-7414**	220R =	**111-7386**	6K8 =	**111-7410**	220K =	**111-7389**	6M8 =	**111-7413**
10R =	**111-7377**	330R =	**111-7393**	10K =	**111-7371**	330K =	**111-7396**	10M =	**111-7375**
15R =	**111-7384**	470R =	**111-7401**	15K =	**111-7380**	470K =	**111-7405**		

		Price Per Reel	
Order Code	Reel Quantity	1+	3+
All Values ●	5000	39.29	35.35

5000 per Reel

RC02H - 0.25 Watt ±1% (1206 Case Size)

Stocked in the following OHMIC Values:

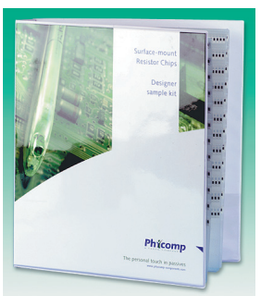
0R =	**111-7319**	22R =	**111-7343**	680R =	**111-7360**	22K =	**111-7339**	680K =	**111-7364**
1R =	**111-7327**	33R =	**111-7352**	1K =	**111-7321**	33K =	**111-7346**	1M =	**111-7325**
1R5 =	**111-7334**	47R =	**111-7359**	1K5 =	**111-7330**	47K =	**111-7355**	1M5 =	**111-7333**
2R2 =	**111-7342**	68R =	**111-7367**	2K2 =	**111-7338**	68K =	**111-7363**	2M2 =	**111-7341**
3R3 =	**111-7351**	100R =	**111-7320**	3K3 =	**111-7345**	100K =	**111-7323**	3M3 =	**111-7349**
4R7 =	**111-7358**	150R =	**111-7329**	4K7 =	**111-7354**	150K =	**111-7332**	4M7 =	**111-7357**
6R8 =	**111-7366**	220R =	**111-7337**	6K8 =	**111-7362**	220K =	**111-7340**	6M8 =	**111-7365**
10R =	**111-7328**	330R =	**111-7344**	10K =	**111-7322**	330K =	**111-7347**	10M =	**111-7326**
15R =	**111-7335**	470R =	**111-7353**	15K =	**111-7331**	470K =	**111-7356**		

423682

		Price Per Reel	
Order Code	Reel Quantity	1+	3+
All Values ●	5000	50.52	45.47

RC Series - Laboratory Kits

Phycomp A YAGEO COMPANY



- Surface mount resistor laboratory kits
- Choice of 0402, 0603, 0805 and 1206 case sizes
- 0402 case size contains 100 each of 62 values, E12 from 10R to 10M plus 0R
- 0603, 0805 and 1206 contain 50 each of 170 values, E24 from 1R to 10M plus 0R

SMD

207289

	Order Code	Price Each
RC32H 0402 Case size 1%	**923-9626** ●	604.50
RC21 0603 Case size 5%	SMD **923-9634** ●	604.50
RC22H 0603 Case size 1%	SMD **923-9642** ●	571.29
RC12H 0805 Case size 1%	**923-9871** ●	465.00
RC02H 1206 Case size 1%	**923-9880** ●	464.70

Surface Mount - Low-Ohmic Value

Phycomp A YAGEO COMPANY

LRC Series

SMD

Range	Case Size	Dimensions L	W	H	Voltage Rating	Tolerance	Power rating @ 70°C	Temperature Coefficient Values	
LRC 22	0603	1.6	0.8	0.45	50	1%	0.1W	0.01 to 0.04 R	±1500ppm/°C
								0.04 to 0.1 R	1000ppm/°C±
								0.1 to 0.3 R	800ppm/°C±
								0.3 to 0.51 R	600ppm/°C±
								0.51 to 0.68 R	300ppm/°C±
LRC 12P	0805	2	1.25	0.5	150	1%	0.25W	0.01 to 0.02 R	±1500ppm/°C
								0.02 to 0.051 R	1000ppm/°C±
								0.051 to 0.1 R	800ppm/°C±
								0.1 to 0.39 R	600ppm/°C±
								0.39 to 0.51 R	300ppm/°C±
								0.51 to 0.68 R	200ppm/°C±
LRC 02P	1206	3.2	1.7	0.65	200	1%	0.5W	0.01 to 0.02 R	±1500ppm/°C
								0.02 to 0.051 R	1000ppm/°C±
								0.051 to 0.1 R	800ppm/°C±
								0.1 to 0.39 R	600ppm/°C±
								0.39 to 0.51 R	300ppm/°C±
								0.51 to 0.68 R	200ppm/°C±

Operating temperature -55°C to +125°C

LRC22 - 0.1 Watt ±1% (0603 Case Size)

5000 per Reel

Stocked in the following OHMIC Values:

0R01 = **806-7767** 0R015 = **806-7775** 0R022 = **806-7783** 0R033 = **806-7791**

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

0R047 = **806-7805** 0R1 = **806-7821** 0R22 = **806-7848** 0R47 = **806-7864**
0R068 = **806-7813** 0R15 = **806-7830** 0R33 = **806-7856** 0R68 **806-7872**

Order Code	Price Each 10+	50+	100+	1K+	+
Values 0R01 to 0R068	0.63	0.51	0.42	0.36	– –
Values 0R1 to 0R68	0.36	0.29	0.24	0.21	– –

LRC12P - 0.25 Watt ±1% (0805 Case Size)

5000 per Reel

Stocked in the following OHMIC Values:

0R01 = **806-7643** 0R033 = **806-7678** 0R1 = **806-7708** 0R33 = **806-7732**
0R015 = **806-7651** 0R047 = **806-7686** 0R15 = **806-7716** 0R47 = **806-7740**
0R022 = **806-7660** 0R068 = **806-7694** 0R22 = **806-7724** 0R68 **806-7759**

Order Code	Price Each 10+	50+	100+	1K+	+
Values 0R01 to 0R068	0.76	0.61	0.51	0.44	– –
Values 0R1 to 0R68	0.44	0.35	0.29	0.25	– –

LRC02P - 0.5 Watt ±1% (1206 Case Size)

5000 per Reel

Stocked in the following OHMIC Values:

0R01 = **806-7520** 0R033 = **806-7554** 0R1 = **806-7589** 0R33 = **806-7619**
0R015 = **806-7538** 0R047 = **806-7562** 0R15 = **806-7597** 0R47 = **806-7627**
0R022 = **806-7546** 0R068 = **806-7570** 0R22 = **806-7600** 0R68 = **806-7635**

369994

Order Code	Price Each 10+	50+	100+	1K+	+
Values 0.01R to 0.068R	0.57	0.57	0.38	0.32	– –
Values 0.1R to 0.68R	0.44	0.35	0.29	0.25	– –

PRC111 Series - 0.5 Watt 1%

Phycomp A YAGEO COMPANY

- Surface mount power chip
- 0.5 Watt heat dissipation
- Compact 2010 case size

L=5 W=2.5 H=0.55
Supplied on tape (reel = 4K pcs)

Voltage rating	200V a.c./d.c.	Resistance tolerance	±1%
Power rating @ 70°C	0.5W	Climatic category (IEC60068)	55/125/56
Operating temperature	-55°C to + 125°C		

Stocked in the following OHMIC values:

0R = **923-5523** 6R8 = **923-5582** 470R = **923-5647** 47K = **923-5701** 2M2 = **923-5760**
1R = **923-5531** 10R = **923-5590** 1K = **923-5655** 100K = **923-5710** 3M3 = **923-5779**
1R5 = **923-5540** 22R = **923-5604** 2K2 = **923-5663** 220K = **923-5728** 4M7 = **923-5787**
2R2 = **923-5558** 47R = **923-5612** 4K7 = **923-5671** 470K = **923-5736** 6M8 = **923-5795**
3R3 = **923-5566** 100R = **923-5620** 10K = **923-5680** 1M = **923-5744** 10M = **923-5809**
4R7 = **923-5574** 220R = **923-5639** 22K = **923-5698** 1M5 = **923-5752**

207368

Order Code	Price Each 10+	100+	1K+	4K+
All Values ●	0.72	0.49	0.46	0.33

PRC221 Series - 1 Watt 5%

Phycomp A YAGEO COMPANY

- Surface mount power chip
- 1 Watt heat dissipation
- Compact 2512 case size

Power rating @ 70°C	1W
Resistance tolerance	±5%
Climatic category (IEC60068)	55/125/56
Voltage rating	200V a.c./d.c.
Operating temperature	-55°C to + 125°C

L=6.4 W=3.1 H=0.55
Supplied on tape (reel = 4K pcs)

Stocked in the following OHMIC values:

0R = **923-5825** 6R8 = **923-5884** 470R = **923-5949** 22K = **923-5990** 1M = **923-6040**
1R = **923-5833** 10R = **923-5892** 1K = **923-5957** 47K = **923-6007** 1M5 = **923-6058**
1R5 = **923-5841** 22R = **923-5906** 2K2 = **923-5965** 100K = **923-6015** 2M2 = **923-6066**
2R2 = **923-5850** 47R = **923-5914** 4K7 = **923-5973** 220K = **923-6023** 4M7 = **923-6074**
3R3 = **923-5868** 100R = **923-5922** 10K = **923-5981** 470K = **923-6031** 10M = **923-6082**
4R7 = **923-5876** 220R = **923-5930**

207367

Order Code	Price Each 10+	100+	1K+	4K+
All Values ●	0.49	0.35	0.29	0.21

PRC221 Series - Full Reels

SMD Phycomp A YAGEO COMPANY

- Surface mount power chip supplied on full reels

NEW FULL REELS

Stocked in the following OHMIC values:

0R = **111-7442** 1R = **111-7422** 1R5 = **111-7424**

2R2 = **111-7430** 100R = **111-7417** 22K = **111-7428**
3R3 = **111-7432** 220R = **111-7425** 47K = **111-7435**
4R7 = **111-7437** 470R = **111-7433** 100K = **111-7420**
6R8 = **111-7441** 1K = **111-7418** 220K = **111-7429**
10R = **111-7423** 2K2 = **111-7426** 470K = **111-7436**
22R = **111-7431** 4K7 = **111-7434** 1M = **111-7421**
47R = **111-7438** 10K = **111-7419**

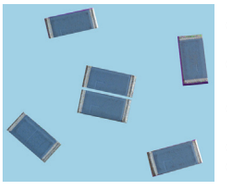
423716

Order Code	Reel Quantity	Price Per Reel 1+	3+
All Values ●	4000	359.16	323.25

Double Sided Chip Resistors

TT electronics Welwyn

DSC Series



- Two parallel resistance elementsin a single chip
- Excellent pulse withstand performance
- Laser trimmed up to 0.5% tolerance
- Enhanced working voltage
- Enhanced power rating

SMD NEW

Stocked in the following OHMIC Values:

Case Size	Power Rating @ 70°C	Tolerance	Temperature Coefficient	Operating temperature	Length	Width	Depth
1206	0.33W	5%	100ppm/°C	-55°C to 155°C	3.2	1.6	0.7
2010	0.75W	5%	100ppm/°C	-55°C to 155°C	5.1	2.5	0.8
2512	1.5W	5%	100ppm/°C	-55°C to 155°C	6.5	3.2	0.8

Stocked in the following OHMIC Values:

1206 Cases

10R = **111-4644** 150R = **111-4652** 1K5 = **111-4659** 15K = **111-4665**
15R = **111-4646** 220R = **111-4653** 2K2 = **111-4660** 22K = **111-4666**
22R = **111-4647** 330R = **111-4654** 3K3 = **111-4661** 33K = **111-4667**
33R = **111-4648** 470R = **111-4655** 4K7 = **111-4662** 47K = **111-4668**
47R = **111-4649** 680R = **111-4656** 6K8 = **111-4663** 68K = **111-4671**
68R = **111-4650** 1K = **111-4658** 10K = **111-4664** 100K = **111-4672**
100R = **111-4651**

Order Code	Price Each 10+	100+	500+	1K+	+
All Values ●	3.19	2.73	2.18	1.56	– –

2010 Cases

10R = **111-4673** 150R = **111-4680** 1K5 = **111-4687** 15K = **111-4693**
15R = **111-4674** 220R = **111-4681** 2K2 = **111-4688** 22K = **111-4695**
22R = **111-4675** 330R = **111-4683** 3K3 = **111-4689** 33K = **111-4696**
33R = **111-4676** 470R = **111-4684** 4K7 = **111-4690** 47K = **111-4697**
47R = **111-4677** 680R = **111-4685** 6K8 = **111-4691** 68K = **111-4698**
68R = **111-4678** 1K = **111-4686** 10K = **111-4692** 100K = **111-4699**
100R = **111-4679**

Order Code	Price Each 10+	100+	500+	1K+	+
All Values ●	3.81	3.03	2.47	1.79	– –

2512 Cases

Stocked in the following OHMIC Values:

10R = **111-4701** 150R = **111-4708** 1K5 = **111-4715** 15K = **111-4721**
15R = **111-4702** 220R = **111-4709** 2K2 = **111-4716** 22K = **111-4722**
22R = **111-4703** 330R = **111-4710** 3K3 = **111-4717** 33K = **111-4723**
33R = **111-4704** 470R = **111-4711** 4K7 = **111-4718** 47K = **111-4725**
47R = **111-4705** 680R = **111-4713** 6K8 = **111-4719** 68K = **111-4726**
68R = **111-4706** 1K = **111-4714** 10K = **111-4720** 100K = **111-4727**
100R = **111-4707**

Order Code	Price Each 10+	100+	500+	1K+	+
All Values ●	3.71	2.93	2.38	1.69	– –

PRC201 Series — 1 Watt ±5% & 1%

Phycomp A YAGEO COMPANY

1218 Case Size

- Surface mount power chip
- 1 watt heat dissipation
- Applications include Audio, Hi-Fi and Power Supplies

SMD

Power rating @ 70°C	1W
Temperature coefficient	10R =±200ppm/°C 15R to 1M = ±200ppm/°C
Voltage rating	200V
Maximum overload voltage	600V
Operating temperature	-55°C to + 155°C

L=4.6,W=3.05,H=0.55
Supplied on 8mm tape (reel=5K pcs)

±5% Tolerance

Stocked in the following OHMIC values:

0R = **325-7903** 3R3 = **335-2389** 10R = **923-9898** 47R = **507-842** 220R = **507-880**
0R = **923-5817** 3R3 = **923-6325** 15R = **507-817** 47R = **923-9936** 220R = **923-9979**
1R = **335-2353** 4R7 = **335-2390** 15R = **923-9901** 68R = **507-854** 330R = **507-891**
1R = **923-6295** 4R7 = **923-6333** 22R = **507-829** 68R = **923-9944** 330R = **923-9987**
1R5 = **335-2365** 6R8 = **335-2407** 22R = **923-9910** 100R = **507-866** 470R = **923-9995**
1R5 = **923-6309** 6R8 = **923-6341** 33R = **507-830** 100R = **923-9952** 680R = **507-910**
2R2 = **923-6317** 10R = **507-805** 33R = **923-9928** 150R = **923-9960** 680R = **924-0004**

● Compliant
◄ Non-compliant
‡ Limited stock - RoHS replacement available

RoHS

C = CYAN M = Magenta Y = Yellow B = Black/SING

1K = **924-0012**	4K7 = **507-969**	22K = **924-0098**	100K = **508-044**	330K = **924-0160**
1K5 = **507-933**	4K7 = **924-0055**	33K = **508-019**	100K = **924-0136**	470K = **508-081**
1K5 = **924-0020**	6K8 = **507-970**	33K = **924-0101**	150K = **508-056**	470K = **924-0179**
2K2 = **507-945**	6K8 = **924-0063**	47K = **508-020**	150K = **924-0144**	680K = **508-093**
2K2 = **924-0039**	10K = **924-0071**	47K = **924-0110**	220K = **508-068**	680K = **924-0187**
3K3 = **507-957**	15K = **924-0080**	68K = **508-032**	220K = **924-0152**	1M = **508-100**
3K3 = **924-0047**	22K = **508-007**	68K = **924-0128**	330K = **508-070**	1M = **924-0195**

	Price Each MIXED QUANTITY PRICING			
Order Code	10+	100+	1K+	4K+
All Values	0.93	0.54	0.46	0.33

±1% Tolerance

Stocked in the following OHMIC values:

NEW 1R = **923-9669**	NEW 10R = **923-9707**	NEW 220R = **923-9740**	NEW 4K7 = **923-9782**
NEW 1R2 = **923-9677**	NEW 22R = **923-9715**	NEW 470R = **923-9758**	NEW 10K = **923-9790**
NEW 4R7 = **923-9685**	NEW 47R = **923-9723**	NEW 1K = **923-9766**	NEW 22K = **923-9804**
NEW 8R2 = **923-9693**	NEW 100R = **923-9731**	NEW 2K2 = **923-9774**	

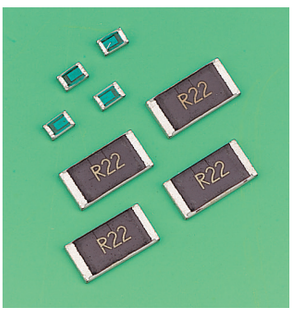
207214

	Price Each MIXED QUANTITY PRICING			
Order Code	10+	100+	1K+	3K+
All Values ●	1.01	0.56	0.46	0.34

RL73 Series

tyco/Electronics CTEC

Current Sense Resistors



- Complete range from 0R1 to 1R
- Supplied on tape - part marked
- Nickel barrier layer
- Restockable 2512 Laboratory Kit

SMD

Case Size	Power rating @ 70°C	Resistance Tolerance	Power rating @ 70°C
0402	0.1W	5%	200ppm/°C
0603	0.1W	5%	200ppm/°C
0805	0.125W	5%	200ppm/°C
CRL 1220(0805)	0.1W	2%	200ppm/°C
1206	0.25W	5%	200ppm/°C
2512	1W	5%	200ppm/°C

Stocked in the following OHMIC values:

0402 Case Size

0R15 = **886-7267** 0R22 = **886-7283** 0R33 = **886-7305** 0R47 = **886-7321** 0R68 = **886-7348**
0R18 = **886-7275** 0R27 = **886-7291** 0R39 = **886-7313** 0R56 = **886-7330** 0R82 = **886-7356**

0603 Case Size

0R1 = **886-7364** 0R18 = **886-7399** 0R33 = **886-7429** 0R47 = **886-7445** 0R68 = **886-7461**
0R12 = **886-7372** 0R22 = **886-7402** 0R39 = **886-7437** 0R56 = **886-7453** 0R82 = **886-7470**
0R15 = **886-7380** 0R27 = **886-7410**

0805 Case Size

0R1 = **886-7488** 0R18 = **886-7518** 0R33 = **886-7542** 0R47 = **886-7569** 0R68 = **886-7585**
0R12 = **886-7496** 0R22 = **886-7526** 0R39 = **886-7550** 0R56 = **886-7577** 0R82 = **886-7593**
0R15 = **886-7500** 0R27 = **886-7534**

1206 Case Size

0R1 = **886-7607** 0R18 = **886-7631** 0R33 = **886-7666** 0R47 = **886-7682** 0R68 = **886-7704**
0R12 = **886-7615** 0R22 = **886-7640** 0R39 = **886-7674** 0R56 = **886-7690** 0R82 = **886-7712**
0R15 = **886-7623** 0R27 = **886-7658**

2512 Case Size

0R1 = **117-4007** 0R18 = **117-4012** 0R33 = **117-4015** 0R56 = **117-4018** 0R1 = **886-7720**
0R12 = **117-4008** 0R22 = **117-4013** 0R39 = **117-4016** 0R68 = **117-4019** 10R = **886-7739**
0R15 = **117-4011** 0R27 = **117-4014** 0R47 = **117-4017** 0R82 = **117-4020**

CRL1220 Case Size

0R82 = **117-3992** 1R5 = **117-3995** 2R7 = **117-3998** 3R9 = **117-4000** 6R8 = **117-4005**
1R = **117-3993** 1R8 = **117-3997** 3R3 = **117-3999** 4R7 = **117-4002** 8R2 = **117-4006**
1R2 = **117-3994**

2512 Laboratory Kit

Strong binder containing 20 pieces each of all 2512 values above. Easily restockable.

207334

	Order Code	Price Each 25+	100+	500+	1K+
0402 Case Size	**All Values** ●	0.98	0.81	0.48	0.24
0603 Case Size	**All Values** ●	0.85	0.72	0.44	0.23
0805 Case Size	**All Values** ●	0.98	0.81	0.48	0.24
1206 Case Size	**All Values** ●	1.17	0.91	0.68	0.52
CRL1220 Case Size	**All Values** ●	0.94	0.79	0.46	0.23
2512 Case Size	**All Values** ●	1.09	0.85	0.72	0.66
			1+		
2512 Laboratory Kit	**117-4021** ●		225.00		

HRC21/11 Series - High Ohmic Value

Phycomp A YAGEO COMPANY

0.063 Watt (0603 Case Size) & 0.125 Watt (0805 Case Size)

- High ohmic value thick film chip resistors
- 0603 and 0805 case sizes
- 0603 and 0.125 Watt power dissipation
- Applications include power supplies, test equipment, computers, telecommunication equipment

SMD

	0603 Case Size (HRC21 Series)	0805 Case Size (HRC21 Series)
Power rating	0.063W	0.125W
Resistance tolerance	±5%	±5%
Temperature coefficient	±300 x 10^{-6}/K	±300 x 10^{-6}/K
Operating voltage	50V max d.c. or a.c. rms	150V max d.c. or a.c. rms
Operating temperature	-55°C to +125°C	-55°C to +125°C

Stocked in the following OHMIC values:

0603 Case Size (HRC21 Series)

12M = **923-6368** 15M = **923-6376** 22M = **923-6384**

0805 Case Size (HRC11 Series)

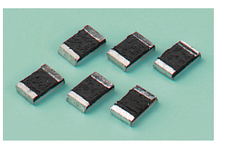
12M = **923-6406**	22M = **923-6430**	39M = **923-6465**	68M = **923-6490**
15M = **923-6414**	27M = **923-6449**	47M = **923-6473**	82M = **923-6503**
18M = **923-6422**	33M = **923-6457**	56M = **923-6481**	100M = **923-6511**

213422

Case case Size	Order Code	Price Each 5+	25+	100+	500+	+
0603 (HRC21 Series)	**All Values** ●	0.32	0.27	0.24	0.21	– –
0805 (HRC11 Series)	**All Values** ●	0.32	0.27	0.24	0.21	– –

RH73 Series – High Ohmic Value

tyco/Electronics CGS



- 0805 case size high ohmic value thick film chip resistors
- Values from 2M2 to 50 Gig ohm
- Galvanic coated three layer terminal to ensure reliability
- Suitable for flow and reflow soldering

SMD

Supplied on tape (reel=1K pcs)

Power rating @ 70°C 0.125W Temperature range -55°C to +125°C
Max. working voltage 100V Case Size 0805

Resistance	Temp. Coefficient	Tolerance	Mfts. List No.	Order Code
2.2MR	±250ppm/°C	±5%	RH73U2A2M2JTD	117-4056
4.7MR	±250ppm/°C	±5%	RH73U2A4M7JTD	117-4059
6.8MR	±250ppm/°C	±5%	RH73U2A6M8JTD	117-4061
10MR	±250ppm/°C	±5%	RH73U2A10MJTD	117-4062
15MR	±100ppm/°C	±10%	RH73H2A15MKTN	117-4518
20MR	±100ppm/°C	±10%	RH73H2A20MKTN	117-4519
30MR	±100ppm/°C	±10%	RH73H2A30MKTN	117-4520
40MR	±100ppm/°C	±10%	RH73H2A40MKTN	117-4521
50MR	±100ppm/°C	±10%	RH73H2A50MKTN	117-4522
100MR	±100ppm/°C	±10%	RH73H2A100MKTN	117-4523
500MR	±500ppm/°C	±30%	RH73W2A500MNTN	117-4524
1GR	±500ppm/°C	±30%	RH73W2A1GNTN	117-4525
5GR	±500ppm/°C	±30%	RH73W2A5GNTN	117-4527
10GR	±1000ppm/°C	±30%	RH73X2A10GNTN	117-4528
20GR	±1000ppm/°C	±30%	RH73X2A20GNTN	117-4529
50GR	±1000ppm/°C	±30%	RH73X2A50GNTN	117-4530

207270

Order Multiple=25	Order Code	Price Each 25+	+	+	+	+
2M2	SMD **117-4056** ●	0.02	– –	– –	– –	– –
4M7	SMD **117-4059** ●	0.02	– –	– –	– –	– –
6M8	SMD **117-4061** ●	0.02	– –	– –	– –	– –
10M	SMD **117-4062** ●	0.02	– –	– –	– –	– –
		1+	25+	100+	500+	+
15M	SMD **117-4518** ●	1.58	1.39	1.26	0.82	– –
20M	SMD **117-4519** ●	1.58	1.39	1.26	0.82	– –
30M	SMD **117-4520** ●	1.46	1.30	1.17	0.98	– –
40M	SMD **117-4521** ●	1.58	1.39	1.26	0.82	– –
50M	SMD **117-4522** ●	1.84	1.61	1.45	0.82	– –
100M	SMD **117-4523** ●	1.58	1.39	1.26	0.82	– –
500M	SMD **117-4524** ●	3.60	3.15	2.84	1.86	– –
1G	SMD **117-4525** ●	3.60	3.15	2.84	1.86	– –
5G	SMD **117-4527** ●	3.60	3.15	2.84	1.86	– –
10G	SMD **117-4528** ●	3.60	3.15	2.84	1.86	– –
20G	SMD **117-4529** ●	3.60	3.15	2.84	1.86	– –
50G	SMD **117-4530** ●	3.60	3.15	2.84	1.86	– –

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

Low Ohmic Value

Low Ohmic

Phycomp

NEW

- Current Sensor –Low TCR

Power	Temperature Coefficient	Temperature Range	Tolerance	Voltage	Dimension (mm)
2W	100ppm/°C	155 to -55°C	±1%	250V	L = 6.4 W = 3.2 D = 0.75

411626

Value	Order Code	Price Each 10+	100+	1K+	100+	1K+
0.001R	940-3116●	1.73	1.56	1.37	1.24	– –
0.002R	940-3124●	1.73	1.56	1.37	1.24	– –
0.003R	940-3132●	1.73	1.56	1.37	1.24	– –
0.004R	940-3140●	1.73	1.56	1.37	1.24	– –
0.005R	940-3159●	1.73	1.56	1.37	1.24	– –
0.006R	940-3167●	1.73	1.56	1.37	1.24	– –
0.007R	940-3175●	1.73	1.56	1.37	1.24	– –
0.008R	940-3183●	1.73	1.56	1.37	1.24	– –
0.009R	940-3191●	1.73	1.56	1.37	1.24	– –
0.01R	940-3205●	1.73	1.56	1.37	1.24	– –
0.1R	940-3213●	1.73	1.56	1.37	1.24	– –
0.015R	940-3221●	1.73	1.56	1.37	1.24	– –
0.15R	940-3230●	1.73	1.56	1.37	1.24	– –
0.022R	940-3248●	1.73	1.56	1.37	1.24	– –
0.22R	940-3256●	1.73	1.56	1.37	1.24	– –
0.033R	940-3264●	1.73	1.56	1.37	1.24	– –
0.33R	940-3272●	1.73	1.56	1.37	1.24	– –
0.047R	940-3280●	1.73	1.56	1.37	1.24	– –
0.47R	940-3299●	1.73	1.56	1.37	1.24	– –
0.068R	940-3310●	1.73	1.56	1.37	1.56	1.37
0.68R	940-3329●	1.73	1.56	1.37	1.24	– –

LR Series - Low Ohmic Value

0.5 Watt (1206 Case Size), 1 Watt (2010 Case Size) & 2 Watt (2512 Case Size)

TT electronics Welwyn

- Resistance values from 0R005 to 0R5
- 2010 and 2512 case sizes
- Nickel barrier layer
- Excellent thermal characteristics
- For low current sensing applications

SMD

	1206 Case Size (LR1206)	2010 Case Size (LR2010)	2512 Case Size (LR2512)
Power rating @ 70°C	0.5W	1.0W	1.5W / 2W
Resistance tolerance	±1 ≤0R005 ±5%	±1 ≤0R005 ±5%	±1 ≤0R005 ±5%
Temperature coefficient	±100ppm/°C	±100ppm/°C	±200ppm/°C
Case dimensions	L. 3.2, W. 1.63, H. 0.8	L. 5.23, W. 2.64, H. 0.8	L. 6.5, W. 3.25, H. 0.8

Stocked in the following OHMIC values:

2010 Case Size

0R003 = **110-0341** 0R02 = **110-0046** 0R05 = **110-0050** 0R33 = **110-0055**
0R005 = **110-0043** 0R025 = **110-0047** 0R07 = **110-0052** 0R5 = **110-0056**
0R01 = **110-0044** 0R033 = **110-0048** 0R1 = **110-0053** 1R = **110-0342**
0R015 = **110-0045** 0R04 = **110-0049** 0R2 = **110-0054**

1206 Case Size

0R003 = **109-9903** 0R02 = **109-9909** 0R05 = **109-9913** 0R33 = **110-0338**
0R005 = **109-9906** 0R025 = **109-9910** 0R07 = **110-0335** 0R5 = **110-0339**
0R01 = **109-9907** 0R033 = **109-9911** 0R1 = **109-9914** 1R = **110-0340**
0R015 = **109-9908** 0R04 = **109-9912** 0R2 = **110-0337**

2512 Case Size

0R003 = **110-0343** 0R02 = **110-0060** 0R05 = **110-0065** 0R33 = **110-0069**
0R005 = **110-0057** 0R025 = **110-0061** 0R07 = **110-0066** 0R5 = **110-0070**
0R01 = **110-0058** 0R033 = **110-0062** 0R1 = **110-0067** 1R = **110-0344**
0R015 = **110-0059** 0R04 = **110-0064** 0R2 = **110-0068**

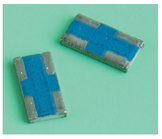
234804

Order Code	Price Each 5+	50+	100+	500+	+
Values 0R003 to 0R05 ●	1.11	0.94	0.78	0.65	– –
Values 0R07 to 0R2 ●	0.85	0.72	0.59	0.48	– –
Values 0R33 to 1R ●	1.04	0.88	0.72	0.59	– –
Values 0R003 to 0R05 ●	1.37	1.14	0.94	0.78	– –
Values 0R07 to 0R2 ●	1.93	1.54	1.29	0.94	– –
Values 0R33 to 1R ●	1.73	1.42	1.17	0.88	– –
Values 0R003 to 0R05 ●	1.46	1.24	1.01	0.85	– –
Values 0R07 to 0R2 ●	2.13	1.70	1.42	1.04	– –
Values 0R33 to 1R ●	2.00	1.61	1.35	1.01	– –

3 Watt LRF3W Series - Low Ohmic Value

2512 Case Size

TT electronics Welwyn



- High power rating - 3W
- Resistance values from 0R003 to 0R1
- Four terminal flip-chip 2512 case size
- Excellent thermal characteristics
- Nickel barrier layer
- For low current sensing applications

SMD

Power rating @ 70°C	3W	Temp. coefficient	±100ppm/°C
Resistance tolerance	±5%	Case dimensions	L. 6.35, W. 3.175, H. 0.813

Stocked in the following OHMIC values:

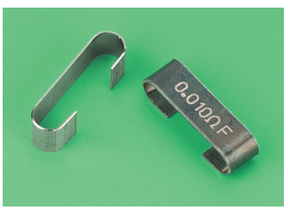
0R003 = **110-0071** 0R01 = **110-0074** 0R025 = **110-0346** 0R05 = **110-0078**
0R004 = **110-0072** 0R015 = **110-0345** 0R03 = **110-0077** 0R07 = **110-0349**
0R005 = **110-0073** 0R02 = **110-0076** 0R04 = **110-0347** 0R1 = **110-0079**

234805

Order Code	Price Each 1+	50+	100+	500+	+
All Values ●	2.72	2.27	2.08	1.61	– –

OARS Series - Surface Mount

TT electronics Welwyn



L=11.18 H=3.05 T=2.36 D=4.83 W=3.175

- Surface mount current sensing resistors
- Open air design for cooler operation
- Close tolerance low inductance
- For use in current sensing, feedback, surge and pulse applications

SMD

Power rating @85°C	≤0R015 1W ≥0R020 2W	Inductance	<10nH
Resistance tolerance	±1%	Temperature coefficient	±20ppm/°C

Stocked in the following OHMIC Values:

0R003 = **120-0347** 0R015 = **120-0350** 0R025 = **120-0352** 0R04 = **120-0354**
0R01 = **120-0349** 0R02 = **120-0351** 0R03 = **120-0353** 0R05 = **120-0356**

207370

Order Code	Price Each 1+	10+	50+	100+	+
All Values ●	3.66	2.99	2.49	1.86	– –

OAR Series

TT electronics Welwyn

- Through hole low ohmic current sensing resistors
- Open design for cooler running
- Close tolerance low inductance
- For use in current sensing, feedback, surge and pulse applications

Power rating @ 85°C	
Resistance tolerance	±1%
Inductance	<10nH
Temperature coefficient	±20ppm/°C

	H	W	Lead Pitch	Lead Dia.	Lead length
OAR-1	5.08	1.65	11.43	1.02	3.18
OAR-3	25.4	1.65	15.24	1.02	3.18
OAR-5	25.4	1.65	20.32	1.02	3.18

Stocked in the following OHMIC Values:

OAR - 1 Watt

0R005 = **120-0357** 0R02 = **120-0359** 0R03 = **120-0361** 0R04 = **120-0362** 0R05 = **120-0363**
0R01 = **120-0358** 0R025 = **120-0360**

OAR - 3 Watt

0R005 = **120-0364** 0R015 = **120-0366** 0R025 = **120-0369** 0R04 = **120-0371** 0R05 = **120-0372**
0R01 = **120-0365** 0R02 = **120-0368** 0R03 = **120-0370**

OAR - 5 Watt

0R005 = **120-0373** 0R01 = **120-0374** 0R015 = **120-0375** 0R02 = **120-0376** 0R025 = **120-0377**

RoHS ● Compliant ◀ Non-compliant ‡ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

207372

	Order Code	Price Each 1+	10+	50+	100+	+
OAR - 1 Watt	**All Values** ●	2.48	2.33	1.73	1.26	– –
OAR - 3 Watt	**All Values** ●	2.48	2.33	1.73	1.26	– –
OAR - 5 Watt	**All Values** ●	2.98	2.39	2.02	1.48	– –

4 Watt – SBL4 - Series Low Ohmic

tyco/Electronics CGS

L=20, W=6.4, D=6.4, Lead dia=0.8

Low ohmic value non-inductive resistors with low temperature coefficient in a fully insulated ceramic housing. Ideal for applications in power supply regulation, motor control, current monitoring, feedback control loops, overload sensors, radio frequency sampling and all current sensing applications.

Power rating @70°C	4W	Stability @ 70°C	1000 hours ≤±3%
derating to zero watts at 250°C		Measuring Length for R_N	40mm
Resistance Tolerance	±5%	Voltage Rating	√PR
Isolation resistance (max)	>1000MΩ	Operating temperature	-55°C to +250°C
Temperature Coefficient	100 to 600ppm/°C (dependent on value)		

Stocked in the following OHMIC values:

0R01 = **117-3906** 0R022 = **117-3908** 0R047 = **117-3910**
0R015 = **117-3907** 0R033 = **117-3909** 0R051 = **117-3912**

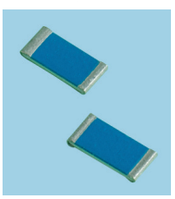
207418

Pulse Withstanding

PWC Series

0.75 Watt (2010 Case Size) & 1.5 Watt (2512 Case Size)

TT electronics Welwyn



- Thick film technology pulse withstanding chip resistors
- 2010 and 2512 case sizes
- Nickel barrier layer
- Applications include pulse protection in telecom and power supply circuits

SMD

	2010 Case Size (PWC2010)	2512 Case Size (PWC2512)
Power rating @ 70°C	0.75W	1.5W
Resistance tolerance	±5%	±5%
Temperature coefficient	±100ppm/°C	±100ppm/°C
Case dimensions	L. 5.1, W. 2.5, H. 0.8	L. 6.5, W. 3.2, H. 0.8

Stocked in the following OHMIC values:

2010 Case Size

10R = **110-0081**	150R = **110-0089**	1K5 = **110-0095**	15K = **110-0102**
15R = **110-0082**	220R = **110-0090**	2K2 = **110-0096**	22K = **110-0104**
22R = **110-0083**	330R = **110-0091**	3K3 = **110-0097**	33K = **110-0106**
33R = **110-0084**	470R = **110-0092**	4K7 = **110-0098**	47K = **110-0107**
47R = **110-0085**	680R = **110-0093**	6K8 = **110-0100**	68K = **110-0108**
68R = **110-0086**	1K = **110-0094**	10K = **110-0101**	100K = **110-0109**
100R = **110-0088**			

2512 Case Size

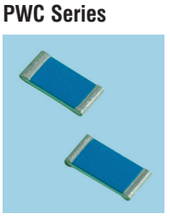
10R = **110-0110**	100R = **110-0116**	1K = **110-0123**	10K = **110-0131**
15R = **110-0111**	150R = **110-0118**	1K5 = **110-0124**	22K = **110-0132**
22R = **110-0112**	220R = **110-0119**	2K2 = **110-0125**	33K = **110-0133**
33R = **110-0113**	330R = **110-0120**	3K3 = **110-0126**	47K = **110-0134**
47R = **110-0114**	470R = **110-0121**	4K7 = **110-0127**	68K = **110-0135**
68R = **110-0115**	680R = **110-0122**	6K8 = **110-0128**	100K = **110-0136**

234807

Order Code	Price Each 5+	50+	100+	500+	+
All Values ●	1.41	1.35	1.13	0.94	– –
All Values ●	1.64	1.54	1.29	1.07	– –

PWC Series

TT electronics Welwyn



NEW

	0805 Case Size	1206 Case Size
Power rating @ 70°C	0.5W	2W
Resistance tolerance	±5	±5
Temperature coefficient	±100ppm/°C	±200ppm/°C
Case dimensions	L. 2, W. 1.25, H. 0.6 (mm)	L. 3, W. 1.6, H. 0.7 (mm)

Stocked in the following OHMIC values:

0805 Case Size

10R = **111-2212**	150R = **111-2219**	1K5 = **111-2226**	15K = **111-2232**
15R = **111-2213**	220R = **111-2220**	2K2 = **111-2227**	22K = **111-2233**
22R = **111-2214**	330R = **111-2221**	3K3 = **111-2228**	33K = **111-2234**
33R = **111-2215**	470R = **111-2222**	4K7 = **111-2229**	47K = **111-2236**
47R = **111-2216**	680R = **111-2224**	6K8 = **111-2230**	68K = **111-2237**
68R = **111-2217**	1K = **111-2225**	10K = **111-2231**	100K = **111-2238**
100R = **111-2218**			

1206 Case Size

10R = **111-2239**	33R = **111-2242**	100R = **111-2245**	330R = **111-2250**
15R = **111-2240**	47R = **111-2243**	150R = **111-2248**	470R = **111-2251**
22R = **111-2241**	68R = **111-2244**	220R = **111-2249**	680R = **111-2252**
1K = **111-2253**	4K7 = **111-2257**	15K = **111-2262**	47K = **111-2265**
1K5 = **111-2254**	6K8 = **111-2258**	22K = **111-2263**	68K = **111-2266**
2K2 = **111-2255**	10K = **111-2261**	33K = **111-2264**	100K = **111-2267**
3K3 = **111-2256**			

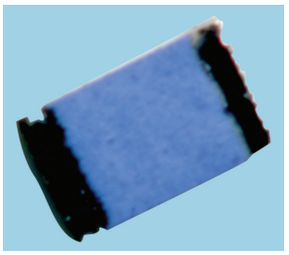
423390

Order Code	Price Each 5+	50+	100+	500+	+
0805 Case Size **All Values** ●	1.17	0.98	0.78	0.68	– –
1206 Case Size **All Values** ●	1.37	1.27	1.07	0.98	– –

Bulk Metal Foil Precision

VSMP Series – Foil Resistors

VISHAY



NEW

The VSMP Series utilizes ultra precision Bulk Metal® Z-Foil(BMZF). The new Z-Foil technology provides a significant reduction of the resistive element sensitivity to changes of temperature due to ambient temperature variations (TCR) and to self heating when power is applied (power coefficient).

Features:
- 300mW at +70°C
- Low Current Noise: – 40dB 'Noise free component'

Applications:
- Automatic Test Equipment
- Military and Space
- Communication

Power rating @ 70°C (0805)	200mW	Resistance tolerance	±0.25%
Power rating @ 70°C (1206)	300mW	Temperature coefficient max	±0.2ppm/°C

423447

Resistance	Order Code	Price Each 1+	25+	100+	250+	+
Case 0805						
10R	**110-9023**●	26.37	23.11	19.33	15.66	– –
100R	**110-9024**●	29.20	25.58	21.42	17.32	– –
250R	**110-9025**●	31.35	27.47	22.98	18.59	– –
350R	**110-9026**●	31.35	27.47	22.98	18.59	– –
500R	**110-9027**●	31.35	27.47	22.98	18.59	– –
1K	**110-9028**●	31.35	27.47	22.98	18.59	– –
2K	**110-9031**●	31.35	27.47	22.98	18.59	– –
2K5	**110-9033**●	31.35	27.47	22.98	18.59	– –
5K	**110-9034**●	31.35	27.47	22.98	18.59	– –
10K	**110-9035**●	31.35	27.47	22.98	18.59	– –
Case 1206						
10R	**110-9036**●	26.37	23.11	19.33	15.66	– –
100R	**110-9037**●	29.20	25.58	21.42	17.32	– –
250R	**110-9038**●	31.35	27.47	22.98	18.59	– –
350R	**110-9039**●	31.35	27.47	22.98	18.59	– –
500R	**110-9040**●	31.35	27.47	22.98	18.59	– –
1K	**110-9041**●	31.35	27.47	22.98	18.59	– –
2K	**110-9043**●	31.35	27.47	22.98	18.59	– –
2K5	**110-9044**●	31.35	27.47	22.98	18.59	– –
5K	**110-9045**●	31.35	27.47	22.98	18.59	– –
10K	**110-9046**●	31.35	27.47	22.98	18.59	– –
20K	**110-9047**●	36.23	31.77	26.56	21.48	– –
25K	**110-9048**●	36.23	31.77	26.56	21.48	– –

0.25 Watt ±0.01% - SMR1D Series Surface Mount

VISHAY

- Fully encapsulated precision resistor in surface mount package
- Bulk metal® foil technology
- High precision
- Low temperature coefficient

SMD

L = 6.0 ±0.3, W = 3.2 ±0.3, H = 2.5 ±0.3
P = 1.3 ±0.3, TW = 2.2 ±0.1, TH(min) 1.0

Power rating @ 70°C	0.25W
Resistance variation	±0.01%
Temperature coefficient	<0.6ppm/°C nom, 0°C to +60°C
Shelf life stability	±25PPM/yr
Load life stability	±50ppm/°Ctypical at full rated power for 2000hrs
Thermal e.m.f.	<0.1μV/°C max
Rise time	1ns@ 1k
Working voltage	54V dc or ac peak

Stocked in the following OHMIC Values:

100R = **118-7043**	500R = **120-3363**	2K = **120-3365**	5K = **120-3367**	20K = **120-3371**
350R = **120-3362**	1K = **120-3364**	2K5 = **120-3366**	10K = **120-3369**	25K = **120-3372**

207299

Order Code	Price Each 1+	5+	10+	25+	+
Values 100R to 2K5 ●	23.03	21.19	19.81	14.97	– –
Value 5K ●	22.18	20.41	19.07	14.42	– –
Values 10K to 25K ●	23.03	21.19	19.81	14.97	– –

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

0.6 Watt - ±0.01% - S102J Series

VISHAY

- Bulk metal® foil technology
- High precision
- Low temperature coefficient
- High performance instrumentation applications

H = 8.0, W = 7.49, D = 2.49,
Lead pitch = 5.08, Lead dia. = 0.6

Power rating @ 70°C	0.6W	Load life stability	±50ppm/°C typical at full rated power for 2000hrs
Resistance variation	±0.01%		
Temperature coefficient	<0.6ppm/°C nom, 0°C to +60°C	Thermal e.m.f.	<0.1μV/°C max
Shelf life stability	±25PPM/yr	Rise time	1ns@ 1k
		Working voltage	300V dc or ac peak

Stocked in the following OHMIC Values:

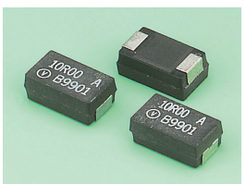
100R = **120-3343**	350R = **120-3348**	2K = **120-3351**	10K = **120-3354**	50K = **120-3358**
120R = **120-3346**	500R = **120-3349**	2K5 = **120-3352**	20K = **120-3355**	100K = **120-3359**
250R = **120-3347**	1K = **120-3350**	5K = **120-3353**	25K = **120-3357**	

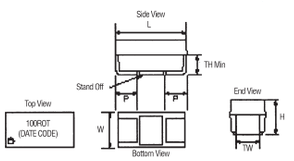
207305

Order Code	Price Each 1+	5+	10+	25+	+
Values 100R to 25K ●	32.14	29.64	28.00	20.10	– –
Value 25K ●	35.12	32.38	30.52	21.92	– –
Value 50K ●	45.86	42.34	39.94	28.63	– –
Value 100K ●	61.23	56.51	53.36	38.27	– –

0.6 Watt ±0.01% - SMR3D Series Surface Mount

VISHAY





L = 7.3 ±0.3, W = 4.3 ±0.3, H = 2.8 ±0.3
P = 1.3 ±0.3, TW = 2.4 ±0.1, TH(min) 1.0

- Fully encapsulated precision resistor in surface mount package
- Bulk metal® foil technology
- High precision
- Low temperature coefficient

SMD

Power rating @ 70°C	0.6W
Resistance variation	±0.01%
Temperature coefficient	<0.6ppm/°C nom, 0°C to +60°C
Shelf life stability	±25PPM/yr
Load life stability	±50ppm/°C typical at full rated power for 2000hrs
Thermal e.m.f.	<0.1V/°C max
Rise time	1ns@ 1k
Working voltage	300V dc or ac peak

Stocked in the following OHMIC Values:

100R = **120-3373**	1K = **120-3376**	5K = **120-3378**	20K = **120-3380**	100K = **120-3382**
500R = **120-3375**	2K5 = **120-3377**	10K = **120-3379**		

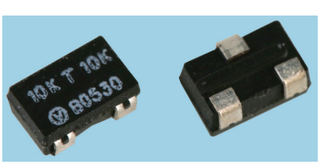
207301

Order Code	Price Each 1+	5+	10+	25+	+
Values 100R to 20K ●	30.04	27.72	26.14	18.74	– –
Values 100K ●	45.04	41.58	39.25	28.16	– –

DSM Series – Foil Resistors

NEW

VISHAY



The DSM surface mount divider provides a matched pair of Bulk Metal® Foil Resistors in a small epoxy molded package. The electrical specification of this integrated construction offers improved performance and better real estate utilization over discrete resistors and matched pairs.

Features:
- Low Current Noise: - 40dB
- Terminals: silver coated copper alloy

Applications:
- Instrumentation amplifiers
- Medical and test equipment
- Military

Power rating @ 70°C	0.05W	Operating temperature	-65°C to +150°C
Resistance tolerance	±0.05%	Temperature coefficient max	±2ppm/°C
Voltage rating	25V		

0R47 = **111-2068**	1R5 = **111-2071**	3R3 = **111-2073**	6R8 = **111-2075**
0R68 = **111-2069**	2R2 = **111-2072**	4R7 = **111-2074**	10R = **111-2076**
1R = **111-2070**			

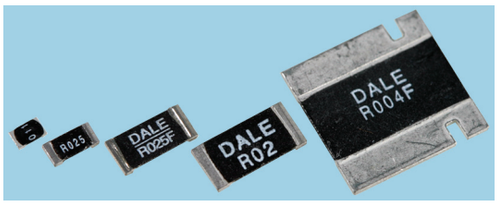
423441

Resistance Values	Order Code	Price Each 1+	25+	100+	250+	+
10K/10K	**110-9014** ●	48.14	42.22	35.32	28.58	– –
20K/20K	**110-9015** ●	48.14	42.22	35.32	28.58	– –
5K/5K	**110-9016** ●	48.14	42.22	35.32	28.58	– –
1K/1K	**110-9018** ●	48.14	42.22	35.32	28.58	– –
100R/100R	**110-9019** ●	48.14	42.22	35.32	28.58	– –
10K/5K	**110-9020** ●	48.14	42.22	35.32	28.58	– –
10K/1K	**110-9021** ●	51.46	45.11	37.73	30.53	– –
10K/100R	**110-9022** ●	55.07	48.27	40.39	32.68	– –

Power Metal Strip

WSL Series – Power Metal Strip

VISHAY



L=38.1, Dia=8.0 (0R47=8.9), Lead length=15 min, Lead dia=0.8

NEW

- Superior surge capability
- Molded encapsulation
- Solderable termination
- Excellent stability at different environmental conditions

Power rating @ 70°C	Case 0805	0.1W
	Case 1206	0.25W
	Case 2010	0.5W
	Case 2512	1W
	Case 3637	2W
Resistance tolerance		±1%
Operating temperature		-65°C to +170°C
Temperature coefficient max		±275ppm/°C

Stocked in the following OHMIC Values:

Case 0805

0R = **110-7329**	0R025 = **110-7334**	0R06 = **110-7338**	0R1 = **110-7342**
0R01 = **110-7330**	0R03 = **110-7335**	0R07 = **110-7339**	0R15 = **110-7344**
0R015 = **110-7332**	0R04 = **110-7336**	0R08 = **110-7340**	0R2 = **110-7345**
0R02 = **110-7333**	0R05 = **110-7337**	0R09 = **110-7341**	

Case 1206

0R = **110-7346**	0R02 = **110-7350**	0R06 = **110-7354**	0R1 = **110-7359**
0R002 = **110-7347**	0R03 = **110-7351**	0R07 = **110-7356**	0R15 = **110-7360**
0R01 = **110-7348**	0R04 = **110-7352**	0R08 = **110-7357**	0R2 = **110-7361**
0R015 = **110-7349**	0R05 = **110-7353**	0R09 = **110-7358**	

Case 2010

0R = **110-7362**	0R04 = **110-7370**	0R11 = **110-7377**	0R27 = **110-7386**
0R001 = **110-7363**	0R05 = **110-7371**	0R12 = **110-7378**	0R3 = **110-7387**
0R01 = **110-7364**	0R06 = **110-7372**	0R15 = **110-7381**	0R33 = **110-7388**
0R015 = **110-7365**	0R07 = **110-7373**	0R18 = **110-7382**	0R4 = **110-7389**
0R02 = **110-7366**	0R08 = **110-7374**	0R2 = **110-7383**	0R47 = **110-7390**
0R025 = **110-7368**	0R09 = **110-7375**	0R22 = **110-7384**	0R5 = **110-7391**
0R03 = **110-7369**	0R1 = **110-7376**	0R25 = **110-7385**	

Case 2512

0R = **110-7393**	0R03 = **110-7399**	0R09 = **110-7405**	0R3 = **110-7412**
0R001 = **110-7394**	0R04 = **110-7400**	0R1 = **110-7406**	0R33 = **110-7413**
0R01 = **110-7395**	0R05 = **110-7401**	0R15 = **110-7407**	0R4 = **110-7414**
0R015 = **110-7396**	0R06 = **110-7402**	0R2 = **110-7408**	0R47 = **110-7415**
0R02 = **110-7397**	0R07 = **110-7403**	0R25 = **110-7411**	0R5 = **110-7416**
0R025 = **110-7398**	0R08 = **110-7404**		

Case 3637

0R003 = **110-7417**	0R005 = **110-7419**	0R007 = **110-7421**	0R009 = **110-7424**
0R004 = **110-7418**	0R006 = **110-7420**	0R008 = **110-7423**	0R01 = **110-7425**

423684

Order Code	Price Each 5+	50+	250+	500+	+
Case 0805					
Values 0R to 0R06 ●	1.63	1.30	1.07	0.94	– –
Values 0R07 to 0R2 ●	1.30	1.04	0.88	0.75	– –
Case 1206					
Value 0R ●	1.79	1.43	1.20	1.01	– –
Value 0R001 ●	2.28	1.82	1.53	1.30	– –
Values 0R01 to 0R06 ●	1.79	1.43	1.20	1.01	– –
Values 0R7 to 0R5 ●	1.46	1.17	0.98	0.85	– –
Case 2010					
Value 0R ●	2.12	1.69	1.40	1.20	– –
Value 0R7 ●	2.28	1.82	1.53	1.30	– –
Values 0R01 to 0R06 ●	2.12	1.69	1.40	1.20	– –
Values 0R7 to 0R2 ●	1.79	1.43	1.20	1.01	– –
Case 2512					
All Values ●	1.79	1.43	1.20	1.01	– –
Case 3637					
All Values ●	2.12	1.69	1.40	1.20	– –

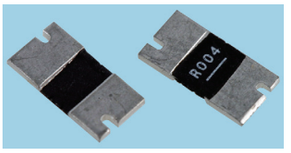
RoHS ● Compliant ▲ Non-compliant ‡ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

WSK Series – Power Metal Strip

NEW

VISHAY



- Ideal for all types of precision current sensing, voltage division and pulse applications including switching and linear power supplies, instruments, power amplifiers
- Proprietary processing technique produces extremely low resistance values

Case Size	2512	Operating temperature	-65°C to +170°C
Power rating @ 70°C	1W	Temperature coefficient max	±250ppm/°C
Resistance tolerance	±1%		

Stocked in the following OHMIC Values:

0R001 = **110-7426**	0R005 = **110-7428**	0R015 = **110-7430**	0R025 = **110-7432**
0R002 = **110-7427**	0R01 = **110-7429**	0R02 = **110-7431**	

423701

Order Code	Price Each 5+	50+	250+	500+	+
All Values ●	1.79	1.43	1.20	1.01	– –

WSC Series – Power Metal Strip

VISHAY

- Excellent stability at different environmental conditions
- Superior surge capability
- High power ratings
- Molded encapsulation

NEW

Resistance tolerance	±1%	Temperature coefficient max	500V
Operating temperature	-65°C to +175°C		

Stocked in the following OHMIC Values:

WSC01/02

Case Size	2012	Power Rating	0.5W
1R = **110-7492**	2R = **110-7493**	4R99 = **110-7494**	

WSC2515

Case Size	2515	Power Rating	1W
0R5 = **110-7505**	5R = **110-7504**	50R = **110-7503**	1K = **110-7498**
1R = **110-7499**	10R = **110-7497**	100R = **110-7496**	2K = **110-7500**
2R = **110-7502**			

WSC4527

Case Size	4527	Power Rating	2W
2R = **110-7511**	10R = **110-7507**	50R = **110-7512**	1K = **110-7508**
5R = **110-7514**	20R = **110-7509**	100R = **110-7506**	2K = **110-7510**

WSC6927

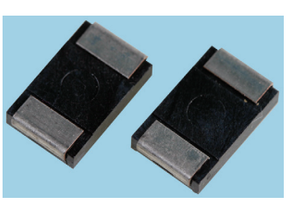
Case Size	6927	Power Rating	3W
1R = **110-7518**	10R = **110-7516**	100R = **110-7515**	1K = **110-7517**
0R5 = **110-7519**			

423706

Case 2012 Order Code	Price Each 5+	50+	250+	500+	+
All Values ●	4.56	3.65	3.03	2.60	– –
Case 2515					
Values 0R5, 50R & 100R ●	2.60	2.08	1.73	1.50	– –
Values 10R, 1R, 2R & 5R ●	1.79	1.43	1.20	1.01	– –
Values 1K & 2K ●	3.58	2.86	2.38	2.05	– –
Case 4527					
All Values ●	3.09	2.47	2.05	1.50	– –
Case 6927					
All Values ●	5.53	4.43	3.68	3.06	– –

WSR Series – Power Metal Strip

VISHAY



- Ideal for all types of current sensing, voltage division and pulse applications including switching and linear power supplies, instruments, power amplifiers
- Excellent frequency response
- Low thermal EMF

NEW

Case size		4527
Resistance tolerance		±1%
Operating temperature		-65°C to +275°C
Temperature coefficient	≤0.0099Ω	±110ppm/°C
	≥0.01Ω	±75ppm/°C

Stocked in the following OHMIC Values:

2W

0R = **110-7433**	0R03 = **110-7441**	0R09 = **110-7448**	0R33 = **110-7454**
0R001 = **110-7435**	0R04 = **110-7442**	0R1 = **110-7449**	0R4 = **110-7455**
0R01 = **110-7437**	0R05 = **110-7443**	0R15 = **110-7450**	0R5 = **110-7456**
0R015 = **110-7438**	0R06 = **110-7444**	0R2 = **110-7451**	0R75 = **110-7457**
0R02 = **110-7439**	0R07 = **110-7445**	0R25 = **110-7452**	1R = **110-7436**
0R025 = **110-7440**	0R08 = **110-7447**	0R3 = **110-7453**	

3W

0R001 = **110-7459**	0R02 = **110-7464**	0R05 = **110-7468**	0R1 = **110-7472**
0R002 = **110-7461**	0R025 = **110-7465**	0R07 = **110-7469**	0R15 = **110-7473**
0R01 = **110-7462**	0R03 = **110-7466**	0R09 = **110-7470**	0R2 = **110-7474**
0R015 = **110-7463**	0R04 = **110-7467**		

5W

0R0075 = **110-7475**	0R03 = **110-7479**	0R07 = **110-7484**	0R15 = **110-7488**
0R01 = **110-7476**	0R04 = **110-7480**	0R08 = **110-7485**	0R2 = **110-7489**
0R015 = **110-7477**	0R05 = **110-7481**	0R09 = **110-7486**	0R25 = **110-7490**
0R02 = **110-7478**	0R06 = **110-7482**	0R1 = **110-7487**	0R3 = **110-7491**

423703

2W Order Code	Price Each 5+	50+	250+	500+	+
Value 0R ●	1.95	1.56	1.30	1.11	– –
Value 0R001 ●	2.12	1.69	1.40	1.20	– –
Values 0R01 to 1R ●	1.95	1.56	1.30	1.11	– –
3W					
Value 0R001 to 0R002 ●	2.12	1.69	1.40	1.20	– –
Value 0R01 to 0R2 ●	1.95	1.56	1.30	1.11	– –
5W					
All Values ●	4.72	3.78	3.16	2.70	– –

MELF Resistors

MMU0102 Professional Series

BC COMPONENTS

- 0805 pad compatible
- Excellent long term stability
- High pulse load capability up to 14W to 1KV
- Very low current noise

SMD

L=2.2, Dia=1.1, (Reel=3K pcs)

Operating voltage	100V max d.c or a.c. rms	Tolerance	±1%
Power rating @ 70°C	0.2W	Temperature coefficient	50ppm/K
Operating temperature	125°C to +-55°C		

Stocked in the following OHMIC Values:

0R = **326-4920**	110R = **121-5906**	1K3 = **121-5935**	16K = **121-5964**	200K = **121-5994**
10R = **121-5878**	120R = **121-5907**	1K5 = **121-5936**	18K = **121-5965**	220K = **121-5995**
11R = **121-5879**	130R = **121-5908**	1K6 = **121-5937**	20K = **121-5967**	240K = **121-5996**
12R = **121-5880**	150R = **121-5909**	1K8 = **121-5938**	22K = **121-5968**	270K = **121-5997**
13R = **121-5881**	160R = **121-5910**	2K = **121-5939**	24K = **121-5969**	300K = **121-5998**
15R = **121-5882**	180R = **121-5911**	2K2 = **121-5940**	27K = **121-5970**	330K = **121-5999**
16R = **121-5883**	200R = **121-5912**	2K4 = **121-5941**	30K = **121-5971**	360K = **121-6000**
18R = **121-5884**	220R = **121-5913**	2K7 = **121-5943**	33K = **121-5972**	390K = **121-6002**
20R = **121-5885**	240R = **121-5914**	3K = **121-5944**	36K = **121-5973**	430K = **121-6003**
22R = **121-5886**	270R = **121-5915**	3K3 = **121-5945**	39K = **121-5974**	470K = **121-6005**
24R = **121-5888**	300R = **121-5916**	3K6 = **121-5946**	43K = **121-5975**	510K = **121-6006**
27R = **121-5889**	330R = **121-5918**	3K9 = **121-5947**	47K = **121-5976**	560K = **121-6007**
30R = **121-5890**	360R = **121-5919**	4K3 = **121-5948**	51K = **121-5977**	620K = **121-6008**
33R = **121-5891**	390R = **121-5920**	4K7 = **121-5949**	56K = **121-5979**	680K = **121-6009**
36R = **121-5892**	430R = **121-5921**	5K1 = **121-5951**	62K = **121-5981**	750K = **121-6010**
39R = **121-5893**	470R = **121-5922**	5K6 = **121-5952**	68K = **121-5982**	820K = **121-6011**
43R = **121-5894**	510R = **121-5923**	6K2 = **121-5953**	75K = **121-5983**	910K = **121-6012**
47R = **121-5895**	560R = **121-5924**	6K8 = **121-5955**	82K = **121-5984**	1M = **121-6013**
51R = **121-5896**	620R = **121-5925**	7K5 = **121-5956**	91K = **121-5985**	1M1 = **121-6014**
56R = **121-5897**	680R = **121-5926**	8K2 = **121-5957**	100K = **121-5986**	1M2 = **121-6015**
62R = **121-5898**	750R = **121-5927**	9K1 = **121-5958**	110K = **121-5987**	1M3 = **121-6017**
68R = **121-5900**	820R = **121-5928**	10K = **121-5959**	120K = **121-5988**	1M5 = **121-6018**
75R = **121-5901**	910R = **121-5931**	11K = **121-5960**	130K = **121-5989**	1M6 = **121-6019**
82R = **121-5902**	1K = **121-5932**	12K = **121-5961**	150K = **121-5990**	1M8 = **121-6020**
91R = **121-5903**	1K1 = **121-5933**	13K = **121-5962**	160K = **121-5992**	2M = **121-6021**
100R = **121-5904**	1K2 = **121-5934**	15K = **121-5963**	180K = **121-5993**	2M2 = **121-6022**

227192

Order Code	Price Each 25+	50+	100+	500+	+	+
Value 0R0	0.50	0.38	0.36	0.28	– –	– –
Values 10R to 43R ●	0.16	0.12	0.11	0.08	– –	– –
Values 47R to 300K ●	0.12	0.08	0.08	0.06	– –	– –
Values 330K to 2M2 ●	0.16	0.12	0.11	0.08	– –	– –

MMA0204 Professional Series

BC COMPONENTS

- 1206 pad layout compatible
- Excellent long term stability
- High pulse load capacity up to 28W or 2kV
- Very low current noise
- Applications include control, sensor, measurement and input circuits

SMD

L=3.6, Dia=1.4, (reel=3K pcs)

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

Power rating @ 70°C	0.25W	Temperature coefficient	± 50ppm/K
Operating voltage	200V max d.c or a.c. rms	Tolerance	±1%
Operating temperature	-55°C to +125°C		

Stocked in the following OHMIC Values:

0R = 308-7414	27R = 308-7591	680R = 308-7761	18K = 308-7931	470K = 308-8108
1R = 308-7426	33R = 308-7608	820R = 308-7773	22K = 308-7943	560K = 308-8110
1R2 = 308-7438	39R = 308-7610	1K = 308-7785	27K = 308-7955	680K = 308-8121
1R5 = 308-7440	47R = 308-7621	1K2 = 308-7797	33K = 308-7967	820K = 308-8133
1R8 = 308-7451	56R = 308-7633	1K5 = 308-7803	39K = 308-7979	1M = 308-8145
2R2 = 308-7463	68R = 308-7645	1K8 = 308-7815	47K = 308-7980	1M2 = 308-8157
2R7 = 308-7475	82R = 308-7657	2K2 = 308-7827	56K = 308-7992	1M5 = 308-8169
3R3 = 308-7487	100R = 308-7669	2K7 = 308-7839	68K = 308-8005	1M8 = 308-8170
3R9 = 308-7499	120R = 308-7670	3K3 = 308-7840	82K = 308-8017	2M2 = 308-8182
4R7 = 308-7505	150R = 308-7682	3K9 = 308-7852	100K = 308-8029	2M7 = 308-8194
5R6 = 308-7517	180R = 308-7694	4K7 = 308-7864	120K = 308-8030	3M3 = 308-8200
6R8 = 308-7529	220R = 308-7700	5K6 = 308-7876	150K = 308-8042	3M9 = 308-8212
8R2 = 308-7530	270R = 308-7712	6K8 = 308-7888	180K = 308-8054	4M7 = 308-8224
10R = 308-7542	330R = 308-7724	8K2 = 308-7890	220K = 308-8066	5M6 = 308-8236
12R = 308-7554	390R = 308-7736	10K = 308-7906	270K = 308-8078	6M8 = 308-8248
15R = 308-7566	470R = 308-7748	12K = 308-7918	330K = 308-8080	8M2 = 308-8250
18R = 308-7578	560R = 308-7750	15K = 308-7920	390K = 308-8091	10M = 308-8261
22R = 308-7580				

207336

Order Code	Price Each 25+	50+	100+	500+	+	+
Value 0R0	0.06	0.05	0.05	0.03	– –	– –
Values 1R to 82R	0.09	0.08	0.07	0.05	– –	– –
Values 100R to 2K2	0.08	0.06	0.06	0.04	– –	– –
Values 2K7 to 10M	0.06	0.05	0.05	0.03	– –	– –

MMA0204 Precision Series

- 1206 pad layout compatible
- Excellent long term stability
- Capability to dissipate 0.25W
- Very low current noise
- Applications include control, sensor and measurement circuits

L=3.6, Dia=1.4, (reel=3K pcs)

Power rating @ 70°C	0.07W(standard operation) 0.07W(precision operation)	Temperature coefficient	± 15ppm/K
		Tolerance	±0.1%
Operating voltage	200V max d.c or a.c. rms	Operating temperature	-55°C to +85°C
Stability	<0.05% after 1000 hrs @ 0.07W		

Stocked in the following OHMIC Values:

43R = 308-5612	240R = 308-5790	1K3 = 308-5971	7K5 = 308-6150	43K = 308-6331
47R = 308-5624	270R = 308-5806	1K5 = 308-5983	8K2 = 308-6161	47K = 308-6343
51R = 308-5636	300R = 308-5818	1K6 = 308-5995	9K1 = 308-6173	51K = 308-6355
56R = 308-5648	330R = 308-5820	1K8 = 308-6008	10K = 308-6185	56K = 308-6367
62R = 308-5650	360R = 308-5831	2K = 308-6010	11K = 308-6197	62K = 308-6379
68R = 308-5661	390R = 308-5843	2K2 = 308-6021	12K = 308-6203	68K = 308-6380
75R = 308-5673	430R = 308-5855	2K4 = 308-6033	13K = 308-6215	75K = 308-6392
82R = 308-5685	470R = 308-5867	2K7 = 308-6045	15K = 308-6227	82K = 308-6409
91R = 308-5697	510R = 308-5879	3K = 308-6057	16K = 308-6239	91K = 308-6410
100R = 308-5703	560R = 308-5880	3K3 = 308-6069	18K = 308-6240	100K = 308-6422
110R = 308-5715	620R = 308-5892	3K6 = 308-6070	20K = 308-6252	110K = 308-6434
120R = 308-5727	680R = 308-5909	3K9 = 308-6082	22K = 308-6264	120K = 308-6446
130R = 308-5739	750R = 308-5910	4K3 = 308-6094	24K = 308-6276	130K = 308-6458
150R = 308-5740	820R = 308-5922	4K7 = 308-6100	27K = 308-6288	150K = 308-6460
160R = 308-5752	910R = 308-5934	5K1 = 308-6112	30K = 308-6290	160K = 308-9551
180R = 308-5764	1K = 308-5946	5K6 = 308-6124	33K = 308-6306	180K = 308-9563
200R = 308-5776	1K1 = 308-5958	6K2 = 308-6136	36K = 308-6318	200K = 308-9575
220R = 308-5788	1K2 = 308-5960	6K8 = 308-6148	39K = 308-6320	220K = 308-9587

207337

Order Code	Price Each 5+	50+	100+	500+	+
All Values	0.99	0.78	0.75	0.50	– –

MMB0207 Professional Series

- Excellent long term stability
- High pulse load capability up to 70W or 3kV, very low current noise
- 1 Watt power dissipation capability with derating
- Applications include control systems and power input circuits

L=5.8, Dia=2.2 (reel=2Kpcs)

Power rating @ 70°C	0.4W (1W with derating)	Temperature coefficient	± 50ppm/K
Operating voltage	300V max d.c or a.c. rms	Tolerance	±1%
Stability	<0.25% after 1000 hrs @ 0.4W	Operating temperature	-55°C to +125°C

Stocked in the following OHMIC Values:

0R = 308-6471	2R2 = 308-6525	5R6 = 308-6574	15R = 308-6628	39R = 308-6677
1R = 308-6483	2R7 = 308-6537	6R8 = 308-6586	18R = 308-6630	47R = 308-6689
1R2 = 308-6495	3R3 = 308-6549	8R2 = 308-6598	22R = 308-6641	56R = 308-6690
1R5 = 308-6501	3R9 = 308-6550	10R = 308-6604	27R = 308-6653	68R = 308-6707
1R8 = 308-6513	4R7 = 308-6562	12R = 308-6616	33R = 308-6665	82R = 308-6719
100R = 308-6720	1K = 308-6847	10K = 308-6963	100K = 308-7086	1M = 308-7207
120R = 308-6732	1K2 = 308-6859	12K = 308-6975	120K = 308-7098	1M2 = 308-7219
150R = 308-6744	1K5 = 308-6860	15K = 308-6987	150K = 308-7104	1M5 = 308-7220
180R = 308-6756	1K8 = 308-6872	18K = 308-6999	180K = 308-7116	1M8 = 308-7232
220R = 308-6768	2K2 = 308-6884	22K = 308-7001	220K = 308-7128	2M2 = 308-7244
270R = 308-6770	2K7 = 308-6896	27K = 308-7013	270K = 308-7130	2M7 = 308-7256
330R = 308-6781	3K3 = 308-6902	33K = 308-7025	330K = 308-7141	3M3 = 308-7268
390R = 308-6793	3K9 = 308-6914	39K = 308-7037	390K = 308-7153	3M9 = 308-7270
470R = 308-6800	4K7 = 308-6926	47K = 308-7049	470K = 308-7165	4M7 = 308-7281
560R = 308-6811	5K6 = 308-6938	56K = 308-7050	560K = 308-7177	5M6 = 308-7293
680R = 308-6823	6K8 = 308-6940	68K = 308-7062	680K = 308-7189	6M8 = 308-7300
820R = 308-6835	8K2 = 308-6951	82K = 308-7074	820K = 308-7190	8M2 = 308-7311

207335

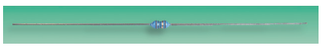
Order Code	Price Each 10+	50+	100+	500+	+	+
Value 0R0	0.20	0.16	0.15	0.10	– –	– –
Values 1R to 82R	0.30	0.23	0.22	0.14	– –	– –
Values 100R to 2K2	0.25	0.20	0.19	0.13	– –	– –
Values 2K7 to 8M2	0.20	0.16	0.15	0.10	– –	– –

Metal Film

Very high stability metal film resistors offering higher performance than carbon film with very low noise levels and high reliability.

213415

0.125 Watt ±1% – MF12 Series



L=4.2, Dia.=2.0 Lead length=28.0, Lead dia.=0.5

Supplied bandoliered on tape (box=5K pcs.)

Power rating @ 70°C	0.125W	Operating temperature	-55°C to +155°C
Voltage rating	200V	Temperature coefficient	±50ppm/°C
Maximum overload voltage	400V		

Stocked in the following OHMIC Values:

1R = 306-0445	62R = 513-738	680R = 513-982	10K = 514-263	100K = 514-500
1R5 = 306-0457	68R = 513-740	750R = 513-994	11K = 514-275	110K = 514-512
2R2 = 306-0469	75R = 513-751	820R = 514-007	12K = 514-287	120K = 514-524
3R3 = 306-0470	82R = 513-763	910R = 514-019	13K = 514-299	130K = 514-536
4R7 = 306-0482	91R = 513-775	1K = 514-020	15K = 514-305	150K = 514-548
6R8 = 306-0494	100R = 513-787	1K1 = 514-032	16K = 514-317	160K = 514-550
10R = 513-544	110R = 513-799	1K2 = 514-044	18K = 514-329	180K = 514-561
11R = 513-556	120R = 513-805	1K3 = 514-056	20K = 514-330	200K = 514-573
12R = 513-568	130R = 513-817	1K5 = 514-068	22K = 514-342	220K = 514-585
13R = 513-570	150R = 513-829	1K6 = 514-070	24K = 514-354	240K = 514-597
15R = 513-581	160R = 513-830	1K8 = 514-081	27K = 514-366	270K = 514-603
16R = 513-593	180R = 513-842	2K = 514-093	30K = 514-378	300K = 514-615
18R = 513-600	200R = 513-854	2K2 = 514-100	33K = 514-380	330K = 514-627
20R = 513-611	220R = 513-866	2K4 = 514-111	36K = 514-391	360K = 514-639
22R = 513-623	240R = 513-878	2K7 = 514-123	39K = 514-408	390K = 514-640
24R = 513-635	270R = 513-880	3K = 514-135	43K = 514-410	430K = 514-652
27R = 513-647	300R = 513-891	3K3 = 514-147	47K = 514-421	470K = 514-664
30R = 513-659	330R = 513-908	3K6 = 514-159	51K = 514-433	510K = 514-676
33R = 513-660	360R = 513-910	3K9 = 514-160	56K = 514-445	560K = 514-688
36R = 513-672	390R = 513-921	4K7 = 514-184	62K = 514-457	620K = 514-690
39R = 513-684	430R = 513-933	5K1 = 514-196	68K = 514-469	680K = 514-706
43R = 513-696	470R = 513-945	5K6 = 514-202	75K = 514-470	750K = 514-718
47R = 513-702	510R = 513-957	6K2 = 514-214	82K = 514-482	820K = 514-720
51R = 513-714	560R = 513-969	8K2 = 514-240	91K = 514-494	910K = 514-731
56R = 513-726	620R = 513-970	9K1 = 514-251		

207208

Order Code	Price Each MIXED QUANTITY PRICING 10+	500+	1K+	5K+
All Values ▲ ‡	0.04	0.03	0.03	0.02

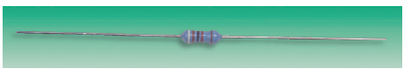
1R 934-2451	68R 934-3490	820R 934-3563	9K1 934-3628	100K 934-2427
1R5 934-2664	75R 934-3555	910R 934-3610	10K 934-2419	110K 934-2494
2R2 934-2877	82R 934-3601	1K 934-2400	11K 934-2486	120K 934-2540
3R3 934-3083	91R 934-3652	1K1 934-2478	12K 934-2532	130K 934-2591
4R7 934-3296	100R 934-2397	1K2 934-2524	13K 934-2583	150K 934-2648
6R8 934-3504	110R 934-2460	1K3 934-2575	15K 934-2630	160K 934-2702
10R 934-2443	120R 934-2516	1K5 934-2621	16K 934-2699	180K 934-2753
11R 934-2508	130R 934-2567	1K6 934-2680	18K 934-2745	200K 934-2800
12R 934-2559	150R 934-2613	1K8 934-2737	20K 934-2796	220K 934-2850
13R 934-2605	160R 934-2672	2K 934-2788	22K 934-2842	240K 934-2915
15R 934-2656	180R 934-2729	2K2 934-2834	24K 934-2907	270K 934-2966
16R 934-2710	200R 934-2770	2K4 934-2893	27K 934-2958	300K 934-3016
18R 934-2761	220R 934-2826	2K7 934-2940	30K 934-3008	330K 934-3067
20R 934-2818	240R 934-2885	3K 934-2990	33K 934-3059	360K 934-3121
22R 934-2869	270R 934-2931	3K3 934-3040	36K 934-3113	390K 934-3172
24R 934-2923	300R 934-2982	3K6 934-3105	39K 934-3164	430K 934-3229
27R 934-2974	330R 934-3032	3K9 934-3156	43K 934-3210	470K 934-3270
30R 934-3024	360R 934-3091	4K3 934-3202	47K 934-3261	510K 934-3334
33R 934-3075	390R 934-3148	4K7 934-3253	51K 934-3326	560K 934-3385
36R 934-3130	430R 934-3199	5K1 934-3318	56K 934-3377	620K 934-3431
39R 934-3180	470R 934-3245	5K6 934-3369	62K 934-3423	680K 934-3482
43R 934-3237	510R 934-3300	6K2 934-3415	68K 934-3474	750K 934-3547
47R 934-3288	560R 934-3350	6K8 934-3466	75K 934-3539	820K 934-3598
51R 934-3342	620R 934-3407	7K5 934-3520	82K 934-3580	910K 934-3644
56R 934-3393	680R 934-3458	8K2 934-3571	91K 934-3636	1M 934-2435
62R 934-3440	750R 934-3512			

Order Code	Price Each MIXED QUANTITY PRICING 10+	500+	1K+	5K+
All Values ●	0.04	0.03	0.03	0.02

RoHS ● Compliant ▲ Non-compliant ‡ Limited stock - RoHS replacement available

0.25 Watt ±1% – MF25 Series

multicomp



L=6.8 Dia=2.5 Lead length=28.0 Lead dia=0.6 Supplied bandoliered on tape (box=5K pcs)

Power rating @ 70°C	0.25W	Maximum overload voltage	500V
Temperature coefficient	±50ppm/°C	Operating temperature	-55°C to +155°C
Voltage rating	250V		

Stocked in the following OHMIC Values:

1R =	306-0500	62R =	543-093	680R =	543-342	8K2 =	543-603	110K =	543-871
1R5 =	306-0512	68R =	543-100	750R =	543-354	9K1 =	543-615	120K =	543-883
2R2 =	306-0524	75R =	543-111	820R =	543-366	10K =	543-627	130K =	543-895
3R3 =	306-0536	82R =	543-123	910R =	543-378	11K =	543-639	150K =	543-901
4R7 =	306-0548	91R =	543-135	1K =	543-380	12K =	543-640	160K =	543-913
6R8 =	306-0550	100R =	543-147	1K1 =	543-391	13K =	543-652	180K =	543-925
10R =	542-908	110R =	543-159	1K2 =	543-408	15K =	543-664	200K =	543-937
11R =	542-910	120R =	543-160	1K3 =	543-410	16K =	543-676	220K =	543-949
12R =	542-921	130R =	543-172	1K5 =	543-421	18K =	543-688	240K =	543-950
13R =	542-933	150R =	543-184	1K6 =	543-433	20K =	543-690	270K =	543-962
15R =	542-945	160R =	543-196	1K8 =	543-445	22K =	543-706	300K =	543-974
16R =	542-957	180R =	543-202	2K =	543-457	24K =	543-718	330K =	543-986
18R =	542-969	200R =	543-214	2K2 =	543-469	27K =	543-720	360K =	543-998
20R =	542-970	220R =	543-226	2K4 =	543-470	30K =	543-731	390K =	544-000
22R =	542-982	240R =	543-238	2K7 =	543-482	33K =	543-743	430K =	544-012
24R =	542-994	270R =	543-240	3K =	543-494	36K =	543-755	470K =	544-024
27R =	543-007	300R =	543-251	3K3 =	543-500	39K =	543-767	510K =	544-036
30R =	543-019	330R =	543-263	3K9 =	543-524	43K =	543-779	560K =	544-048
33R =	543-020	360R =	543-275	4K3 =	543-536	56K =	543-809	620K =	544-050
36R =	543-032	390R =	543-287	4K7 =	543-548	62K =	543-810	680K =	544-061
39R =	543-044	430R =	543-299	5K1 =	543-550	68K =	543-822	750K =	544-073
43R =	543-056	470R =	543-305	5K6 =	543-561	75K =	543-834	820K =	544-085
47R =	543-068	510R =	543-317	6K2 =	543-573	82K =	543-846	910K =	544-097
51R =	543-070	560R =	543-329	6K8 =	543-585	91K =	543-858	1M =	544-103
56R =	543-081	620R =	543-330	7K5 =	543-597	100K =	543-860		

207220

	Price Each			
	MIXED QUANTITY PRICING			
Order Code	50+	500+	1K+	5K+
All Values ▲ ‡	0.04	0.03	0.03	0.02

1R =	934-1153	68R =	934-2192	820R =	934-2265	9K1 =	934-2320	100K =	934-1129
1R5 =	934-1366	75R =	934-2257	910R =	934-2311	10K =	934-1110	110K =	934-1196
2R2 =	934-1579	82R =	934-2303	1K =	934-1102	11K =	934-1188	120K =	934-1242
3R3 =	934-1781	91R =	934-2354	1K1 =	934-1170	12K =	934-1234	130K =	934-1293
4R7 =	934-1994	100R =	934-1099	1K2 =	934-1226	13K =	934-1285	150K =	934-1340
6R8 =	934-2206	110R =	934-1161	1K3 =	934-1277	15K =	934-1331	160K =	934-1404
10R =	934-1145	120R =	934-1218	1K5 =	934-1323	16K =	934-1390	180K =	934-1455
11R =	934-1200	130R =	934-1269	1K6 =	934-1382	18K =	934-1447	200K =	934-1501
12R =	934-1250	150R =	934-1315	1K8 =	934-1439	20K =	934-1498	220K =	934-1552
13R =	934-1307	160R =	934-1374	2K =	934-1480	22K =	934-1544	240K =	934-1617
15R =	934-1358	180R =	934-1420	2K2 =	934-1536	24K =	934-1609	270K =	934-1668
16R =	934-1412	200R =	934-1471	2K4 =	934-1595	27K =	934-1650	300K =	934-1714
18R =	934-1463	220R =	934-1528	2K7 =	934-1641	30K =	934-1706	330K =	934-1765
20R =	934-1510	240R =	934-1587	3K =	934-1692	33K =	934-1757	360K =	934-1820
22R =	934-1560	270R =	934-1633	3K3 =	934-1749	36K =	934-1811	390K =	934-1870
24R =	934-1625	300R =	934-1684	3K6 =	934-1803	39K =	934-1862	430K =	934-1927
27R =	934-1676	330R =	934-1730	3K9 =	934-1854	43K =	934-1919	470K =	934-1978
30R =	934-1722	360R =	934-1790	4K3 =	934-1900	47K =	934-1960	510K =	934-2036
33R =	934-1773	390R =	934-1846	4K7 =	934-1951	51K =	934-2028	560K =	934-2087
36R =	934-1838	430R =	934-1897	5K1 =	934-2010	56K =	934-2079	620K =	934-2133
39R =	934-1889	470R =	934-1943	5K6 =	934-2060	62K =	934-2125	680K =	934-2184
43R =	934-1935	510R =	934-2001	6K2 =	934-2117	68K =	934-2176	750K =	934-2249
47R =	934-1986	560R =	934-2052	6K8 =	934-2168	75K =	934-2230	820K =	934-2290
51R =	934-2044	620R =	934-2109	7K5 =	934-2222	82K =	934-2281	910K =	934-2346
56R =	934-2095	680R =	934-2150	8K2 =	934-2273	91K =	934-2338	1M =	934-1137
62R =	934-2141	750R =	934-2214						

	Price Each			
	MIXED QUANTITY PRICING			
Order Code	50+	500+	1K+	5K+
All Values ●	0.04	0.03	0.03	0.02

0.4 Watt ±1% – MRS16 Series

Phoenix

L=3.7 max, Dia=1.9 max Lead length=26 nom, Lead dia=0.5

Supplied bandoliered on tape (box=1K pcs)

Power rating @ 70°C	0.4W	Voltage rating	200V
Temperature coefficient	≤50ppm/°C	Operating temperature	-55°C to +155°C

Stocked in the following OHMIC Values:

10R =	331-818	39R =	946-3674	150R =	946-3380	560R =	332-021	1K8 =	946-3488
10R =	946-3321	47R =	331-892	180R =	331-960	560R =	946-3755	2K2 =	332-094
12R =	331-820	56R =	331-909	180R =	946-3429	680R =	332-033	2K2 =	946-3585
12R =	946-3364	56R =	946-3771	220R =	331-971	680R =	946-3801	2K7 =	332-100
15R =	331-831	68R =	331-910	220R =	946-3518	820R =	332-045	2K7 =	946-3593
15R =	946-3402	68R =	946-3828	270R =	331-983	820R =	946-3852	3K3 =	332-112
18R =	331-843	82R =	331-922	270R =	946-3550	1K =	332-057	3K3 =	946-3682
18R =	946-3445	82R =	946-3879	330R =	331-995	1K =	946-3453	3K9 =	332-124
22R =	946-3534	100R =	331-934	330R =	946-3615	1K2 =	332-069	3K9 =	946-3690
27R =	331-867	100R =	946-3305	390R =	332-008	1K2 =	946-3461	4K7 =	332-136
27R =	946-3577	120R =	331-946	390R =	946-3658	1K5 =	332-070	4K7 =	946-3739
33R =	331-879	120R =	946-3348	470R =	332-010	1K5 =	946-3470	5K6 =	332-148
33R =	946-3631	150R =	331-958	470R =	946-3712	1K8 =	332-082	5K6 =	946-3780
6K8 =	332-150	18K =	946-3437	56K =	332-264	150K =	946-3372	470K =	332-379
6K8 =	946-3836	22K =	332-215	56K =	946-3763	180K =	332-320	470K =	946-3704
8K2 =	332-161	22K =	946-3526	68K =	332-276	180K =	946-3410	560K =	332-380
8K2 =	946-3887	27K =	332-227	68K =	946-3810	220K =	332-331	560K =	946-3747
10K =	332-173	27K =	946-3569	82K =	332-288	220K =	946-3500	680K =	332-392
10K =	946-3313	33K =	332-239	82K =	946-3860	270K =	332-343	680K =	946-3798
12K =	332-185	33K =	946-3623	100K =	332-290	270K =	946-3542	820K =	332-409
12K =	946-3356	39K =	332-240	100K =	946-3291	330K =	332-355	820K =	946-3844
15K =	332-197	39K =	946-3666	120K =	332-306	330K =	946-3607	1M =	332-410
15K =	946-3399	47K =	332-252	120K =	946-3330	390K =	332-367	1M =	946-3496
18K =	332-203	47K =	946-3720	150K =	332-318	390K =	946-3640		

207407

	Price Each				
	MIXED QUANTITY PRICE				
Order Code	10+	300+	3K+	10K+	+
All Values ▲ ‡	0.23	0.17	0.11	0.07	– –

10R =	946-3321	120R =	946-3348	1K2 =	946-3461	12K =	946-3356	120K =	946-3330
12R =	946-3364	150R =	946-3380	1K5 =	946-3470	15K =	946-3399	150K =	946-3372
15R =	946-3402	180R =	946-3429	1K8 =	946-3488	18K =	946-3437	180K =	946-3410
18R =	946-3445	220R =	946-3518	2K2 =	946-3585	22K =	946-3526	220K =	946-3500
22R =	946-3534	270R =	946-3550	2K7 =	946-3593	27K =	946-3569	270K =	946-3542
27R =	946-3577	330R =	946-3615	3K3 =	946-3682	33K =	946-3623	330K =	946-3607
33R =	946-3631	390R =	946-3658	3K9 =	946-3690	39K =	946-3666	390K =	946-3640
39R =	946-3674	470R =	946-3712	4K7 =	946-3739	47K =	946-3720	470K =	946-3704
56R =	946-3771	560R =	946-3755	5K6 =	946-3780	56K =	946-3763	560K =	946-3747
68R =	946-3828	680R =	946-3801	6K8 =	946-3836	68K =	946-3810	680K =	946-3798
82R =	946-3879	820R =	946-3852	8K2 =	946-3887	82K =	946-3860	820K =	946-3844
100R =	946-3305	1K =	946-3453	10K =	946-3313	100K =	946-3291	1M =	946-3496

	Price Each				
	MIXED QUANTITY PRICE				
Order Code	10+	300+	3K+	10K+	+
All Values ●	0.24	0.18	0.12	0.07	– –

0.4 Watt ±5% – SFR25 Series

Phoenix

L=7.0 max, Dia=2.5 max Lead length=26 nom, Lead dia=0.6

Supplied bandoliered on tape (box=1K pcs)

Power rating @ 70°C	0.4W	Operating temperature	-55°C to +155°C
Voltage rating	250V	Temperature coefficient	±250ppm/°C

Stocked in the following OHMIC Values:

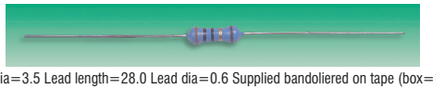
1R =	947-6539	27R =	947-6644	680R =	947-7012	18K =	947-6431	470K =	947-6865
1R2 =	947-6547	33R =	947-6750	820R =	947-7080	22K =	947-6598	560K =	947-6938
1R5 =	947-6555	39R =	947-6792	1K =	947-6458	27K =	947-6636	680K =	947-7004
1R8 =	947-6563	47R =	947-6890	1K2 =	947-6466	33K =	947-6741	820K =	947-7071
2R2 =	947-6709	56R =	947-6962	1K5 =	947-6474	39K =	947-6784	1M =	947-6490
2R7 =	947-6717	68R =	947-7039	1K8 =	947-6482	47K =	947-6881	1M2 =	947-6504
3R3 =	947-6849	82R =	947-7101	2K2 =	947-6652	56K =	947-6954	1M5 =	947-6512
3R9 =	947-6857	100R =	947-6296	2K7 =	947-6660	68K =	947-7020	1M8 =	947-6520
4R7 =	947-6920	120R =	947-6342	3K3 =	947-6806	82K =	947-7098	2M2 =	947-6687
5R6 =	947-6997	150R =	947-6385	3K9 =	947-6814	100K =	947-6288	2M7 =	947-6695
6R8 =	947-7063	180R =	947-6423	4K7 =	947-6903	120K =	947-6334	3M3 =	947-6822
8R2 =	947-7136	220R =	947-6580	5K6 =	947-6970	150K =	947-6377	3M9 =	947-6830
10R =	947-6326	270R =	947-6628	6K8 =	947-7047	180K =	947-6415	4M7 =	947-6911
12R =	947-6369	330R =	947-6733	8K2 =	947-7110	220K =	947-6571	5M6 =	947-6989
15R =	947-6407	390R =	947-6776	10K =	947-6300	270K =	947-6610	6M8 =	947-7055
18R =	947-6440	470R =	947-6873	12K =	947-6350	330K =	947-6725	8M2 =	947-7128
22R =	947-6601	560R =	947-6946	15K =	947-6393	390K =	947-6768	10M =	947-6318

207405

	Price Each				
	MIXED QUANTITY PRICING				
Order Code	50+	300+	3K+	10K+	+
All Values ●	0.08	0.05	0.05	0.02	– –

0.5 Watt ±1% – MF50 Series

multicomp



L=10.0 Dia=3.5 Lead length=28.0 Lead dia=0.6 Supplied bandoliered on tape (box=1K PCS)

Power rating @ 70°C	0.5W	Operating temperature	-55°C to +155°C
Voltage rating	350V	Temperature coefficient	±50ppm/°C
Maximum overload voltage	700V		

Stocked in the following OHMIC Values:

100R =	933-9760	1K3 =	933-9949	180K =	934-0122	270R =	934-0300	36K =	934-0483
1K =	933-9779	13K =	933-9957	18R =	934-0130	2K7 =	934-0319	360K =	934-0491
10K =	933-9787	130K =	933-9965	200R =	934-0149	27K =	934-0327	36R =	934-0505
100K =	933-9795	13R =	933-9973	2K =	934-0157	270K =	934-0335	390R =	934-0513
1M =	933-9809	150R =	933-9981	20K =	934-0165	27R =	934-0343	3K9 =	934-0521
10R =	933-9817	1K5 =	933-9990	200K =	934-0173	300R =	934-0351	39K =	934-0530
1R =	933-9825	15K =	934-0009	20R =	934-0181	3K =	934-0360	390K =	934-0548
110R =	933-9833	150K =	934-0017	220R =	934-0190	30K =	934-0378	39R =	934-0556
1K1 =	933-9841	15R =	934-0025	2K2 =	934-0203	300K =	934-0386	430R =	934-0564
11K =	933-9850	1R5 =	934-0033	22K =	934-0211	30R =	934-0394	4K3 =	934-0572
110K =	933-9868	160R =	934-0041	220K =	934-0220	330R =	934-0408	43K =	934-0580
11R =	933-9876	1K6 =	934-0050	22R =	934-0238	3K3 =	934-0416	430K =	934-0599
120R =	933-9884	16K =	934-0068	2R2 =	934-0246	33K =	934-0424	43R =	934-0602
1K2 =	933-9892	160K =	934-0076	240R =	934-0254	330K =	934-0432	470R =	934-0610
12K =	933-9906	16R =	934-0084	2K4 =	934-0262	33R =	934-0440	4K7 =	934-0629
120K =	933-9914	180R =	934-0092	24K =	934-0270	3R3 =	934-0459	47K =	934-0637
12R =	933-9922	1K8 =	934-0106	240K =	934-0289	360R =	934-0467	470K =	934-0645
130R =	933-9930	18K =	934-0114	24R =	934-0297	3K6 =	934-0475	47R =	934-0653

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products,
prices are subject to change without notice.

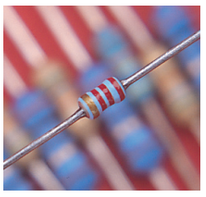
4R7 =	934-0661	56K =	934-0742	680R =	934-0823	7K5 =	934-0890	820K =	934-0963
510R =	934-0670	560K =	934-0750	6K8 =	934-0831	75K =	934-0904	82R =	934-0971
5K1 =	934-0688	56R =	934-0769	68K =	934-0840	750K =	934-0912	910R =	934-0980
51K =	934-0696	620R =	934-0777	680K =	934-0858	75R =	934-0920	9K1 =	934-0998
510K =	934-0700	6K2 =	934-0785	68R =	934-0866	820R =	934-0939	91K =	934-1005
51R =	934-0718	62K =	934-0793	6R8 =	934-0874	8K2 =	934-0947	910K =	934-1013
560R =	934-0726	620K =	934-0807	750R =	934-0882	82K =	934-0955	91R =	934-1021
5K6 =	934-0734	62R =	934-0815						

207219

	Price Each MIXED QUANTITY PRICING			
Order Code	50+	500+	1K+	5K+
All Values ●	0.04	0.03	0.03	0.02

Metal Film ±1% Resistor Kits

multicomp



- 0.125, 0.25 and 0.5 watt metal film resistor kits
- E6, E12 and E24 series of values
- 100 pieces of each preferred value from 10R to 1M

E6 Series 10, 15, 22, 33, 47, 68 (100 each of 31 values)
E12 Series 10, 12, 15, 18, 22, 27, 33, 39, 47, 56, 68, 82 (100 each of 61 values)
E24 Series 10, 11, 12, 13, 15, 16, 18, 20, 22, 24, 27, 30, 33, 39, 43, 47, 51, 56, 62, 68, 75, 82, 91 (100 each of 121 values)

207254

		Price Each		
0.125 Watt	Order Code	1+	3+	6+
E6 Kit	934-3660●	307.89	273.12	231.75
E12 Kit	934-3679●	567.87	505.41	461.13
E24 Kit	934-3687●	1,126.56	1,050.45	1,004.88
0.25 Watt				
E6 Kit	934-2362●	168.09	142.14	124.86
E12 Kit	934-2370●	256.44	226.83	202.41
E24 Kit	934-2389●	516.57	456.93	407.82
0.5 Watt				
E6 Kit	934-1030●	172.74	156.63	141.93
E12 Kit	934-1048●	280.23	255.36	234.51
E24 Kit	934-1056●	563.82	513.78	471.81

0.5 Watt ±1% – MFR4 Series

TT electronics Welwyn

L = 7 max. Dia = 2.3 max. Lead length = 23 nom., Lead dia. = 0.6

Supplied bandoliered on tape.

Fully approved to **BS9111 NO16** and available to **CECC 40101-019/FZ** and **CECC 40101-803/BC** release. Approved only in the range 10R to 1M.

Power rating @ 70°C	0.5W commercial 0.25W 100ppm release 0.125W 50ppm release	Voltage rating Operating temperature Temperature coefficient	250V -55°C to +155°C 50ppm/°C

Stocked in the following OHMIC Values:

1R =	109-9824	39R =	109-9856	510R =	109-9884	6K2 =	109-9983	82K =	110-0012
1R2 =	109-9825	43R =	109-9857	560R =	109-9885	6K8 =	109-9984	91K =	110-0013
1R5 =	109-9827	47R =	109-9858	600R =	109-9886	7K5 =	109-9985	100K =	110-0015
2R2 =	109-9828	51R =	109-9859	620R =	109-9888	8K2 =	109-9986	110K =	110-0016
2R7 =	109-9829	56R =	109-9860	680R =	109-9889	9K1 =	109-9987	120K =	110-0017
3R3 =	109-9830	62R =	109-9861	750R =	109-9890	10K =	109-9988	130K =	110-0018
3R9 =	109-9831	68R =	109-9862	820R =	109-9891	11K =	109-9989	150K =	110-0019
4R7 =	109-9832	75R =	109-9864	910R =	109-9892	12K =	109-9990	160K =	110-0020
5R6 =	109-9833	82R =	109-9865	1K =	109-9893	13K =	109-9992	180K =	110-0021
6R2 =	109-9834	91R =	109-9866	1K1 =	109-9894	15K =	109-9993	200K =	110-0022
6R8 =	109-9835	100R =	109-9867	1K2 =	109-9895	16K =	109-9994	220K =	110-0023
7R5 =	109-9836	110R =	109-9868	1K3 =	109-9896	18K =	109-9995	240K =	110-0024
8R2 =	109-9837	120R =	109-9869	1K5 =	109-9897	20K =	109-9996	270K =	110-0025
9R1 =	109-9839	130R =	109-9870	1K6 =	109-9898	22K =	109-9997	300K =	110-0027
10R =	109-9841	150R =	109-9871	1K8 =	109-9900	24K =	109-9998	330K =	110-0028
11R =	109-9842	160R =	109-9872	2K =	109-9901	27K =	109-9999	360K =	110-0029
12R =	109-9843	180R =	109-9873	2K2 =	109-9970	30K =	110-0000	390K =	110-0030
13R =	109-9844	200R =	109-9874	2K4 =	109-9971	33K =	110-0001	430K =	110-0031
15R =	109-9845	220R =	110-0334	2K7 =	109-9972	36K =	110-0003	470K =	110-0032
16R =	109-9846	240R =	109-9876	3K =	109-9973	39K =	110-0004	510K =	110-0033
18R =	109-9847	270R =	109-9877	3K3 =	109-9974	43K =	110-0005	560K =	110-0034
20R =	109-9848	300R =	109-9878	3K6 =	109-9975	47K =	110-0006	620K =	110-0035
22R =	109-9849	330R =	109-9879	3K9 =	109-9976	51K =	110-0007	680K =	110-0036
24R =	109-9850	360R =	109-9880	4K3 =	109-9977	56K =	110-0008	750K =	110-0037
27R =	109-9852	390R =	109-9881	4K7 =	109-9979	62K =	110-0009	820K =	110-0039
30R =	109-9853	430R =	109-9882	5K1 =	109-9981	68K =	110-0010	910K =	110-0041
33R =	109-9854	470R =	109-9883	5K6 =	109-9982	75K =	110-0011	1M =	110-0042
36R =	109-9855								

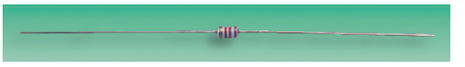
These products are available to full documented release, upon request.

207406

	Price Each MIXED QUANTITY PRICING			
Order Code	50+	500+	1K+	2K+
All Values ●	0.15	0.09	0.07	0.05

0.5 Watt ±5% – SFR16S Series

Phoenix



L=3.4 max, Dia.=1.7 max
Lead length=26nom, Lead dia.=0.5

Supplied bandoliered on tape (box=5K pcs)

Power rating @ 70°C	0.5W	Temperature coefficient	1R to 100K ±100ppm/°C
Voltage rating	200V		120K to 1M ±250ppm/°C
Operating temperature	-55°C to +155°C		

Stocked in the following OHMIC Values:

1R =	947-5770	18R =	947-5702	330R =	947-5931	5K6 =	947-6148	82K =	947-6245
1R2 =	947-5761	22R =	947-5834	390R =	947-5974	6K8 =	947-6202	100K =	947-5559
1R5 =	947-5788	27R =	947-5877	470R =	947-6059	8K2 =	947-6261	120K =	947-5591
1R8 =	947-5796	33R =	947-5958	560R =	947-6113	10K =	947-5575	150K =	947-5630
2R2 =	947-5907	39R =	947-5990	680R =	947-6172	12K =	947-5613	180K =	947-5672
2R7 =	947-5915	47R =	947-6075	820R =	947-6237	15K =	947-5656	220K =	947-5800
3R3 =	947-6024	56R =	947-6130	1K =	947-5729	18K =	947-5699	270K =	947-5842
3R9 =	947-6032	68R =	947-6199	1K2 =	947-5710	22K =	947-5826	330K =	947-5923
4R7 =	947-6091	82R =	947-6253	1K5 =	947-5737	27K =	947-5869	390K =	947-5966
5R6 =	947-6156	100R =	947-5567	1K8 =	947-5745	33K =	947-5940	470K =	947-6040
6R8 =	947-6210	120R =	947-5605	2K2 =	947-5885	39K =	947-5982	560K =	947-6105
8R2 =	947-6270	150R =	947-5648	2K7 =	947-5893	47K =	947-6067	680K =	947-6164
10R =	947-5583	180R =	947-5680	3K3 =	947-6008	56K =	947-6121	820K =	947-6229
12R =	947-5621	220R =	947-5818	3K9 =	947-6016	68K =	947-6180	1M =	947-5753
15R =	947-5664	270R =	947-5850	4K7 =	947-6083				

207211

	Price Each MIXED QUANTITY PRICING				
Order Code	10+	300+	3K+	10K+	+
All Values ●	0.18	0.13	0.08	0.05	– –

0.6 Watt ±1% – MRS25 Series

Phoenix

L=7 max, Dia=2.5 max Lead length=26 nom, Lead dia=0.6

Supplied bandoliered on tape (box=1K pcs)

Power rating @ 70°C	0.6W	Voltage rating	350V
Temperature coefficient	± 50ppm/°C	Operating temperature	-55°C to +155°C

Stocked in the following OHMIC Values:

1R =	946-5561	3R48 =	946-8056	16R9 =	946-4891	53R6 =	946-8978	180R =	946-4980
1R02 =	946-5570	3R57 =	946-8064	17R4 =	946-4964	54R9 =	946-9010	182R =	946-5006
1R05 =	946-5588	3R6 =	946-8072	18R =	946-5065	56R =	946-9087	187R =	946-5022
1R07 =	946-5596	3R65 =	946-8080	18R2 =	946-5073	56R2 =	946-9095	191R =	946-5103
1R1 =	946-5600	3R74 =	946-8099	18R7 =	946-5081	57R6 =	946-9133	196R =	946-5120
1R13 =	946-5618	3R83 =	946-8102	19R1 =	946-5154	59R =	946-9176	200R =	946-5880
1R15 =	946-5626	3R9 =	946-8110	19R6 =	946-5162	60R4 =	946-9419	205R =	946-5901
1R2 =	946-5634	3R92 =	946-8129	20R =	946-5936	61R9 =	946-9451	210R =	946-5960
1R21 =	946-5642	4R12 =	946-8757	20R5 =	946-5944	62R =	946-9494	215R =	946-5987
1R24 =	946-5650	4R22 =	946-8765	21R =	946-6010	63R4 =	946-9532	220R =	946-6045
1R27 =	946-5669	4R3 =	946-8773	21R5 =	946-6029	64R9 =	946-9575	221R =	946-6061
1R3 =	946-5677	4R32 =	946-8781	22R =	946-6126	66R5 =	946-9613	226R =	946-6088
1R33 =	946-5685	4R42 =	946-8790	22R1 =	946-6134	68R =	946-9680	232R =	946-6169
1R37 =	946-5693	4R7 =	946-8803	22R6 =	946-6142	68R1 =	946-9699	237R =	946-6185
1R4 =	946-5707	4R87 =	946-8811	23R2 =	946-6215	69R8 =	946-9737	240R =	946-6240
1R43 =	946-5715	5R1 =	946-9290	23R7 =	946-6223	71R5 =	946-9923	243R =	946-6266
1R47 =	946-5723	5R11 =	946-9303	24R =	946-6320	73R2 =	946-9966	249R =	946-6282
1R5 =	946-5731	5R36 =	946-9311	24R3 =	946-6339	75R =	947-0000	255R =	946-6363
1R54 =	946-5740	5R6 =	946-9320	24R9 =	946-6347	76R8 =	947-0042	261R =	946-6401
1R58 =	946-5758	5R62 =	946-9338	25R5 =	946-6380	78R7 =	947-0085	267R =	946-6428
1R6 =	946-5766	5R9 =	946-9346	26R1 =	946-6452	80R6 =	947-0220	270R =	946-6487
1R62 =	946-5774	6R19 =	946-9850	26R7 =	946-6460	82R =	947-0298	274R =	946-6509
1R65 =	946-5782	6R2 =	946-9869	27R =	946-6533	82R5 =	947-0301	280R =	946-6568
1R69 =	946-5790	6R49 =	946-9877	27R4 =	946-6541	84R5 =	947-0344	287R =	946-6584
1R74 =	946-5804	6R8 =	946-9885	28R =	946-6614	86R6 =	947-0387	294R =	946-6649
1R78 =	946-5812	7R15 =	947-0158	28R7 =	946-6622	88R7 =	947-0425	300R =	946-7122
1R8 =	946-5820	7R5 =	947-0166	29R4 =	946-6665	90R9 =	947-0565	301R =	946-7149
1R82 =	946-5839	7R87 =	947-0182	30R =	946-7203	91R =	947-0603	309R =	946-7165
1R87 =	946-5847	8R2 =	947-0506	30R1 =	946-7211	93R1 =	947-0646	316R =	946-7246
1R91 =	946-5855	8R25 =	947-0514	30R9 =	946-7220	95R3 =	947-0697	324R =	946-7289
1R96 =	946-5863	8R66 =	947-0522	31R6 =	946-7262	97R6 =	947-0735	330R =	946-7327
2R =	946-6916	9R09 =	947-0808	32R4 =	946-7300	100R =	946-3909	332R =	946-7343
2R05 =	946-6924	9R1 =	947-0816	33R =	946-7378	102R =	946-3925	340R =	946-7408
2R1 =	946-6932	9R53 =	947-0824	33R2 =	946-7386	105R =	946-3941	348R =	946-7424
2R15 =	946-6940	10R =	946-4026	34R =	946-7459	107R =	946-3968	357R =	946-7483
2R2 =	946-6959	10R2 =	946-4034	34R8 =	946-7467	110R =	946-4077	360R =	946-7521
2R21 =	946-6967	10R5 =	946-4042	35R7 =	946-7505	113R =	946-4093	365R =	946-7548
2R26 =	946-6975	10R7 =	946-4050	36R =	946-7572	115R =	946-4115	374R =	946-7602
2R32 =	946-6983	11R =	946-4182	36R5 =	946-7580	118R =	946-4131	383R =	946-7645
2R37 =	946-6991	11R3 =	946-4190	37R4 =	946-7629	120R =	946-4239	390R =	946-7688
2R4 =	946-7009	11R5 =	946-4204	38R3 =	946-7661	121R =	946-4255	392R =	946-7700
2R43 =	946-7017	11R8 =	946-4212	39R =	946-7734	124R =	946-4271	402R =	946-8145
2R49 =	946-7025	12R =	946-4344	39R2 =	946-7742	127R =	946-4298	412R =	946-8188
2R55 =	946-7033	12R1 =	946-4352	40R2 =	946-8161	130R =	946-4395	422R =	946-8226
2R61 =	946-7041	12R4 =	946-4360	41R2 =	946-8200	133R =	946-4417	430R =	946-8269
2R67 =	946-7050	12R7 =	946-4379	42R2 =	946-8242	137R =	946-4433	432R =	946-8285
2R7 =	946-7068	13R =	946-4476	43R =	946-8315	140R =	946-4514	442R =	946-8340
2R74 =	946-7076	13R3 =	946-4484	43R2 =	946-8323	143R =	946-4530	453R =	946-8382
2R8 =	946-7084	13R7 =	946-4492	44R2 =	946-8366	147R =	946-4557	464R =	946-8420
2R87 =	946-7092	14R =	946-4590	45R3 =	946-8404	150R =	946-4638	470R =	946-8463
2R94 =	946-7106	14R3 =	946-4603	46R4 =	946-8447	154R =	946-4654	475R =	946-8480
3R =	946-7980	14R7 =	946-4611	47R =	946-8510	158R =	946-4670	487R =	946-8544
3R01 =	946-7998	15R =	946-4719	47R5 =	946-8528	160R =	946-4751	499R =	946-8587
3R09 =	946-8005	15R4 =	946-4727	48R7 =	946-8560	162R =	946-4778	510R =	946-8838
3R16 =	946-8013	15R8 =	946-4735	49R9 =	946-8609	165R =	946-4794	511R =	946-8854
3R3 =	946-8021	16R =	946-4867	51R =	946-8889	169R =	946-4816	523R =	946-8919
3R32 =	946-8030	16R2 =	946-4875	51R1 =	946-8897	174R =	946-4913	536R =	946-8951
3R4 =	946-8048	16R5 =	946-4883	52R3 =	946-8935	178R =	946-4930	549R =	946-8994

RoHS ● Compliant ◄ Non-compliant ‡ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

Farnell Page 1154 Date: 21-08-06 time: 18:53

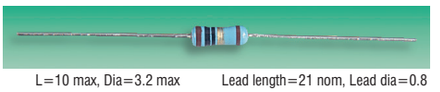
560R =	**946-9036**	2K87 =	**946-6851**	14K3 =	**946-4573**	68K =	**946-9664**	348K =	**946-7416**
562R =	**946-9052**	2K94 =	**946-6860**	14K7 =	**946-4581**	68K1 =	**946-9672**	357K =	**946-7475**
576R =	**946-9117**	3K =	**946-7750**	15K =	**946-4689**	69K8 =	**946-9729**	360K =	**946-7513**
590R =	**946-9150**	3K01 =	**946-7769**	15K4 =	**946-4697**	71K5 =	**946-9915**	365K =	**946-7530**
600R =	**946-9362**	3K09 =	**946-7777**	15K8 =	**946-4700**	73K2 =	**946-9958**	374K =	**946-7599**
604R =	**946-9397**	3K16 =	**946-7793**	16K =	**946-4824**	75K =	**946-9990**	383K =	**946-7637**
619R =	**946-9435**	3K24 =	**946-7807**	16K2 =	**946-4832**	76K8 =	**947-0034**	390K =	**946-7670**
620R =	**946-9478**	3K3 =	**946-7823**	16K5 =	**946-4840**	78K7 =	**947-0077**	392K =	**946-7696**
634R =	**946-9516**	3K32 =	**946-7831**	16K9 =	**946-4859**	80K6 =	**947-0212**	402K =	**946-8137**
649R =	**946-9559**	3K4 =	**946-7840**	17K4 =	**946-4948**	82K =	**947-0271**	412K =	**946-8170**
665R =	**946-9591**	3K48 =	**946-7858**	17K8 =	**946-4956**	82K5 =	**947-0280**	422K =	**946-8218**
680R =	**946-9630**	3K57 =	**946-7866**	18K =	**946-5030**	84K5 =	**947-0336**	430K =	**946-8250**
681R =	**946-9656**	3K6 =	**946-7874**	18K2 =	**946-5049**	86K6 =	**947-0379**	432K =	**946-8277**
698R =	**946-9710**	3K65 =	**946-7882**	18K7 =	**946-5057**	88K7 =	**947-0417**	442K =	**946-8331**
715R =	**946-9907**	3K74 =	**946-7890**	19K1 =	**946-5138**	90K9 =	**947-0557**	453K =	**946-8374**
732R =	**946-9940**	3K83 =	**946-7904**	19K6 =	**946-5146**	91K =	**947-0590**	464K =	**946-8412**
750R =	**946-9982**	3K9 =	**946-7912**	20K =	**946-5910**	93K1 =	**947-0638**	470K =	**946-8455**
768R =	**947-0026**	3K92 =	**946-7920**	20K5 =	**946-5928**	95K3 =	**947-0689**	475K =	**946-8471**
787R =	**947-0069**	4K02 =	**946-8617**	21K =	**946-5995**	97K6 =	**947-0727**	487K =	**946-8536**
806R =	**947-0204**	4K12 =	**946-8625**	21K5 =	**946-6002**	100K =	**946-3895**	499K =	**946-8579**
820R =	**947-0247**	4K22 =	**946-8633**	22K =	**946-6096**	102K =	**946-3917**	510K =	**946-8820**
825R =	**947-0263**	4K3 =	**946-8641**	22K1 =	**946-6100**	105K =	**946-3933**	511K =	**946-8846**
845R =	**947-0328**	4K32 =	**946-8650**	22K6 =	**946-6118**	107K =	**946-3950**	523K =	**946-8900**
866R =	**947-0360**	4K42 =	**946-8668**	23K2 =	**946-6193**	110K =	**946-4069**	536K =	**946-8943**
887R =	**947-0409**	4K53 =	**946-8676**	23K7 =	**946-6207**	113K =	**946-4085**	549K =	**946-8986**
909R =	**947-0549**	4K644 =	**946-8684**	24K =	**946-6290**	115K =	**946-4107**	560K =	**946-9028**
910R =	**947-0581**	4K7 =	**946-8692**	24K3 =	**946-6304**	118K =	**946-4123**	562K =	**946-9044**
931R =	**947-0620**	4K75 =	**946-8706**	24K9 =	**946-6312**	120K =	**946-4220**	576K =	**946-9109**
953R =	**947-0670**	4K87 =	**946-8714**	25K5 =	**946-6371**	121K =	**946-4247**	590K =	**946-9141**
976R =	**947-0719**	4K99 =	**946-8722**	26K1 =	**946-6436**	124K =	**946-4263**	604K =	**946-9389**
1K =	**946-5170**	5K1 =	**946-9184**	26K7 =	**946-6444**	127K =	**946-4280**	619K =	**946-9427**
1K02 =	**946-5189**	5K11 =	**946-9192**	27K =	**946-6517**	130K =	**946-4387**	620K =	**946-9460**
1K05 =	**946-5197**	5K23 =	**946-9206**	27K4 =	**946-6525**	133K =	**946-4409**	634K =	**946-9508**
1K07 =	**946-5200**	5K36 =	**946-9214**	28K =	**946-6592**	137K =	**946-4425**	649K =	**946-9540**
1K1 =	**946-5219**	5K49 =	**946-9222**	28K7 =	**946-6606**	140K =	**946-4506**	665K =	**946-9583**
1K13 =	**946-5227**	5K6 =	**946-9230**	29K4 =	**946-6657**	143K =	**946-4522**	680K =	**946-9621**
1K15 =	**946-5235**	5K62 =	**946-9249**	30K =	**946-7173**	147K =	**946-4549**	681K =	**946-9648**
1K18 =	**946-5243**	5K76 =	**946-9257**	30K1 =	**946-7181**	150K =	**946-4620**	698K =	**946-9702**
1K2 =	**946-5251**	5K9 =	**946-9265**	30K9 =	**946-7190**	154K =	**946-4646**	715K =	**946-9893**
1K21 =	**946-5260**	6K04 =	**946-9745**	31K6 =	**946-7254**	158K =	**946-4662**	732K =	**946-9931**
1K24 =	**946-5278**	6K19 =	**946-9753**	32K4 =	**946-7297**	160K =	**946-4743**	750K =	**946-9974**
1K27 =	**946-5286**	6K2 =	**946-9761**	33K =	**946-7351**	162K =	**946-4760**	768K =	**947-0018**
1K3 =	**946-5294**	6K34 =	**946-9770**	33K2 =	**946-7360**	165K =	**946-4786**	787K =	**947-0050**
1K33 =	**946-5308**	6K49 =	**946-9788**	34K =	**946-7432**	169K =	**946-4808**	806K =	**947-0190**
1K37 =	**946-5316**	6K65 =	**946-9796**	34K8 =	**946-7440**	174K =	**946-4905**	820K =	**947-0239**
1K4 =	**946-5324**	6K8 =	**946-9800**	35K7 =	**946-7491**	178K =	**946-4921**	825K =	**947-0255**
1K43 =	**946-5332**	6K81 =	**946-9818**	36K =	**946-7556**	180K =	**946-4972**	845K =	**947-0310**
1K47 =	**946-5340**	6K98 =	**946-9826**	36K5 =	**946-7564**	182K =	**946-4999**	866K =	**947-0352**
1K5 =	**946-5359**	7K15 =	**947-0093**	37K4 =	**946-7610**	187K =	**946-5014**	887K =	**947-0395**
1K54 =	**946-5367**	7K32 =	**947-0107**	38K3 =	**946-7653**	191K =	**946-5090**	909K =	**947-0530**
1K58 =	**946-5375**	7K5 =	**947-0115**	39K =	**946-7718**	196K =	**946-5111**	910K =	**947-0573**
1K6 =	**946-5383**	7K68 =	**947-0123**	39K2 =	**946-7726**	200K =	**946-5871**	931K =	**947-0611**
1K62 =	**946-5391**	7K87 =	**947-0131**	40K2 =	**946-8153**	205K =	**946-5898**	953K =	**947-0654**
1K65 =	**946-5405**	8K06 =	**947-0433**	41K2 =	**946-8196**	210K =	**946-5952**	976K =	**947-0700**
1K69 =	**946-5413**	8K2 =	**947-0441**	42K2 =	**946-8234**	215K =	**946-5979**	1M =	**946-5499**
1K74 =	**946-5421**	8K25 =	**947-0450**	43K =	**946-8293**	220K =	**946-6037**	1M1 =	**946-5502**
1K78 =	**946-5430**	8K45 =	**947-0468**	43K2 =	**946-8307**	221K =	**946-6053**	1M2 =	**946-5510**
1K8 =	**946-5448**	8K66 =	**947-0476**	44K2 =	**946-8358**	226K =	**946-6070**	1M3 =	**946-5529**
1K82 =	**946-5456**	8K87 =	**947-0484**	45K3 =	**946-8390**	232K =	**946-6150**	1M5 =	**946-5537**
1K87 =	**946-5464**	9K09 =	**947-0743**	46K4 =	**946-8439**	237K =	**946-6177**	1M6 =	**946-5545**
1K91 =	**946-5472**	9K1 =	**947-0751**	47K =	**946-8498**	240K =	**946-6231**	1M8 =	**946-5553**
1K96 =	**946-5480**	9K31 =	**947-0760**	47K5 =	**946-8501**	243K =	**946-6258**	2M =	**946-6878**
2K =	**946-6673**	9K53 =	**947-0778**	48K7 =	**946-8552**	249K =	**946-6274**	2M2 =	**946-6886**
2K05 =	**946-6681**	9K76 =	**947-0786**	49K9 =	**946-8595**	255K =	**946-6355**	2M4 =	**946-6894**
2K1 =	**946-6690**	10K =	**946-3976**	51K =	**946-8862**	261K =	**946-6398**	2M7 =	**946-6908**
2K15 =	**946-6703**	10K2 =	**946-3984**	51K1 =	**946-8870**	267K =	**946-6410**	3M =	**946-7939**
2K2 =	**946-6711**	10K5 =	**946-3992**	52K3 =	**946-8927**	270K =	**946-6479**	3M3 =	**946-7947**
2K21 =	**946-6720**	10K7 =	**946-4000**	53K6 =	**946-8960**	274K =	**946-6495**	3M6 =	**946-7955**
2K26 =	**946-6738**	11K =	**946-4140**	54K9 =	**946-9001**	280K =	**946-6550**	3M9 =	**946-7963**
2K32 =	**946-6746**	11K3 =	**946-4158**	56K =	**946-9060**	287K =	**946-6576**	4M3 =	**946-8730**
2K37 =	**946-6754**	11K5 =	**946-4166**	56K2 =	**946-9079**	294K =	**946-6630**	4M7 =	**946-8749**
2K4 =	**946-6762**	11K8 =	**946-4174**	57K6 =	**946-9125**	300K =	**946-7114**	5M1 =	**946-9273**
2K43 =	**946-6770**	12K =	**946-4301**	59K =	**946-9168**	301K =	**946-7130**	5M6 =	**946-9281**
2K49 =	**946-6789**	12K1 =	**946-4310**	60K4 =	**946-9400**	309K =	**946-7157**	6M2 =	**946-9834**
2K55 =	**946-6797**	12K4 =	**946-4328**	61K9 =	**946-9443**	316K =	**946-7238**	6M8 =	**946-9842**
2K61 =	**946-6800**	12K7 =	**946-4336**	62K =	**946-9486**	324K =	**946-7270**	7M5 =	**947-0140**
2K67 =	**946-6819**	13K =	**946-4441**	63K4 =	**946-9524**	330K =	**946-7319**	8M2 =	**947-0492**
2K7 =	**946-6827**	13K3 =	**946-4450**	64K9 =	**946-9567**	332K =	**946-7335**	9M1 =	**947-0794**
2K74 =	**946-6835**	13K7 =	**946-4468**	66K5 =	**946-9605**	340K =	**946-7394**	10M =	**946-4018**
2K8 =	**946-6843**	14K =	**946-4565**						

207410

Order Code	Price Each MIXED QUANTITY PRICING 50+	300+	3K+	10K+	+
All Values ●	0.13	0.08	0.05	0.04	– –

0.75 Watt ±1% – MFR5 Series

TT electronics Welwyn



L=10 max, Dia=3.2 max Lead length=21 nom, Lead dia=0.8

Supplied bandoliered on tape (box=2K pcs)

Fully approved to **BS9111-NO16** and available to **CECC 40101-019/EZ** release.

Power rating @ 70°C	0.75W commercial 0.5W 100ppm release	Operating temperature	-55°C to +155°C
Voltage rating	350V	Temperature coefficient	100ppm/°C

Stocked in the following OHMIC Values:

10R = **949-7366**	18R = **949-7480**	33R = **949-7676**	56R = **949-7820**	100R = **949-7340**
12R = **949-7404**	22R = **949-7579**	39R = **949-7714**	68R = **949-7889**	120R = **949-7382**
15R = **949-7447**	27R = **949-7617**	47R = **949-7773**	82R = **949-7943**	150R = **949-7420**
180R = **949-7463**	820R = **949-7927**	5K6 = **949-7838**	39K = **949-7706**	220K = **949-7544**
220R = **949-7552**	1K = **949-7498**	6K8 = **949-7897**	47K = **949-7765**	270K = **949-7587**
270R = **949-7595**	1K2 = **949-7501**	8K2 = **949-7951**	56K = **949-7811**	330K = **949-7641**
330R = **949-7650**	1K5 = **949-7510**	10K = **949-7358**	68K = **949-7870**	390K = **949-7684**
390R = **949-7692**	1K8 = **949-7528**	12K = **949-7390**	82K = **949-7935**	470K = **949-7749**
470R = **949-7757**	2K2 = **949-7625**	15K = **949-7439**	100K = **949-7331**	560K = **949-7790**
560R = **949-7803**	2K7 = **949-7633**	18K = **949-7471**	120K = **949-7374**	680K = **949-7854**
620R = **949-7846**	3K3 = **949-7722**	22K = **949-7560**	150K = **949-7412**	820K = **949-7919**
680R = **949-7862**	3K9 = **949-7730**	27K = **949-7609**	180K = **949-7455**	1M = **949-7536**
750R = **949-7900**	4K7 = **949-7781**	33K = **949-7668**		

These products are available to full documented release, upon request.

207411

Order Code	Price Each MIXED QUANTITY PRICING 10+	500+	1K+	10K+
All Values ● ●	0.20	0.15	0.15	0.12

Metal Film High Voltage

1.6kV & 3.5kV – MH Series

TT electronics Welwyn

¼Watt MH25 & ½Watt MH37

MH25 - L = 6.2, Dia. = 2.3, Lead length = 21min, Lead dia. = 0.6
Supplied bandoliered on tape (box = 5000 pcs)

MH37 - L = 9.0, Dia. = 3.7, Lead length = 19.6 min, Lead dia. = 0.8
Supplied bandoliered on tape (box = 2500 pcs)

- High voltage metal film resistors
- High pulse load capability
- Applications include high voltage power supplies, domestic appliance motor speed control, barrier resistors in televisions, capacitor bleed resistors

Power rating @ 70°C	0.25W (MH25) 0.5W (MH37)	Operating temperature range	-55°C to +155°C
Resistance tolerance	±5%	Temperature coefficient	100ppm/°C

Stocked in the following OHMIC Values:

1.6kV MH25 Series

330K = **110-0276**	1M = **110-0281**	2M2 = **110-0286**	3M9 = **110-0289**	6M8 = **110-0292**
470K = **110-0278**	1M2 = **110-0283**	2M7 = **110-0287**	4M7 = **110-0290**	8M2 = **110-0293**
680K = **110-0279**	1M5 = **110-0284**	3M3 = **110-0288**	5M6 = **110-0291**	10M = **110-0295**
820K = **110-0280**	1M8 = **110-0285**			

3.5kV MH37 Series

330K = **110-0296**	470K = **110-0297**	680K = **110-0298**	820K = **110-0299**	1M = **110-0301**

312073

Order Multiple=10 Order Code	Price Each 10+	50+	250+	500+	+
1.6kV MH25 Series					
All Values ●	0.07	0.07	0.06	0.06	– –
3.5kV MH37 Series					
All Values ●	0.15	0.13	0.11	0.10	– –

Metal Film Power

A homogeneous film of metal alloy is deposited on a high grade ceramic body. After a helical groove has been cut in the resistive layer, tinned connecting wires of electrolytic copper are welded to the end-caps. The resistors are coated with a red non-inflammable lacquer which provides electrical, mechanical, and climatic protection. The encapsulation is resistant to all cleaning solvents in accordance with **MIL-STD 202E method 215**, and **IEC 68-2-45.**

213416

1 Watt ±5% – PR01 Series

Phoenix

L=8.5 max, Dia=2.5 max
Lead length = 26 nom, Lead dia. = 0.58

Supplied bandoliered on tape (box=1K pcs)

Power rating @ 70°C	1W		
Voltage rating	350V (DC or RMS)	Temperature coefficient	±250ppm/°C
Climatic category	55/155/16	Operating temperature	-55°C to +155°C

Stocked in the following OHMIC Values:

1R = **947-4307**	18R = **947-4242**	330R = **947-4480**	5K6 = **947-4692**	82K = **947-4790**
1R2 = **947-4315**	22R = **947-4374**	390R = **947-4528**	6K8 = **947-4757**	100K = **947-4099**
1R5 = **947-4323**	27R = **947-4420**	470R = **947-4609**	8K2 = **947-4811**	120K = **947-4137**
1R8 = **947-4331**	33R = **947-4501**	560R = **947-4668**	10K = **947-4110**	150K = **947-4170**
2R2 = **947-4455**	39R = **947-4544**	680R = **947-4722**	12K = **947-4153**	180K = **947-4218**
2R7 = **947-4463**	47R = **947-4625**	820R = **947-4781**	15K = **947-4196**	220K = **947-4340**
3R3 = **947-4579**	56R = **947-4684**	1K = **947-4250**	18K = **947-4234**	270K = **947-4382**
3R9 = **947-4587**	68R = **947-4749**	1K2 = **947-4269**	22K = **947-4366**	330K = **947-4471**
4R7 = **947-4641**	82R = **947-4803**	1K5 = **947-4277**	27K = **947-4412**	390K = **947-4510**
5R6 = **947-4706**	100R = **947-4102**	1K8 = **947-4285**	33K = **947-4498**	470K = **947-4595**
6R8 = **947-4765**	120R = **947-4145**	2K2 = **947-4439**	39K = **947-4536**	560K = **947-4650**
8R2 = **947-4820**	150R = **947-4188**	2K7 = **947-4447**	47K = **947-4617**	680K = **947-4714**
10R = **947-4129**	180R = **947-4226**	3K3 = **947-4552**	56K = **947-4676**	820K = **947-4773**
12R = **947-4161**	220R = **947-4358**	3K9 = **947-4560**	68K = **947-4730**	1M = **947-4293**
15R = **947-4200**	270R = **947-4404**	4K7 = **947-4633**		

207429

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

C = CYAN M = Magenta Y = Yellow B = Black/SING

Order Code	Price Each MIXED QUANTITY PRICING 10+	100+	1K+	10K+
All Values ●	0.48	0.25	0.21	0.16

2 Watt ±5% – PR02 Series

Phoenix

L=12 max Dia=3.9 max
Lead length =26 nom, Lead dia = 0.8
Supplied bandoliered on tape. (Box=1K PCS)

Power rating @ 70°C	2W	Voltage rating	500V (DC or RMS)
Temperature coefficient	±250ppm/°C	Operating temperature	-55°C to +155°C
Climatic category	55/155/56		

Stocked in the following OHMIC Values:

1R =	947-5044	22R =	947-5109	390R =	947-5249	5K6 =	947-5419	82K =	947-5516
1R5 =	947-5052	27R =	947-5141	470R =	947-5320	6K8 =	947-5478	100K =	947-4838
1R8 =	947-5060	33R =	947-5222	560R =	947-5389	8K2 =	947-5532	120K =	947-4870
2R2 =	947-5176	39R =	947-5265	680R =	947-5443	10K =	947-4854	150K =	947-4919
2R7 =	947-5184	47R =	947-5346	820R =	947-5508	12K =	947-4897	180K =	947-4951
3R3 =	947-5290	56R =	947-5400	1K =	947-4994	15K =	947-4935	220K =	947-5079
3R9 =	947-5303	68R =	947-5460	1K2 =	947-5001	18K =	947-4978	270K =	947-5117
4R7 =	947-5362	82R =	947-5524	1K5 =	947-5010	22K =	947-5095	330K =	947-5192
5R6 =	947-5427	100R =	947-4846	1K8 =	947-5028	27K =	947-5133	390K =	947-5230
6R8 =	947-5486	120R =	947-4889	2K2 =	947-5150	33K =	947-5214	470K =	947-5311
8R2 =	947-5540	150R =	947-4927	2K7 =	947-5168	39K =	947-5257	560K =	947-5370
10R =	947-4862	180R =	947-4960	3K3 =	947-5273	47K =	947-5338	680K =	947-5435
12R =	947-4900	220R =	947-5087	3K9 =	947-5281	56K =	947-5397	820K =	947-5494
15R =	947-4943	270R =	947-5125	4K7 =	947-5354	68K =	947-5451	1M =	947-5036
18R =	947-4986	330R =	947-5206						

207218

Order Code	Price Each MIXED QUANTITY PRICING 10+	100+	1K+	10K+
All Values ●	0.79	0.41	0.34	0.25

3 Watt ±5% – RSS3

tyco/Electronics CGS

L=15 Dia=5.5 Lead Length=30 Lead dia.=0.8
Supplied bandoliered on tape (box = 1K pcs)

● Compact size high power resistors ● Flame and solvent proof coating

Power rating @ 25°C	3W	Operating temperature	-55°C to +155°C
Temperature coefficient	±300ppm/°C	Voltage rating (working)	350V
Resistance tolerance	±5%	Voltage rating (max)	600V

Stocked in the following OHMIC Values:

10R =	327-7975	68R =	327-8074	390R =	327-8165	2K2 =	327-8256	12K =	327-8347
12R =	327-7987	82R =	327-8086	470R =	327-8177	2K7 =	327-8268	15K =	327-8359
15R =	327-7999	100R =	327-8098	560R =	327-8189	3K3 =	327-8270	18K =	327-8360
18R =	327-8001	120R =	327-8104	680R =	327-8190	3K9 =	327-8281	22K =	327-8372
22R =	327-8013	150R =	327-8116	820R =	327-8207	4K7 =	327-8293	27K =	327-8384
27R =	327-8025	180R =	327-8128	1K =	327-8219	5K6 =	327-8300	33K =	327-8396
33R =	327-8037	220R =	327-8130	1K2 =	327-8220	6K8 =	327-8311	39K =	327-8402
39R =	327-8049	270R =	327-8141	1K5 =	327-8232	8K2 =	327-8323	47K =	327-8414
47R =	327-8050	330R =	327-8153	1K8 =	327-8244	10K =	327-8335	56K =	327-8426
56R =	327-8062								

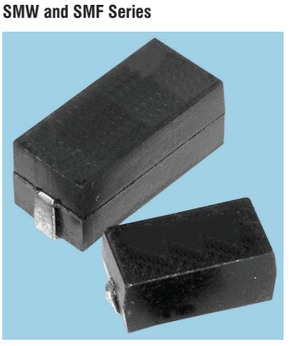
207371

Order Multiple=10 Order Code	Price Each 10+	100+	500+	1K+	+
All Values ●	0.26	0.20	0.18	0.13	– –

SMD Moulded Power Resistor

SMW and SMF Series

tyco/Electronics CGS



A surface mount power resistor suited to meet today's circuit design needs. Each case size offers low profile case design with flexible tinned copper terminations for reliable solder joints. All styles utilize a fully welded construction technique, unlike other designs that rely solely on tinned termination connections. These features allow the SM series to withstand the higher temperatures associated with reflow, vapour phase, or infrared (IR) manufacturing processes without degradation.

NEW

SMD

● Low profile design ● Ideal for power circuitry ● Available in 2 or 3 Watts

Power Rating	Max Operating Voltage	Tolerance	Width	Length	Depth
2W	300V	5%	4	6.7	3.55
3W	500V	5%	5.5	10.5	5

Test	Condition	SM (Wire)	SM (Metal Film)
Temperature coefficient of resistance	-55°C to 200°C	±200ppm/°C	±100ppm/°C
Short time overload	5 times of rated wattage for 5 sec.	± 1%	± 0.5%
Rated load	Rated voltage for 30 minutes	± 1%	± 0.5%
Insulation resistance	500V	10000MR	
Load Life	70°C on-off cycle 1,000hrs.	± 2%	± 1%
Humidity Load Life	40°C - 95% RH on-off cycle 500hrs	± 2%	± 1%

Stocked in the following OHMIC Values:

2W Wirewound		3W Wirewound		2W Metal Film		3W Metal Film	
0R1 =	108-6262	0R1 =	108-6356	220R =	108-6306	330R =	108-6402
0R12 =	108-6263	0R12 =	108-6357	270R =	108-6307	390R =	108-6403
0R15 =	108-6264	0R15 =	108-6358	330R =	108-6308	470R =	108-6404
0R18 =	108-6265	0R18 =	108-6359	390R =	108-6309	560R =	108-6405
0R22 =	108-6266	0R22 =	108-6360	470R =	108-6310	680R =	108-6407
0R27 =	108-6267	0R27 =	108-6361	560R =	108-6311	820R =	108-6408
0R33 =	108-6268	0R33 =	108-6362	680R =	108-6312	1K =	108-6409
0R39 =	108-6269	0R39 =	108-6363	820R =	108-6313	1K2 =	108-6410
0R47 =	108-6270	0R47 =	108-6365	1K =	108-6314	1K5 =	108-6411
0R56 =	108-6271	0R56 =	108-6366	1K2 =	108-6316	1K8 =	108-6412
0R68 =	108-6272	0R68 =	108-6367	1K5 =	108-6317	2K2 =	108-6413
0R82 =	108-6274	0R82 =	108-6368	1K8 =	108-6318	2K7 =	108-6414
1R =	108-6275	1R =	108-6369	2K2 =	108-6319	3K3 =	108-6415
1R2 =	108-6276	1R2 =	108-6370	2K7 =	108-6320	3K9 =	108-6416
1R5 =	108-6277	1R5 =	108-6371	3K3 =	108-6321	4K7 =	108-6417
1R8 =	108-6278	1R8 =	108-6372	3K9 =	108-6322	5K6 =	108-6419
2R2 =	108-6279	2R2 =	108-6373	4K7 =	108-6323	6K8 =	108-6421
2R7 =	108-6280	2R7 =	108-6374	5K6 =	108-6324	8K2 =	108-6422
3R3 =	108-6281	3R3 =	108-6375	6K8 =	108-6325	10K =	108-6423
3R9 =	108-6282	3R9 =	108-6377	8K2 =	108-6326	12K =	108-6424
4R7 =	108-6283	4R7 =	108-6378	10K =	108-6328	15K =	108-6425
5R6 =	108-6284	5R6 =	108-6379	12K =	108-6329	18K =	108-6426
6R8 =	108-6286	6R8 =	108-6380	15K =	108-6330	22K =	108-6427
8R2 =	108-6287	8R2 =	108-6381	18K =	108-6331	27K =	108-6428
10R =	108-6288	10R =	108-6382	22K =	108-6332	33K =	108-6429
12R =	108-6289	12R =	108-6383	470K =	108-6350	39K =	108-6430
15R =	108-6290	15R =	108-6384	470K =	108-6350	47K =	108-6432
18R =	108-6291	18R =	108-6385	470K =	108-6350	56K =	108-6433
22R =	108-6292	22R =	108-6386	470K =	108-6350	68K =	108-6434
27R =	108-6293	27R =	108-6387	470K =	108-6350	82K =	108-6435
33R =	108-6294	33R =	108-6389	470K =	108-6350	100K =	108-6436
39R =	108-6295	39R =	108-6391	470K =	108-6350	120K =	108-6437
47R =	108-6296	47R =	108-6392	470K =	108-6350	150K =	108-6438
56R =	108-6298	56R =	108-6393	470K =	108-6350	180K =	108-6439
68R =	108-6299	68R =	108-6394	470K =	108-6350	220K =	108-6440
82R =	108-6300	82R =	108-6395	470K =	108-6350	270K =	108-6441
100R =	108-6301	100R =	108-6396	470K =	108-6350	330K =	108-6442
120R =	108-6302	120R =	108-6397	470K =	108-6350	390K =	108-6444
150R =	108-6304	150R =	108-6398	470K =	108-6350	470K =	108-6445
180R =	108-6305	180R =	108-6399	470K =	108-6350	560K =	108-6446
		220R =	108-6400	470K =	108-6350	680K =	108-6447
		270R =	108-6401	560K =	108-6351	820K =	108-6448
				680K =	108-6353	1M =	108-6449
				820K =	108-6354		
				1M =	108-6355		

423383

	Order Code	Price Each 5+	50+	250+	500+	+
2W	All Values ●	1.32	0.98	0.82	0.59	– –
3W	All Values ●	2.44	1.63	1.24	1.07	– –

Metal Oxide

MO-S Series

1, 3 and 5 Watt

TT electronics Welwyn

● Compact size for power rating ● MO5S legend marked
● MO1S and MO3S four band colour coded ● Flame retardant coating

	MO1S	MO3S	MO5S
Power rating @ 70°C	1W	3W	5W
Resistance tolerance	±5%	±5%	±5%
Temperature coefficient	±350ppm/°C	±350ppm/°C	±350ppm/°C

Stocked in the following OHMIC values:

MO1S 1 Watt

10R =	120-1015	68R =	120-1020	470R =	120-1026	3K3 =	120-1031	22K =	120-1036
15R =	120-1016	100R =	120-1021	680R =	120-1027	4K7 =	120-1032	33K =	120-1038
22R =	120-1017	150R =	120-1022	1K =	120-1028	6K8 =	120-1033	47K =	120-1039
33R =	120-1018	220R =	120-1023	1K5 =	120-1029	10K =	120-1034	68K =	120-1040
47R =	120-1019	330R =	120-1024	2K2 =	120-1030	15K =	120-1035	100K =	120-1041

MO3S 3 Watt

10R =	120-1042	68R =	120-1047	470R =	120-1054	3K3 =	120-1059	22K =	120-1065
15R =	120-1043	100R =	120-1048	680R =	120-1055	4K7 =	120-1060	33K =	120-1066
22R =	120-1044	150R =	120-1051	1K =	120-1056	6K8 =	120-1061	47K =	120-1067
33R =	120-1045	220R =	120-1052	1K5 =	120-1057	10K =	120-1063	68K =	120-1068
47R =	120-1046	330R =	120-1053	2K2 =	120-1058	15K =	120-1064	100K =	120-1069

MO5S 5 Watt

10R =	120-1070	68R =	120-1077	470R =	120-1082	3K3 =	120-1088	22K =	120-1094
15R =	120-1071	100R =	120-1078	680R =	120-1083	4K7 =	120-1089	33K =	120-1095
22R =	120-1072	150R =	120-1079	1K =	120-1084	6K8 =	120-1090	47K =	120-1096
33R =	120-1073	220R =	120-1080	1K5 =	120-1085	10K =	120-1091	68K =	120-1097
47R =	120-1075	330R =	120-1081	2K2 =	120-1087	15K =	120-1093	100K =	120-1099

RoHS ● Compliant ◄ Non-compliant ‡ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

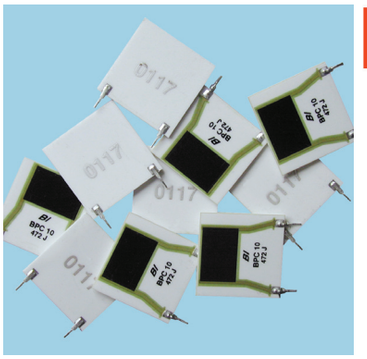
234808

Order Multiple=5 Order Code	5+	100+	500+	1K+	+
	Price Each				
All Values ●	0.45	0.30	0.28	0.23	– –
All Values ●	0.62	0.47	0.42	0.30	– –
Values 10R to 100R ●	1.72	1.45	1.23	0.94	– –
Values 150R to 47K ●	1.45	1.20	1.04	0.79	– –
Values 68K to 100K ●	1.60	1.32	1.13	0.88	– –

Thick Film Power

BPC Series

Thick Film – Power Resistor



NEW

- High power density
- Low temperature
- Power is dissipated above circuit board
- Applications includes UPS systems, Snubber circuits, Power suppy preloads

Resistance Tolerance (min) ±10%
Temperature range -55°C to 125°C
Temperature Coefficient 100ppm/°C to 100ppm/°C

3W

Resistance	Mftrs. List No.	Order Code	1+	50+	100+	500+
			Price Each			
1R	BPC31R0J	943-1969●	1.82	1.50	1.24	0.98
2R	BPC32R0J	943-1977●	1.82	1.50	1.24	0.98
5R	BPC35R0J	943-1985●	1.82	1.50	1.24	0.98
10R	BPC3100J	943-1993●	1.82	1.50	1.24	0.98
20R	BPC3200J	943-2000●	1.82	1.50	1.24	0.98
50R	BPC3500J	943-2019●	1.82	1.50	1.24	0.98
100R	BPC3101J	943-2027●	1.82	1.50	1.24	0.98
200R	BPC3201J	943-2035●	1.82	1.50	1.24	0.98
500R	BPC3501J	943-2043●	1.82	1.50	1.24	0.98
1kR	BPC3102J	943-2051●	1.82	1.50	1.24	0.98
2kR	BPC3202J	943-2060●	1.82	1.50	1.24	0.98
5kR	BPC3502J	943-2078●	1.82	1.50	1.24	0.98
10kR	BPC3103J	943-2086●	1.82	1.50	1.24	0.98
20kR	BPC3203J	943-2094●	1.82	1.50	1.24	0.98
50kR	BPC3503J	943-2108●	1.82	1.50	1.24	0.98

5W

Resistance	Mftrs. List No.	Order Code	1+	50+	100+	500+
			Price Each			
1R	BPC51R0J	943-2116●	1.99	1.63	1.37	1.04
2R	BPC52R0J	943-2124●	1.99	1.63	1.37	1.04
5R	BPC55R0J	943-2132●	1.99	1.63	1.37	1.04
10R	BPC5100J	943-2140●	1.99	1.63	1.37	1.04
20R	BPC5200J	943-2159●	1.99	1.63	1.37	1.04
50R	BPC5500J	943-2167●	1.99	1.63	1.37	1.04
100R	BPC5101J	943-2175●	1.99	1.63	1.37	1.04
200R	BPC5201J	943-2183●	1.99	1.63	1.37	1.04
500R	BPC5501J	943-2191●	1.99	1.63	1.37	1.04
1kR	BPC5102J	943-2205●	1.99	1.63	1.37	1.04
2kR	BPC5202J	943-2213●	1.99	1.63	1.37	1.04
5kR	BPC5502J	943-2221●	1.99	1.63	1.37	1.04
10kR	BPC5103J	943-2230●	1.99	1.63	1.37	1.04
20kR	BPC5203J	943-2248●	1.99	1.63	1.37	1.04
50kR	BPC5503J	943-2256●	1.99	1.63	1.37	1.04

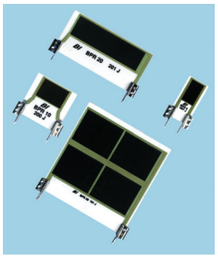
10W

411616

Resistance	Mftrs. List No.	Order Code	1+	50+	100+	500+
			Price Each			
1R	BPC101R0J	943-2264●	4.00	3.35	2.96	2.64
2R	BPC102R0J	943-2272●	4.00	3.35	2.96	2.64
5R	BPC105R0J	943-2280●	4.00	3.35	2.96	2.64
10R	BPC10100J	943-2299●	4.00	3.35	2.96	2.64
20R	BPC10200J	943-2302●	4.00	3.35	2.96	2.64
50R	BPC10500J	943-2310●	4.00	3.35	2.96	2.64
100R	BPC10101J	943-2329●	4.00	3.35	2.96	2.64
200R	BPC10201J	943-2337●	4.00	3.35	2.96	2.64
500R	BPC10501J	943-2345●	4.00	3.35	2.96	2.64
1kR	BPC10102J	943-2353●	4.00	3.35	2.96	2.64
2kR	BPC10202J	943-2361●	4.00	3.35	2.96	2.64
5kR	BPC10502J	943-2370●	4.00	3.35	2.96	2.64
10kR	BPC10103J	943-2388●	4.00	3.35	2.96	2.64
20kR	BPC10203J	943-2396●	4.00	3.35	2.96	2.64
50kR	BPC10503J	943-2400●	4.00	3.35	2.96	2.64

BPR Series

Thick Film – Power Resistor



NEW

- High power density
- Low temperature
- Power is diddipated above circuit board
- Applications includes Inrush current suppression and limiters, Snubber circuits, Switching power supplies

Resistance Tolerance (min) ±5%
Temperature range -55°C to 155°C
Temperature Coefficient 100ppm/°C to 100ppm/°C

10W

Resistance	Mftrs. List No.	Order Code	1+	50+	100+	500+
			Price Each			
1R	BPR101R0J	943-2418●	9.24	8.20	6.74	5.96
2R	BPR102R0J	943-2426●	9.24	8.20	6.74	5.96
5R	BPR105R0J	943-2434●	9.24	8.20	6.74	5.96
10R	BPR10100J	943-2442●	9.24	8.20	6.74	5.96
20R	BPR10200J	943-2450●	9.24	8.20	6.74	5.96
50R	BPR10500J	943-2469●	9.24	8.20	6.74	5.96
100R	BPR10101J	943-2477●	9.24	8.20	6.74	5.96
200R	BPR10201J	943-2485●	9.24	8.20	6.74	5.96
500R	BPR10501J	943-2493●	9.24	8.20	6.74	5.96
1kR	BPR10102J	943-2507●	9.24	8.20	6.74	5.96
2kR	BPR10202J	943-2515●	9.24	8.20	6.74	5.96
5kR	BPR10502J	943-2523●	9.24	8.20	6.74	5.96
10kR	BPR10103J	943-2531●	9.24	8.20	6.74	5.96
100kR	BPR10104J	943-2540●	9.24	8.20	6.74	5.96
200kR	BPR10204J	943-2558●	9.24	8.20	6.74	5.96

30W

Resistance	Mftrs. List No.	Order Code	1+	50+	100+	500+
			Price Each			
1R	BPR301R0J	943-2566●	15.17	14.48	13.77	12.92
2R	BPR302R0J	943-2574●	15.17	14.48	13.77	12.92
5R	BPR305R0J	943-2582●	15.17	14.48	13.77	12.92
10R	BPR30100J	943-2590●	15.17	14.48	13.77	12.92
20R	BPR30200J	943-2604●	15.17	14.48	13.77	12.92
50R	BPR30500J	943-2612●	15.17	14.48	13.77	12.92
100R	BPR30101J	943-2620●	15.17	14.48	13.77	12.92
200R	BPR30201J	943-2639●	15.17	14.48	13.77	12.92
500R	BPR30501J	943-2647●	15.17	14.48	13.77	12.92
1kR	BPR30102J	943-2655●	15.17	14.48	13.77	12.92
2kR	BPR30202J	943-2663●	15.17	14.48	13.77	12.92
5kR	BPR30502J	943-2671●	15.17	14.48	13.77	12.92
10kR	BPR30103J	943-2680●	15.17	14.48	13.77	12.92
100kR	BPR30104J	943-2698●	15.17	14.48	13.77	12.92
200kR	BPR30204J	943-2701●	15.17	14.48	13.77	12.92

411618

50W

Resistance	Mftrs. List No.	Order Code	1+	50+	100+	500+
			Price Each			
1R	BPR501R0J	943-2710●	28.06	27.50	26.50	25.91
2R	BPR502R0J	943-2728●	28.06	27.50	26.50	25.91
5R	BPR505R0J	943-2736●	28.06	27.50	26.50	25.91
10R	BPR50100J	943-2752●	28.06	27.50	26.50	25.91
20R	BPR50200J	943-2760●	28.06	27.50	26.50	25.91
50R	BPR50500J	943-2779●	28.06	27.50	26.50	25.91
100R	BPR50101J	943-2787●	28.06	27.50	26.50	25.91
200R	BPR50201J	943-2795●	28.06	27.50	26.50	25.91
500R	BPR50501J	943-2809●	28.06	27.50	26.50	25.91
1kR	BPR50102J	943-2817●	28.06	27.50	26.50	25.91
2kR	BPR50202J	943-2825●	28.06	27.50	26.50	25.91
5kR	BPR50502J	943-2841●	28.06	27.50	26.50	25.91
10kR	BPR50103J	943-2850●	28.06	27.50	26.50	25.91
100kR	BPR50104J	943-2868●	28.06	27.50	26.50	25.91
200kR	BPR50204J	943-2876●	28.06	27.50	26.50	25.91

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products,
prices are subject to change without notice.

5 Watt-MPC Series

tyco/Electronics CGS

- Non-inductive thick film power resistor
- For snubber, pulse generators and surge absorbtion in power products.

Power rating @ 70°C	5W
Maximum working Voltage	300V a.c.
Dielectric strength	5000 Volts d.c.
Resistance tolerance	±5%
Operating temperature	-55°C to +155°C
Temperature coefficient	±100ppm/°C

H=25.4, W=12.7, Lead pitch=5.08

Stocked in the following OHMIC Values:

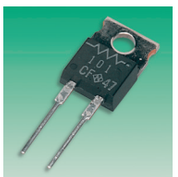
1R = **117-4263**	20R = **117-4267**	200R = **117-4270**	2K = **117-4273**	20K = **117-4276**
5R = **117-4264**	50R = **117-4268**	500R = **117-4271**	5K = **117-4274**	50K = **117-4278**
10R = **117-4266**	100R = **117-4269**	1K = **117-4272**	10K = **117-4275**	

207237

	Price Each			
Order Code	1+	50+	100+	500+
All Values ●	1.98	1.58	1.39	1.07

20 Watt - MPR 20 Series TO-220 Package

tyco/Electronics CGS



- Non-inductive power resistors
- TO-220 package for PCB or heatsink mounting
- Base plate and lead frame are copper ensuring excellent thermal dissipation

H (above PCB)=19 W=10.6 D=4.5

Power rating @ 25°C	2W (20W with 6.0°C/W heat sink fitted)	Resistance tolerance	±5%
		Operating temperature	-55°C to +155°C
Voltage rating	500V	Temperature coefficient	±250ppm/°C
Dielectric strength	2000dc		

Stocked in the following OHMIC Values:

0R22 = **117-4220**	3R3 = **117-4224**	33R = **117-4229**	330R = **117-4234**	4K7 = **117-4238**
0R47 = **117-4221**	4R7 = **117-4225**	47R = **117-4231**	470R = **117-4235**	10K = **117-4239**
1R = **117-4222**	10R = **117-4226**	100R = **117-4232**	1K = **117-4236**	15K = **117-4240**
2R2 = **117-4223**	22R = **117-4227**	220R = **117-4233**	2K2 = **117-4237**	

207217

	Price Each				
Order Code	1+	25+	50+	100+	+
All Values ●	10.94	9.36	8.69	5.10	– –

20 Watt - MHP 20S Series TO-126 Package

BI Technologies Limited

- Superior vibration durability
- Small thin package for high density PCB installation
- TO-126 style package offering a very low thermal resistance of 5.9 C°/W

NEW

Application includes: High precision CRT color video amplifiers, Pulse generator load resistors, VHF amplifiers.

Power rating	20W	Temperature coefficient	50ppm/°C (0.01-0.09Ω)
Voltage rating	300V		100ppm/°C (0.1-9.1Ω)
Resistance tolerance	±1%		250ppm/°C (0.01-0.09Ω)
Operating temperature	155°C to +-55°C		

Stocked in the following OHMIC Values:

10R = **111-4392**	47R = **111-4394**	100m = **111-4397**	1R = **111-4399**
1K = **111-4393**	20m = **111-4395**	20R = **111-4398**	2R = **111-4400**

423669

	Price Each				
Order Code	1+	50+	250+	500+	+
All Values	6●4	5.53	4.72	3.68	– –

20 Watt - SMHP Series TO-263 Package

BI Technologies Limited

- TO-263 surface mount package offering a very low thermal resistance
- Suitable for board mounting with either solder or clip
- Non-inductive, high power resistor.

NEW

Application includes: High precision CRT color video amplifiers, In-rush current protection, rush current protection, Bleeder Resistors.

Power rating	20W	Temperature coefficient	50ppm/°C (0.01-0.09Ω)
Voltage rating	500V		100ppm/°C (0.1-9.1Ω)
Resistance tolerance	±1%		250ppm/°C (0.01-0.09Ω)
Operating temperature	155°C to +-55°C		

Stocked in the following OHMIC Values:

10R = **111-4432**	47R = **111-4434**	100m = **111-4436**	1R = **111-4439**
1K = **111-4433**	20m = **111-4435**	220m = **111-4437**	2R = **111-4441**

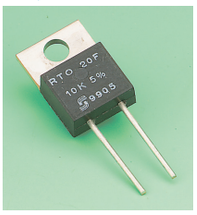
423562

	Price Each				
Order Code	1+	50+	250+	500+	+
All Values ●	9.24	8.07	7.29	6.38	– –

20 & 50 Watt – RTO Series

TO-220 Package

VISHAY



- Non-inductive thick film technology.
- Low temperature coefficient
- High power to size ratio

20 Watt

Power rating (Pr) @ 25°C		Dielectric strength	2000Vrms
with heatsink	20W	Limiting element voltage	250V
without heatsink	2W	Thermal resistance	6.5°C/W
Resistance tolerance	±5%	Overload capacity	2xPr for 5 secs
Operating temperature	-55°C to +155°C		

Stocked in the following OHMIC Values:

0R1 = **114-0196**	10R = **114-0201**	47R = **114-0205**	330R = **114-0210**	2K7 = **114-0214**
1R = **114-0197**	12R = **114-0202**	56R = **114-0207**	680R = **114-0211**	4K7 = **114-0215**
2R2 = **114-0198**	15R = **114-0203**	82R = **114-0208**	1K = **114-0212**	6K8 = **114-0216**
3R9 = **114-0199**	22R = **114-0204**	100R = **114-0209**	1K5 = **114-0213**	10K = **114-0217**
4R7 = **114-0200**				

	Price Each					
Order Code	1+	10+	50+	100+	+	+
All Values ●	7.06	6.17	5.76	5.04	– –	– –

50 Watt

Power rating (Pr) @ 25°C		Dielectric strength	2000Vrms
with heatsink	50W	Limiting element Voltage	300V
without heatsink	2.25W	Thermal resistance	2.6°C/W
Resistance Tolerance	±5%	Overload capacity	2 x pr for 5 secs
Operating temperature	-55°C to +155°C		

Stocked in the following OHMIC Values:

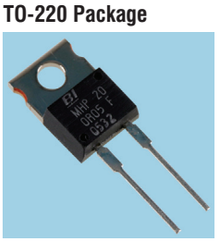
0R1 = **114-0219**	10R = **114-0226**	47R = **114-0230**	330R = **114-0235**	2K7 = **114-0239**
1R = **114-0221**	12R = **114-0227**	56R = **114-0232**	680R = **114-0236**	4K7 = **114-0240**
2R2 = **114-0223**	15R = **114-0228**	82R = **114-0233**	1K = **114-0237**	6K8 = **114-0241**
3R9 = **114-0224**	22R = **114-0229**	100R = **114-0234**	1K5 = **114-0238**	10K = **114-0242**
4R7 = **114-0225**				

207312

	Price Each					
Order Code	1+	10+	50+	100+	+	+
Values OR1 to 4R7 ●	12.12	10.90	9.86	7.34	– –	– –
Values 10R to 10K ●	9.73	8.76	7.94	5.98	– –	– –

20 Watt - MHP 20 Series TO-220 Package

BI Technologies Limited



- Non-inductive power resistors
- TO-220 package for PCB or heatsink mounting
- Base plate and lead frame are copper ensuring excellent thermal dissipation

NEW

Application includes: switching power supplies, current limiters, snubbers

Power rating	20W	Temperature coefficient	100ppm/°C (0.01-0.09Ω)
Voltage rating	500V		100ppm/°C (0.1-9.1Ω)
Resistance tolerance	±1%		
Operating temperature	155°C to +-55°C		

Stocked in the following OHMIC Values:

22R = **111-4382**	10m = **111-4386**	100m = **111-4388**	4R7 = **111-4390**
270R = **111-4383**	50m = **111-4387**	1R = **111-4389**	10K = **111-4391**
33R = **111-4385**			

423555

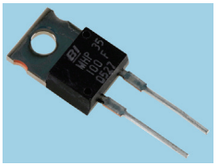
	Price Each				
Order Code	1+	50+	250+	500+	+
All Values ●	7.81	6.51	5.86	5.05	– –

RoHS ● Compliant ◄ Non-compliant ++ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

35 Watt - MHP 35 Series
TO-220 Package

TT electronics
BI Technologies Limited



NEW

- Low thermal resistance, 3.3 °C/W resistor hot spot to metal tab
- Small thin package for high density PCB installation
- TO-126 style package offering a very low thermal resistance of 5.9 C°/W

Application includes: Motor control and drive circuits, High frequency circuits and high speed pulse designs.

Power rating	35W	Temperature coefficient	50ppm/°C (0.01-0.09Ω)
Voltage rating	500V		100ppm/°C (0.1-9.1Ω)
Resistance tolerance	±1%		250ppm/°C (0.01-0.09Ω)
Operating temperature	155°C to +-55°C		

Stocked in the following OHMIC Values:

10R = **111-4401**	200K = **111-4404**	50m = **111-4406**	1R = **111-4408**
1K = **111-4403**	47K = **111-4405**	100m = **111-4407**	4R7 = **111-4409**

423674

	Price Each				
Order Code	1+	50+	250+	500+	+
All Values ●	8.46	7.16	6.51	5.70	– –

50 Watt - MHP 50 Series
TO-220 Package

TT electronics
BI Technologies Limited

NEW

- Low thermal resistance, 2.3 °C/W resistor hot spot to metal tab.
- Small thin package for high density PCB installation
- TO-220 style package offering a very low thermal resistance of 5.9 C°/W

Application includes: AC motor control, electronic load and drive circuits, Industrial PC modules (IPM) and measurement systems.

Power rating	50W	Temperature coefficient	50ppm/°C (0.01-0.09Ω)
Voltage rating	500V		100ppm/°C (0.1-9.1Ω)
Resistance tolerance	±1%		250ppm/°C (0.01-0.09Ω)
Operating temperature	155°C to +-55°C		

Stocked in the following OHMIC Values:

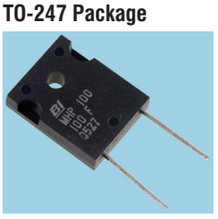
100R = **111-4410**	470K = **111-4413**	50m = **111-4416**	470m = **111-4418**
1K = **111-4411**	10m = **111-4415**	250m = **111-4417**	1R = **111-4419**
47K = **111-4412**			

423675

	Price Each				
Order Code	1+	50+	250+	500+	+
All Values ●	8.46	7.16	6.51	5.70	– –

100 Watt - MHP 100 Series
TO-247 Package

TT electronics
BI Technologies Limited



NEW

- Extremely Low thermal resistance, 1.3 °C/W resistor hot spot to metal tab
- Small thin package for high density PCB installation
- Non-inductive, high power resistor.

Application includes: AC motor control, electronic load and drive circuits, Industrial PC modules (IPM) and measurement systems.

Power rating	100W	Temperature coefficient	50ppm/°C (0.01-0.09Ω)
Voltage rating	700V		100ppm/°C (0.1-9.1Ω)
Resistance tolerance	±1%		250ppm/°C (0.01-0.09Ω)
Operating temperature	155°C to +-55°C		

Stocked in the following OHMIC Values:

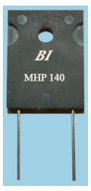
10R = **111-4420**	50R = **111-4422**	470m = **111-4424**	2R = **111-4427**
100R = **111-4421**	220m = **111-4423**	1R = **111-4425**	4R7 = **111-4428**

423676

	Price Each				
Order Code	1+	50+	250+	500+	+
All Values ●	15.46	13.12	10.58	10.25	– –

140 Watt - MHP 140 Series
TO-247 Package

TT electronics
BI Technologies Limited



NEW

- Extremely Low thermal resistance, 0.9 °C/W resistor hot spot to metal tab
- Small thin package for high density PCB installation
- Non-inductive, high power resistor.

Application includes: AC motor control, UPS and power supply circuits, PLC drivers.

Power rating	140W
Voltage rating	700V
Resistance tolerance	±1%
Operating temperature	155°C to +-55°C
Temperature coefficient	50ppm/°C (0.01-0.09Ω) 100ppm/°C (0.1-9.1Ω) 250ppm/°C (0.01-0.09Ω)

Stocked in the following OHMIC Values:

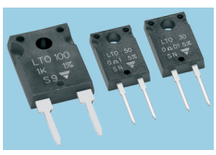
100R = **111-4429**	220m = **111-4430**	1R = **111-4431**

423677

	Price Each				
Order Code	1+	50+	250+	500+	+
All Values ●	17.87	15.53	12.99	12.66	– –

LTO Series

VISHAY
Vishay Spectrol



NEW

- Direct mounting ceramic on heatsink
- Non Inductive
- Isolated case

Series	LTO 30 Series	LTO 50 Series	LTO 100 Series
Power	30W	50W	100W
Temperature Coefficient	150ppm/°C	150ppm/°C	150ppm/°C
Temperature Range	+150 to -55°C	+150 to -55°C	+175 to -55°C
Tolerance	±5%	±5%	±5%
Voltage	250V	250V	375V
Dimension (mm)	L = 16.2, W = 10.4, D = 3.2 (LTO 30 & 50 Series)		L = 20.7, W = 15.76, D = 5 (LTO 100 Series)

411627

LTO 30 Series

Value	Order Code	Value	Order Code
0R01	956-6872	4R7	956-6970
0R015	956-6880	5R	956-6988
0R022	956-6899	10R	956-6996
0R047	956-6902	15R	956-7003
0R05	956-6910	22R	956-7011
0R068	956-6929	47R	956-7020
0R1	956-6937	100R	956-7038
0R47	956-6945	1K	956-7046
1R	956-6953	10K	956-7054
2R2	956-6961		

LTO 50 Series

Value	Order Code	Value	Order Code
0R01	956-7062	4R7	956-7151
0R022	956-7070	5R	956-7160
0R047	956-7089	10R	956-7178
0R05	956-7097	22R	956-7186
0R068	956-7100	47R	956-7194
0R1	956-7119	100R	956-7208
0R47	956-7127	1K	956-7216
1R	956-7135	10K	956-7224
2R2	956-7143		

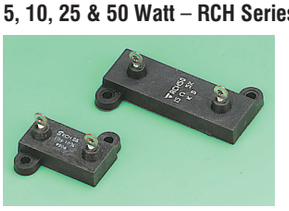
LTO 100 Series

Value	Order Code	Value	Order Code
0R015	956-7240	4R7	956-7305
0R022	956-7259	10R	956-7313
0R047	956-7267	15R	956-7321
0R05	956-7275	100R	956-7330
0R1	956-7283	1K	956-7348
1R	956-7291	10K	956-7356

	Price Each				
Order Code	1+	10+	50+	10+	50+
All LTO 30 Values ●	7.14	6.69	6.30	5.79	– –
All LTO 50 Values ●	9.00	8.61	8.16	8.61	8.16
All LTO 100 Values ●	20.64	19.47	19.05	19.47	19.05

5, 10, 25 & 50 Watt – RCH Series

VISHAY



- Non-inductive thick film technology
- Audio and high frequency applications
- High power rating
- High overload capabilities
- High stability

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

5 Watt

Power rating @ 25°C		Dielectric strength	3500Vrms
with 1°C/W heatsink	25W	Insulation resistance	10^6MΩ
without heatsink	5W	Limiting element Voltage	550Vrms
Resistance Tolerance	±5%	Maximum overload voltage	1100Vrms
Operating temperature	-55°C to +125°C	Thermal resistance	1.4°C/W

Dimensions:
L=28, W=14, Height above PCB=15
Fixing centres=18.3 x 19.8, Hole dia.=3.2

Stocked in the following OHMIC Values:

100R = **881-0753**	1R = **881-0788**	22R = **881-0818**	47R = **881-0842**
10K = **881-0761**	1R5 = **881-0796**	2R2 = **881-0826**	4R7 = **881-0850**
10K = **881-0770**	220R = **881-0800**	470R = **881-0834**	680R = **881-0869**

	Price Each				
Order Code	1+	20+	50+	100+	+
All Values ●	7.49	7.06	6.48	5.40	– –

10 Watt

Power rating @ 25°C		Dielectric strength	3500Vrms
with 1°C/W heatsink	25W	Insulation resistance	10^6MΩ
without heatsink	10W	Limiting element Voltage	550Vrms
Resistance Tolerance	±5%	Maximum overload voltage	1100Vrms
Operating temperature	-55°C to +125°C	Thermal resistance	1.4°C/W

Dimensions:
L=28, W=14, Height above PCB=15
Fixing centres=18.3 x 19.8, Hole dia.=3.2

Stocked in the following OHMIC Values:

100R = **881-0630**	1K = **881-0664**	22R = **881-0699**	47R = **881-0729**
10K = **881-0648**	1R = **881-0672**	2R2 = **881-0702**	4R7 = **881-0737**
10R = **881-0656**	220R = **881-0680**	470R = **881-0710**	680R = **881-0745**

	Price Each				
Order Code	1+	20+	50+	100+	+
All Values ●	8.04	7.55	6.93	5.60	– –

25 Watt

Power rating @ 25°C		Dielectric strength	3500Vrms
with 1°C/W heatsink	25W	Insulation resistance	10^6MΩ
without heatsink	4W	Limiting element Voltage	550Vrms
Resistance Tolerance	±5%	Maximum overload voltage	1100Vrms
Operating temperature	-55°C to +125°C	Thermal resistance	1.4°C/W

Dimensions:
L=28, W=14, Height above PCB=15
Fixing centres=18.3 x 19.8, Hole dia.=3.2

Stocked in the following OHMIC Values:

1R = **114-1500**	22R = **114-1504**	330R = **114-1509**	4K7 = **114-1514**
2R2 = **114-1501**	47R = **114-1505**	470R = **114-1511**	10K = **114-1515**
4R7 = **114-1502**	100R = **114-1506**	680R = **114-1512**	10K = **306-7180**
10R = **114-1503**	220R = **114-1507**	1K = **114-1513**	

	Price Each				
Order Code	1+	20+	50+	100+	+
All Values ●	8.16	7.56	6.99	4.88	– –

50 Watt

Power rating @ 25°C		Dielectric strength	3500Vrms
with 1°C/W heatsink	50W	Insulation resistance	10^6MΩ
without heatsink	5.5W	Limiting element Voltage	1285Vrms
Resistance Tolerance	±5%	Maximum overload voltage	2500Vrms
Operating temperature	-55°C to +125°C	Thermal resistance	0.8°C/W

Dimensions:
L=47.8, W=15.5, Height above PCB=15
Fixing centres=39.7 x 21.4, Hole dia.=3.2

Stocked in the following OHMIC Values:

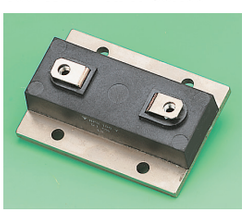
0R47 = **114-1516**	22R = **114-1520**	470R = **114-1525**	4K7 = **114-1529**
1R = **114-1517**	47R = **114-1522**	680R = **114-1526**	10K = **114-1530**
6R8 = **114-1518**	100R = **114-1523**	1K = **114-1527**	22K = **114-1531**
10R = **114-1519**	220R = **114-1524**	2K2 = **114-1528**	

207315

	Price Each				
Order Code	1+	20+	50+	100+	+
All Values	8.28	7.59	7.09	5.81	– –

100 Watt – RPH Series

VISHAY



- Non-inductive thick film technology
- High power rating
- Low thermal radiation
- High overload capabilities
- Screw terminals

L=65.5, W=46.7, Height above PCB=21.6
Fixing centres=35x37, Hole dia.=4.2

Power rating @ 25°C		Dielectric strength	5000Vrms
with 0.45°C/W heatsink	100W	Limiting element voltage	1900Vrms
without heatsink	10W	Insulation resistance	>10^6MΩ
Resistance tolerance	±5%	Thermal resistance	0.55°C/W
Operating temperature	-55°C to +125°C	Overload capacity	4 x Pr for 5 secs

Stocked in the following OHMIC Values:

0R1 = **114-1532**	4R7 = **114-1536**	22R = **114-1539**	47R = **114-1541**	1K = **114-1546**
1R = **114-1534**	6R8 = **114-1537**	33R = **114-1540**	470R = **114-1544**	4K7 = **114-1547**
2R2 = **114-1535**	10R = **114-1538**			

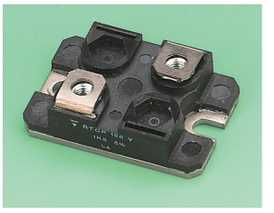
207314

	Price Each			
Order Code	1+	10+	50+	100+
All Values ●	34.47	32.32	28.74	22.39

100 & 200 Watt – RTOP Series

SOT227B Package

VISHAY



- Non-inductive thick film technology.
- High power rating
- Low thermal radiation
- High dielectric strength
- Integrated base avoids mounting stress, optimises resistor reliability
- Air abrading for improved stability and overload capability

L = 38, W = 25, Height above PCB = 12.5
Fixing centres = 30, Hole Dia. = 4.2

100 Watt

Power rating (Pr) @ 25°C	100W	Insulation resistance	>10^6MΩ
with heatsink	100W	Limiting element voltage	1500Vrms
without heatsink	5W	Thermal resistance	1°C/W
Resistance Tolerance	±5%	Overload capability	2.5xPr for 5 secs
Operating temperature	-55°C to +125°C	Terminals	M4x6 screw terminals

Stocked in the following OHMIC Values:

0R1 = **114-1548**	4R7 = **114-1551**	100R = **114-1554**	4K7 = **114-1556**
0R47 = **114-1549**	10R = **114-1552**	470R = **121-9776**	10K = **114-1558**
1R = **114-1550**	47R = **114-1553**	1K = **114-1555**	

	Price Each			
Order Code	1+	10+	50+	100+
All Values ●	36.94	33.98	27.93	23.73

200 Watt

Power rating (Pr) @ 25°C		Insulation resistance	>10^6MΩ
with heatsink	200W	Limiting element voltage	1500Vrms
without heatsink	5W	Thermal resistance	0.5°C/W
Resistance Tolerance	±5%	Overload capability	2.5 x pr for 5 secs
Operating temperature	-55°C to +125°C	Terminals	M4x6 screw terminals

Stocked in the following OHMIC Values:

0R1 = **114-1559**	1R = **114-1560**	10R = **114-1562**	470R = **114-1564**
0R47 = **121-9778**	4R7 = **114-1561**	100R = **114-1563**	

207313

	Price Each			
Order Code	1+	10+	50+	100+
All Values ●	85.67	75.41	60.80	58.34

BDS 100 & 250 Watt

tyco/Electronics CGS

- Non-inductive thick film power resistors
- Cermet film on high purity aluminia
- Bonded on a copper heatsink cased in moulded epoxy
- Values below 1R have four terminals for voltage monitoring

100 Watt

Power rating with 0.7° c/w heatsink	100W	Inductance	Virtually non Inductive
Power rating without heatsink	10W	Dimensions:	
Resistance tolerance	±10%	L=38, W=25.5, Height above PCB=25.4	
Max working voltage	500V d.c	Fixing centres=30, Hole dia.=4.5	
Temperature coefficient	150 ppm/°C		

Stocked in the following OHMIC Values:

0R47 = **117-4486**	10R = **117-4490**	68R = **117-4493**	220R = **117-4497**	1K = **117-4500**
4R7 = **117-4488**	22R = **117-4491**	100R = **117-4494**	470R = **117-4498**	2K2 = **117-4501**
6R8 = **117-4489**	47R = **117-4492**	150R = **117-4495**	680R = **117-4499**	

207250

100 Watt	Price Each			
Order Code	1+	25+	50+	100+
All Values ●	28.89	26.55	24.51	18.99

RoHS ● Compliant ◄ Non-compliant ‡ Limited stock - RoHS replacement available

250 Watt

Power rating with 0.28°C/W heatsink	250W	Inductance	Virtually non inductive
Power rating without heatsink	30W	Dimensions:	
Resistance tolerance	±10%	L=67, W=60, Height above PCB=29	
Max working voltage	1kV d.c	Fixing centres=57, Hole dia.=4.5	
Temperature coefficient	250 ppm/°C		

Stocked in the following OHMIC Values:

1R = **117-4503**

250 Watt	Price Each			
Order Code	1+	25+	50+	100+
All Values ●	118.15	109.93	104.01	98.47

250 & 500 Watt - RPS Series

VISHAY

- Non-inductive thick film technology
- High power rating
- Low thermal radiation
- High overload capability
- Integral base for easy mounting and internal thermal junction

L = 73, W = 57
Fixing Centres = 57, Hole dia. = 4.0

250 Watt

Power rating (Pr) @ 70°C with heatsink	250W	Dielectric strength	12kVrms
Resistance tolerance	±5%	Limiting element voltage	5kVrms
Operating temperature	-55°C to +125°C	Thermal resistance	0.22°C/W
Insulation resistance	>10^6MΩ	Overload capability	4xPr for 10 secs
		Terminals	M4 screw terminals

Stocked in the following OHMIC Values:

1R = **114-1565** 10R = **114-1566** 100R = **114-1567** 220R = **114-1568**

250 Watt	Price Each			
Order Code	1+	10+	50+	100+
All Values ●	108.49	95.31	87.75	82.16

500 Watt

Power rating (Pr) @ 70°C with heatsink	500W	Dielectric strength	12kVrms
Resistance tolerance	±5%	Limiting element voltage	5kVrms
Operating temperature	-55°C to +125°C	Thermal resistance	0.11°C/W
Insulation resistance	>10^6MΩ	Terminals	M4 screw terminals

Stocked in the following OHMIC Values:

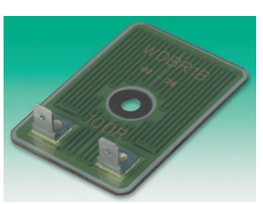
1R = **114-1571** 10R = **114-1573** 47R = **114-1575** 470R = **114-1577**
4R7 = **114-1572** 22R = **114-1574** 100R = **114-1576** 1K = **114-1578**

207309

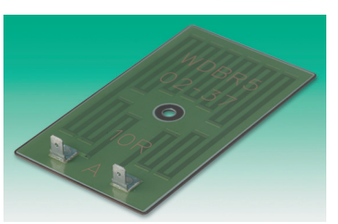
500 Watt	Price Each			
Order Code	1+	10+	50+	100+
All Values ●	147.64	119.07	106.19	104.37

2 kWatt & 5 kWatt - WDBR Series

TT electronics Welwyn



H = 0.9, W = 40.64, D = 60.96
Fixing hole dia. = 5.3, Tabs = 6.0 x 0.8 faston



H = 0.9, W = 70, D = 122
Fixing hole dia. = 5.3, Tabs = 6.0 x 0.8 faston

- Ultra low profile thick film on steel planar power resistors
- High power rating - 2kW and 5kW versions
- High pulse handling capability
- Will 'failsafe' (open circuit) under overload (fault) conditions while maintaining minimum 1kV dielectric withstand voltage
- Applications include dynamic motor braking and industrial welding

2 kWatt - WDBR2

Max Pulse Power	2kW	Resistance tolerance	±10%
Max Continuous Load	100W	Max working voltage	2500V d.c

Stocked in the following OHMIC Values:

25R = **465-9557** 50R = **465-9569** 100R = **465-9570** 150R = **465-9582**

2 kWatt	Price Each			
Order Code	1+	5+	10+	25+
All Values ●	45.34	39.03	33.07	27.18

5 kWatt - WDBR5

Max Pulse Power	5kW	Resistance tolerance	±10%
Max Continous Load	300W	Max working voltage	2500V d.c

Stocked in the following OHMIC Values:

25R = **465-9594** 50R = **465-9600** 100R = **465-9612** 150R = **465-9624**

312065

5 kWatt	Price Each			
Order Code	1+	5+	10+	25+
All Values ●	86.81	74.70	61.68	52.05

Thin Film

Surface Mount — Ni-Chrome Thin Film

PCF Series – ± 0.1%, ±25ppm/°C, 0603 Case Size

TT electronics Welwyn

SMD

- Low noise Thin Film technology
- High precision resistors in 0603 case size
- E96 range of values
- Close tolerance ±0.1%
- Industry standard ±25ppm temperature coefficient
- Excellent stability

Dimensions: L=1.6, W=0.8, H=0.4±0.2
Supplied on 8mm tape. Full reel = 1k pieces

Power rating @ 70°C	0.063W	Max. working voltage	V75
Operating temperature	-55°C to +125°C	Max. overload voltage	V150
Temperature coefficient	±25ppm/°C		

Stocked in the following OHMIC Values:

100R = **116-0304**	1K5 = **116-0326**	5K11 = **116-0347**	15K8 = **116-0367**	57K6 = **116-0389**
110R = **116-0305**	1K54 = **116-0327**	5K36 = **116-0348**	16K2 = **116-0368**	60K4 = **116-0390**
118R = **116-0306**	1K62 = **116-0328**	5K49 = **116-0349**	16K5 = **116-0371**	68K1 = **116-0391**
121R = **116-0307**	1K74 = **116-0329**	5K9 = **116-0350**	17K4 = **116-0372**	75K = **116-0392**
150R = **116-0309**	1K78 = **116-0330**	6K04 = **116-0351**	18K2 = **116-0373**	76K8 = **116-0393**
162R = **116-0311**	2K = **116-0331**	6K19 = **116-0352**	20K = **116-0374**	84K5 = **116-0395**
243R = **116-0312**	2K21 = **116-0332**	6K81 = **116-0353**	21K5 = **116-0375**	100K = **116-0396**
249R = **116-0313**	2K37 = **116-0334**	7K5 = **116-0354**	22K1 = **116-0376**	124K = **116-0397**
274R = **116-0314**	2K49 = **116-0335**	8K25 = **116-0355**	24K3 = **116-0377**	150K = **116-0398**
332R = **116-0315**	2K74 = **116-0336**	8K87 = **116-0356**	24K9 = **116-0378**	154K = **116-0399**
402R = **116-0316**	3K01 = **116-0337**	9K76 = **116-0358**	30K1 = **116-0379**	182K = **116-0401**
475R = **116-0317**	3K32 = **116-0338**	10K = **116-0359**	33K2 = **116-0380**	200K = **116-0402**
499R = **116-0318**	3K48 = **116-0339**	11K = **116-0360**	45K3 = **116-0381**	215K = **116-0403**
619R = **116-0319**	3K65 = **116-0340**	11K5 = **116-0361**	46K4 = **116-0383**	221K = **116-0404**
806R = **116-0320**	3K74 = **116-0341**	12K1 = **116-0362**	47K5 = **116-0384**	232K = **116-0405**
1K = **116-0322**	3K92 = **116-0342**	12K4 = **116-0363**	49K9 = **116-0385**	249K = **116-0406**
1K1 = **116-0323**	4K32 = **116-0343**	13K = **116-0364**	51K1 = **116-0386**	301K = **116-0407**
1K3 = **116-0324**	4K75 = **116-0344**	14K = **116-0365**	53K6 = **116-0387**	332K = **116-0408**
1K33 = **116-0325**	4K99 = **116-0346**	15K = **116-0366**	56K2 = **116-0388**	

271565

	Price Each				
Order Code	1+	25+	100+	500+	+
All Values ●	1.32	0.98	0.82	0.59	– –

Surface Mount - Ni-Chrome Thin Film

PCF Series – ± 0.1%, ±25ppm/°C, 0805 Case Size

TT electronics Welwyn

SMD

- Low noise Thin Film technology
- High precision resistors in 0805 case size
- E96 range of values
- Close tolerance ±0.1%
- Industry standard ±25ppm temperature coefficient
- Excellent stability

Dimensions: L=2.0, W=1.25, H=0.4 ± 0.2
Supplied on 8mm tape. Full reel = 1k pieces

Power rating @ 70°C	0.1W	Max. working voltage	100 Volts
Operating temperature	-55°C to +°C	Max. overload voltage	200 Volts
Temperature coefficient	±25ppm/°C		

100R = **116-0111**	1K65 = **116-0148**	5K76 = **116-0184**	21K5 = **116-0221**	75K = **116-0258**
110R = **116-0112**	1K74 = **116-0149**	5K9 = **116-0185**	22K1 = **116-0222**	82K5 = **116-0259**
121R = **116-0113**	1K78 = **116-0150**	6K04 = **116-0186**	22K6 = **116-0223**	97K6 = **116-0260**
124R = **116-0115**	1K82 = **116-0152**	6K19 = **116-0188**	23K2 = **116-0224**	100K = **116-0261**
150R = **116-0116**	1K96 = **116-0153**	6K34 = **116-0189**	23K7 = **116-0225**	102K = **116-0262**
169R = **116-0117**	2K = **116-0154**	6K65 = **116-0190**	24K3 = **116-0226**	110K = **116-0263**
182R = **116-0118**	2K1 = **116-0155**	6K81 = **116-0191**	24K9 = **116-0227**	121K = **116-0264**
200R = **116-0119**	2K15 = **116-0156**	7K15 = **116-0192**	25K5 = **116-0228**	124K = **116-0265**
226R = **116-0120**	2K21 = **116-0157**	7K32 = **116-0193**	26K7 = **116-0231**	130K = **116-0267**
232R = **116-0121**	2K43 = **116-0158**	7K5 = **116-0194**	27K4 = **116-0232**	140K = **116-0268**
249R = **116-0122**	2K49 = **116-0159**	8K06 = **116-0195**	28K7 = **116-0233**	143K = **116-0269**
274R = **116-0123**	2K55 = **116-0160**	8K25 = **116-0196**	30K1 = **116-0234**	150K = **116-0270**
280R = **116-0124**	2K61 = **116-0161**	8K66 = **116-0197**	30K9 = **116-0235**	154K = **116-0271**
348R = **116-0125**	2K67 = **116-0162**	9K09 = **116-0198**	32K4 = **116-0236**	162K = **116-0272**
392R = **116-0127**	2K74 = **116-0164**	9K31 = **116-0200**	33K2 = **116-0237**	169K = **116-0273**
402R = **116-0128**	2K8 = **116-0165**	9K53 = **116-0201**	34K8 = **116-0238**	191K = **116-0274**
422R = **116-0129**	3K01 = **116-0166**	9K76 = **116-0202**	35K7 = **116-0239**	200K = **116-0275**
453R = **116-0130**	3K16 = **116-0167**	10K = **116-0203**	36K5 = **116-0240**	210K = **116-0276**
475R = **116-0131**	3K32 = **116-0168**	10K2 = **116-0204**	39K2 = **116-0241**	221K = **116-0277**
499R = **116-0132**	3K4 = **116-0169**	10K5 = **116-0206**	40K2 = **116-0243**	237K = **116-0279**
511R = **116-0133**	3K48 **116-0170**	10K7 = **116-0207**	41K2 = **116-0244**	243K = **116-0281**
590R = **116-0134**	3K65 **116-0171**	11K3 = **116-0208**	43K2 = **116-0245**	249K = **116-0282**
619R = **116-0135**	3K74 **116-0172**	12K1 = **116-0209**	46K4 = **116-0246**	267K = **116-0283**
649R = **116-0136**	3K92 = **116-0173**	12K4 = **116-0210**	47K5 = **116-0247**	332K = **116-0284**
909R = **116-0137**	4K02 = **116-0174**	13K = **116-0211**	49K9 = **116-0248**	348K = **116-0285**
1K = **116-0139**	4K22 = **116-0176**	14K = **116-0212**	51K1 = **116-0249**	365K = **116-0286**
1K05 = **116-0141**	4K32 = **116-0177**	15K = **116-0213**	53K6 = **116-0250**	392K = **116-0287**
1K1 = **116-0142**	4K53 = **116-0178**	16K2 = **116-0214**	56K2 = **116-0251**	402K = **116-0288**
1K21 = **116-0143**	4K75 = **116-0179**	16K9 = **116-0215**	59K = **116-0252**	432K = **116-0289**
1K24 = **116-0144**	4K99 = **116-0180**	18K2 = **116-0216**	60K4 = **116-0253**	475K = **116-0290**
1K43 = **116-0145**	5K11 = **116-0181**	20K = **116-0218**	61K9 = **116-0255**	487K = **116-0292**
1K47 = **116-0146**	5K49 = **116-0182**	20K5 = **116-0219**	63K4 = **116-0256**	499K = **116-0293**
1K5 = **116-0147**	5K62 = **116-0183**	21K = **116-0220**	68K1 = **116-0257**	511K = **116-0294**

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

523K = **116-0295** 562K = **116-0297** 634K = **116-0299** 909K = **116-0301** 1M = **116-0303**
536K = **116-0296** 619K = **116-0298** 649K = **116-0300** 953K = **116-0302**

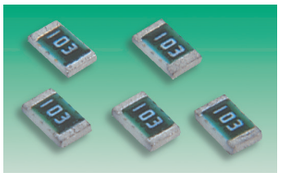
240516

Order Code	Price Each 1+	50+	100+	500+	+
All Values ●	1.39	0.98	0.85	0.62	– –

Surface Mount – Nickel Barrier

tyco Electronics HOLSWORTHY

RN Series–±0.1% ±25ppm/°C 0603 Case Size



SMD

- Very high precision, now available in 0603
- Thin film technology, low noise and very high stability
- Applications include high frequency in miniature circuits

H=0.3 ±0.1 W=0.8 ±0.1 L=1.6 ±0.1p
Supplied on tape full reel = 5Kpcs

Power rating @ 70°C	0.063W	Max. working voltage	50 Volts
Operating temperature	-55°C to +125°C	Max. overload voltage	100 Volts
Temperature coefficient	25ppm/°C		

Stocked in the following OHMIC Values:

10R = **114-0385**	150R = **114-0392**	2K2 = **114-0400**	33K = **114-0408**	62K = **114-0417**
15R = **114-0386**	220R = **114-0393**	3K3 = **114-0402**	36K = **114-0409**	68K = **114-0418**
22R = **114-0387**	330R = **114-0394**	4K7 = **114-0403**	39K = **114-0410**	75K = **114-0419**
33R = **114-0388**	470R = **114-0396**	6K8 = **114-0404**	43K = **114-0411**	82K = **114-0420**
47R = **114-0389**	680R = **114-0397**	10K = **114-0405**	47K = **114-0414**	91K = **114-0421**
68R = **114-0390**	1K = **114-0398**	15K = **114-0406**	51K = **114-0415**	100K = **114-0422**
100R = **114-0391**	1K5 = **114-0399**	22K = **114-0407**	56K = **114-0416**	

207284

Order Code	Price Each 5+	25+	100+	500+	+
All Values ●	1.91	1.64	1.42	0.69	– –

RN – 0603 Laboratory Kit ±0.1%, ±25ppm/°C

tyco Electronics HOLSWORTHY

SMD

- Surface mount ring binder laboratory kit
- Contains 0603 high precision resistors
- Thin film technology, low noise and very high stability
- Kit can be restocked when required

Kit contains 20 of each Ohmic Value
10R, 15R, 22R, 33R, 47R, 68R, 100R, 150R, 220R, 330R, 470R, 680R, 1K, 1K5, 2K2, 3K3, 4K7,6K8, 10K, 15K, 22K, 33K

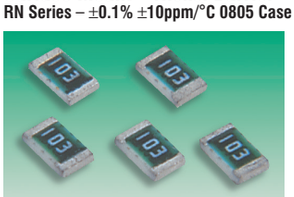
207294

	Order Code	Price Each 1+	3+
Laboratory kit	SMD 117-4173 ●	390.00	345.00

Surface Mount – Nickel Barrier

tyco Electronics HOLSWORTHY

RN Series – ±0.1% ±10ppm/°C 0805 Case Size



SMD

- E96 range precision film resistors
- 0805 case size
- Close tolerance, excellent long term stability

Power rating @ 70°C 0.1W

L=2.0 W=1.25 H=0.5 ±0.2
Supplied on 8mm tape, individually marked

Stocked in the following OHMIC Values:

10R = **114-0621**	17R8 = **114-0645**	31R6 = **114-0673**	61R9 = **114-0341**	143R = **114-0714**
10R2 = **114-0616**	18R2 = **114-0646**	32R4 = **114-0674**	64R9 = **114-0342**	147R = **114-0715**
10R5 = **114-0617**	18R7 = **114-0647**	33R2 = **114-0675**	68R1 = **114-0343**	150R = **114-0717**
10R7 = **114-0618**	19R1 = **114-0648**	34R = **114-0677**	75R = **114-0344**	154R = **114-0718**
11R = **114-0625**	19R6 = **114-0649**	34R8 = **114-0676**	78R7 = **114-0345**	158R = **114-0719**
11R3 = **114-0622**	20R = **114-0651**	35R7 = **114-0678**	82R5 = **114-0347**	162R = **114-0720**
11R5 = **114-0623**	20R5 = **114-0650**	36R5 = **114-0679**	86R6 = **114-0348**	165R = **114-0721**
11R8 = **114-0624**	21R = **114-0653**	37R4 = **114-0680**	90R9 = **114-0349**	169R = **114-0722**
12R1 = **114-0626**	21R5 = **114-0652**	38R3 = **114-0682**	95R3 = **114-0350**	174R = **114-0724**
12R4 = **114-0627**	22R1 = **114-0654**	39R2 = **114-0683**	100R = **114-0696**	178R = **114-0725**
12R7 = **114-0628**	22R6 = **114-0655**	40R2 = **114-0684**	102R = **114-0697**	182R = **114-0726**
13R = **114-0633**	23R2 = **114-0657**	41R2 = **114-0685**	105R = **114-0698**	187R = **114-0727**
13R3 = **114-0630**	23R7 = **114-0658**	42R2 = **114-0686**	107R = **114-0699**	191R = **114-0728**
13R7 = **114-0631**	24R3 = **114-0660**	43R2 = **114-0687**	110R = **114-0701**	196R = **114-0729**
14R = **114-0636**	24R9 = **114-0661**	44R2 = **114-0688**	113R = **114-0702**	200R = **114-0730**
14R3 = **114-0634**	25R5 = **114-0662**	45R3 = **114-0689**	115R = **114-0703**	205R = **114-0731**
14R7 = **114-0635**	26R1 = **114-0663**	46R4 = **114-0690**	118R = **114-0704**	210R = **114-0732**
15R = **114-0639**	26R7 = **114-0664**	47R5 = **114-0691**	121R = **114-0705**	215R = **114-0733**
15R4 = **114-0637**	27R4 = **114-0665**	48R7 = **114-0692**	124R = **114-0706**	221R = **114-0734**
15R8 = **114-0638**	28R = **114-0667**	49R9 = **114-0694**	127R = **114-0707**	226R = **114-0736**
16R2 = **114-0640**	28R7 = **114-0666**	51R1 = **114-0337**	130R = **114-0708**	232R = **114-0737**
16R5 = **114-0641**	29R4 = **114-0669**	53R6 = **114-0338**	133R = **114-0709**	237R = **114-0738**
16R9 = **114-0642**	30R1 = **114-0671**	56R2 = **114-0339**	137R = **114-0710**	243R = **114-0739**
17R4 = **114-0643**	30R9 = **114-0672**	59R = **114-0340**	140R = **114-0713**	249R = **114-0740**
255R = **114-0741**	931R = **114-0801**	3K4 = **114-0861**	12K1 = **114-0921**	43K2 = **114-0981**
261R = **114-0742**	953R = **114-0803**	3K48 = **114-0862**	12K4 = **114-0922**	44K2 = **114-0982**
267R = **114-0743**	976R = **114-0804**	3K57 = **114-0864**	12K7 = **114-0923**	45K3 = **114-0983**
274R = **114-0744**	1K = **114-0805**	3K65 = **114-0865**	13K = **114-0924**	46K4 = **114-0984**
280R = **114-0745**	1K02 = **114-0806**	3K74 = **114-0866**	13K3 = **114-0925**	47K5 = **114-0985**
287R = **114-0746**	1K05 = **114-0807**	3K83 = **114-0867**	13K7 = **114-0926**	48K7 = **114-0986**
294R = **114-0748**	1K07 = **114-0808**	3K92 = **114-0868**	14K = **114-0927**	49K9 = **114-0987**
301R = **114-0749**	1K1 = **114-0809**	4K02 = **114-0869**	14K3 = **114-0928**	51K1 = **114-0988**
309R = **114-0750**	1K13 = **114-0810**	4K12 = **114-0870**	14K7 = **114-0931**	52K3 = **114-0989**
316R = **114-0751**	1K15 = **114-0811**	4K22 = **114-0871**	15K = **114-0932**	53K6 = **114-0990**
324R = **114-0752**	1K18 = **114-0812**	4K32 = **114-0872**	15K4 = **114-0933**	54K9 = **114-0992**
332R = **114-0753**	1K21 = **114-0813**	4K42 = **114-0873**	15K8 = **114-0934**	56K2 = **114-0993**
340R = **114-0754**	1K24 = **114-0815**	4K53 = **114-0874**	16K2 = **114-0935**	57K6 = **114-0994**
348R = **114-0755**	1K27 = **114-0816**	4K64 = **114-0876**	16K5 = **114-0936**	59K = **114-0995**
357R = **114-0756**	1K3 = **114-0817**	4K75 = **114-0877**	16K9 = **114-0937**	60K4 = **114-0996**
365R = **114-0757**	1K33 = **114-0818**	4K87 = **114-0878**	17K4 = **114-0938**	61K9 = **114-0997**
374R = **114-0758**	1K37 = **114-0819**	4K99 = **114-0879**	17K8 = **114-0939**	63K4 = **114-0998**
383R = **114-0761**	1K4 = **114-0820**	5K11 = **114-0880**	18K2 = **114-0940**	64K9 = **114-0999**
392R = **114-0762**	1K43 = **114-0821**	5K23 = **114-0881**	18K7 = **114-0941**	66K5 = **114-1000**
402R = **114-0763**	1K47 = **114-0822**	5K36 = **114-0882**	19K1 = **114-0943**	68K1 = **114-1001**
412R = **114-0764**	1K5 = **114-0823**	5K49 = **114-0883**	19K6 = **114-0944**	69K8 = **114-1002**
422R = **114-0765**	1K54 = **114-0824**	5K62 = **114-0884**	20K = **114-0945**	71K5 = **114-1003**
432R = **114-0766**	1K58 = **114-0825**	5K76 = **114-0885**	20K5 = **114-0946**	73K2 = **114-1005**
442R = **114-0767**	1K62 = **114-0827**	5K9 = **114-0886**	21K = **114-0947**	75K = **114-1006**
453R = **114-0768**	1K65 = **114-0828**	6K04 = **114-0888**	21K5 = **114-0948**	76K8 = **114-1007**
464R = **114-0769**	1K69 = **114-0829**	6K19 = **114-0889**	22K1 = **114-0949**	78K7 = **114-1008**
475R = **114-0770**	1K74 = **114-0830**	6K34 = **114-0890**	22K6 = **114-0950**	80K6 = **114-1009**
487R = **114-0771**	1K78 = **114-0831**	6K49 = **114-0891**	23K2 = **114-0951**	82K5 = **114-1010**
499R = **114-0773**	1K82 = **114-0832**	6K65 = **114-0892**	23K7 = **114-0952**	84K5 = **114-1011**
511R = **114-0774**	1K87 = **114-0833**	6K81 = **114-0893**	24K3 = **114-0953**	86K6 = **114-1012**
523R = **114-0775**	1K91 = **114-0834**	6K98 = **114-0894**	24K9 = **114-0955**	88K7 = **114-1013**
536R = **114-0776**	1K96 = **114-0835**	7K15 = **114-0895**	25K5 = **114-0956**	90K9 = **114-1014**
549R = **114-0777**	2K = **114-0836**	7K32 = **114-0896**	26K1 = **114-0957**	93K1 = **114-1015**
562R = **114-0778**	2K05 = **114-0837**	7K5 = **114-0897**	26K7 = **114-0958**	95K3 = **114-1017**
576R = **114-0779**	2K1 = **114-0839**	7K68 = **114-0898**	27K4 = **114-0959**	97K6 = **114-1018**
590R = **114-0780**	2K15 = **114-0841**	7K87 = **114-0900**	28K = **114-0960**	100K = **114-1019**
604R = **114-0781**	2K21 = **114-0842**	8K06 = **114-0901**	28K7 = **114-0961**	102K = **114-0351**
619R = **114-0782**	2K26 = **114-0843**	8K25 = **114-0902**	29K4 = **114-0962**	105K = **114-0352**
634R = **114-0783**	2K32 = **114-0844**	8K45 = **114-0903**	30K1 = **114-0963**	107K = **114-0353**
649R = **114-0785**	2K37 = **114-0845**	8K66 = **114-0904**	30K9 = **114-0964**	110K = **114-0354**
665R = **114-0786**	2K43 = **114-0846**	8K87 = **114-0907**	31K6 = **114-0965**	113K = **114-0355**
681R = **114-0787**	2K49 = **114-0847**	9K09 = **114-0908**	32K4 = **114-0967**	115K = **114-0356**
698R = **114-0788**	2K55 = **114-0848**	9K31 = **114-0909**	33K2 = **114-0968**	118K = **114-0357**
715R = **114-0789**	2K61 = **114-0849**	9K53 = **114-0910**	34K = **114-0969**	121K = **114-0359**
732R = **114-0790**	2K67 = **114-0850**	9K76 = **114-0911**	34K8 = **114-0970**	124K = **114-0361**
750R = **114-0791**	2K74 = **114-0852**	10K = **114-0912**	35K7 = **114-0971**	127K = **114-0362**
768R = **114-0792**	2K8 = **114-0853**	10K2 = **114-0913**	36K5 = **114-0972**	130K = **114-0363**
787R = **114-0793**	2K87 = **114-0854**	10K5 = **114-0914**	37K4 = **114-0973**	133K = **114-0364**
806R = **114-0794**	2K94 = **114-0855**	10K7 = **114-0915**	38K3 = **114-0974**	137K = **114-0365**
825R = **114-0795**	3K01 = **114-0856**	11K = **114-0916**	39K2 = **114-0975**	140K = **114-0366**
845R = **114-0797**	3K09 = **114-0857**	11K3 = **114-0918**	40K2 = **114-0976**	143K = **114-0367**
866R = **114-0798**	3K16 = **114-0858**	11K5 = **114-0919**	41K2 = **114-0977**	147K = **114-0368**
887R = **114-0799**	3K24 = **114-0859**	11K8 = **114-0920**	42K2 = **114-0979**	150K = **114-0369**
909R = **114-0800**	3K32 = **114-0860**			

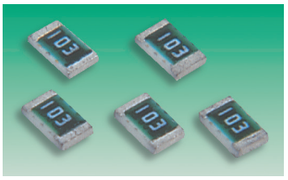
207221

Order Code	Price Each 5+	50+	100+	500+	+
All Values ●	2.73	2.08	1.92	1.45	– –

Surface Mount – Nickel Barrier

tyco Electronics HOLSWORTHY

RN Series – ±0.1% ±10ppm/°C 0603 Case Size



SMD

- E96 range precision thin film resistors
- 0603 case size
- Close tolerance ±0.1%
- Temperature coefficient ±10ppm/°C
- Excellent long term stability

H = 0.3, W = 0.8, L = 1.6
Supplied on 8mm tape, individually marked

Power rating @ 70°C	0.063W	Max. working voltage	50 Volts
Operating temperature	-55°C to +125°C	Max. overload voltage	100 Volts
Temperature coefficient	±10ppm/°C		

Stocked in the following OHMIC Values:

10R = **121-9854**	60R4 = **114-0455**	348R = **114-0484**	1K21 = **114-0514**	3K57 = **114-0540**
12R4 = **114-0423**	61R9 = **114-0456**	374R = **114-0485**	1K24 = **114-0515**	3K65 = **114-0542**
13R = **114-0424**	68R1 = **114-0457**	392R = **114-0487**	1K3 = **121-9857**	3K83 = **114-0543**
14R3 = **114-0426**	69R8 = **114-0458**	402R = **114-0488**	1K37 = **114-0517**	3K92 = **114-0544**
15R = **114-0427**	73R2 = **114-0459**	412R = **114-0489**	1K47 = **121-9858**	4K02 = **114-0545**
17R8 = **114-0429**	75R = **114-0460**	432R = **114-0490**	1K62 = **121-9859**	4K12 = **114-0546**
19R1 = **114-0430**	78R7 = **114-0461**	442R = **114-0491**	1K65 = **114-0518**	4K22 = **121-9863**
22R1 = **114-0431**	82R5 = **114-0463**	453R = **114-0492**	1K69 = **114-0519**	4K99 = **121-9864**
24R9 = **114-0432**	90R9 = **114-0464**	475R = **114-0493**	1K74 = **114-0520**	5K11 = **114-0547**
25R5 = **114-0433**	100R = **121-9855**	487R = **114-0494**	1K82 = **114-0521**	5K49 = **114-0548**
26R1 = **114-0434**	121R = **114-0465**	499R = **114-0495**	1K87 = **114-0522**	5K62 = **114-0549**
27R4 = **114-0435**	133R = **114-0466**	511R = **114-0496**	2K = **114-0523**	5K9 = **114-0550**
30R1 = **114-0436**	150R = **114-0467**	523R = **114-0497**	2K05 = **114-0524**	6K04 = **114-0551**
33R2 = **114-0438**	187R = **114-0468**	536R = **114-0499**	2K1 = **114-0525**	6K19 = **114-0552**
34R = **114-0439**	196R = **114-0469**	562R = **114-0500**	2K15 = **114-0527**	6K34 = **114-0554**
39R2 = **114-0440**	200R = **114-0470**	604R = **114-0501**	2K21 = **114-0529**	6K65 = **114-0555**
40R2 = **114-0441**	221R = **114-0471**	634R = **114-0502**	2K43 = **121-9860**	6K81 = **114-0556**
44R2 = **114-0442**	226R = **114-0472**	649R = **114-0503**	2K49 = **121-9861**	6K98 = **114-0557**
46R4 = **114-0443**	243R = **114-0473**	698R = **114-0505**	2K55 = **121-9862**	7K32 = **114-0558**
47R5 = **114-0444**	249R = **114-0475**	732R = **114-0506**	2K74 = **114-0531**	7K5 = **114-0559**
49R9 = **114-0445**	267R = **114-0476**	750R = **114-0507**	2K8 = **114-0532**	7K87 = **114-0560**
51R1 = **114-0446**	280R = **114-0477**	825R = **114-0508**	2K94 = **114-0533**	8K25 = **114-0561**
52R3 = **114-0447**	287R = **114-0478**	1K = **114-0509**	3K01 = **114-0534**	8K45 = **114-0562**
53R6 = **114-0448**	301R = **114-0479**	1K02 = **114-0510**	3K16 = **114-0535**	8K87 = **114-0563**
54R9 = **114-0451**	316R = **114-0480**	1K05 = **114-0695**	3K24 = **114-0536**	9K09 = **114-0564**
56R2 = **114-0452**	324R = **114-0481**	1K1 = **114-0511**	3K32 = **114-0537**	9K53 = **114-0566**
57R6 = **114-0453**	332R = **114-0482**	1K13 = **114-0512**	3K4 = **114-0538**	9K76 = **114-0567**
59R = **114-0454**	340R = **114-0483**	1K18 = **114-0513**	3K48 = **114-0539**	10K = **121-9866**

RoHS ● Compliant ▲ Non-compliant ‡ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

10K5 = **121-9867**	15K = **114-0578**	20K5 = **114-0587**	27K4 = **114-0597**	38K3 = **114-0606**
11K = **114-0568**	15K4 = **114-0579**	21K5 = **121-9871**	29K4 = **114-0598**	39K2 = **114-0608**
12K1 = **114-0569**	15K8 = **114-0580**	22K1 = **114-0588**	30K1 = **114-0599**	40K2 = **114-0609**
12K4 = **114-0570**	16K2 = **114-0581**	22K6 = **114-0591**	30K9 = **114-0600**	42K2 = **114-0610**
13K = **114-0571**	16K5 = **114-0582**	24K3 = **114-0592**	32K4 = **114-0601**	44K2 = **114-0611**
13K3 = **114-0572**	16K9 = **114-0583**	24K9 = **114-0593**	33K2 = **114-0602**	45K3 = **114-0612**
13K7 = **114-0573**	17K4 = **114-0584**	25K5 = **114-0594**	34K = **114-0603**	46K4 = **114-0613**
14K = **114-0574**	18K2 = **114-0585**	26K1 = **114-0595**	35K7 = **114-0604**	47K5 = **114-0614**
14K3 = **114-0575**	19K6 = **114-0586**	26K7 = **114-0596**	36K5 = **114-0605**	49K9 = **114-0615**
14K7 = **114-0576**	20K = **121-9869**			

312082

	Price Each				
Order Code	5+	50+	100+	500+	+
All Values ●	3.19	2.47	2.28	1.95	– –

RN Series - Full Reels

tyco Electronics HOLSWORTHY

±0.1% ±10ppm/°C 0805 Case Size

- Selected popular E96 values on Megi reels
- 1000 pieces per reel complete with leader tape
- Supplied on 8mm tape individually marked

Stocked in the following OHMIC Values:

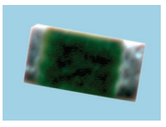
100R = **114-0328**	4K75 = NEW **114-0377**	30K1 = NEW **114-0382**
499R = **114-0329**	4K99 = **114-0331**	33K2 = NEW **114-0384**
1K = **114-0330**	10K = **114-0332**	47K5 = **121-9853**
2K = NEW **114-0373**	15K = NEW **114-0380**	49K9 = **114-0335**
3K32 = NEW **114-0376**	20K = **114-0333**	100K = **114-0336**

207282

	Price Each	
Order Code	1+	3+
All Values ●	979.23	820.13

FC High Frequency Series – Thin Film

NEW VISHAY



FC series chip resistors are designed with low internal reactance. They function as almost pure resistors on a very high range of frequencies. The specialized laser edge trimming allows for precision tolerances to 0.1%

Features:
- Small standard size 0402 case size
- Edge trimmed block resistors

Applications:
- Low noise amplifiers
- Line termination

Power rating 50mW Resistance tolerance ±0.1%

423449

		Price Each				
Resistance	**Order Code**	1+	25+	100+	250+	+
50R	**110-9049**●	4.78	4.20	3.52	2.83	– –
100R	**110-9051**●	4.78	4.20	3.52	2.83	– –
500R	**110-9052**●	4.78	4.20	3.52	2.83	– –
1K	**110-9053**●	4.78	4.20	3.52	2.83	– –

Metal Film Precision

0.25 Watt ±0.1% ±15ppm/°C – RC55Y Series

TT electronics Welwyn

L=7.2 max, Dia=2.5 max Lead length=30.0min, Lead dia=0.6

- E96 range precision film resistors
- Leaded design with high temperature epoxy coating
- Fully approved to **BSE9111 N001**
- Available to **CECC 40101-004** release

Power rating @ 70°C 0.25W (0.125W CECC) Operating temperature -55°C to +155°C
Voltage range 200V dc or ac rms Temperature coefficient ±15ppm/°C

Stocked in the following OHMIC Values:

51R1 = **950-3242**	118R = **950-0049**	196R = **950-0693**	324R = **950-1703**	536R = **950-2343**
53R6 = **950-3250**	121R = **950-0103**	200R = **950-1037**	332R = **950-1720**	549R = **950-2360**
56R2 = **950-3277**	124R = **950-0120**	205R = **950-1053**	340R = **950-1746**	562R = **950-2386**
59R = **950-3285**	127R = **950-0146**	210R = **950-1096**	348R = **950-1754**	576R = **950-2408**
61R9 = **950-3307**	130R = **950-0197**	215R = **950-1118**	357R = **950-1789**	590R = **950-2424**
64R9 = **950-3315**	133R = **950-0219**	221R = **950-1150**	365R = **950-1800**	604R = **950-2513**
68R1 = **950-3331**	137R = **950-0235**	226R = **950-1177**	374R = **950-1827**	619R = **950-2530**
71R5 = **950-3340**	140R = **950-0286**	232R = **950-1215**	383R = **950-1843**	634R = **950-2556**
75R = **950-3358**	143R = **950-0308**	237R = **950-1231**	392R = **950-1860**	649R = **950-2572**
78R7 = **950-3374**	147R = **950-0324**	243R = **950-1274**	402R = **950-2009**	665R = **950-2599**
82R5 = **950-3390**	150R = **950-0375**	249R = **950-1290**	412R = **950-2025**	681R = **950-2610**
86R6 = **950-3404**	154R = **950-0391**	255R = **950-1339**	422R = **950-2041**	698R = **950-2637**
90R9 = **950-3420**	158R = **950-0413**	261R = **950-1355**	432R = **950-2068**	715R = **950-2734**
95R3 = **950-3439**	162R = **950-0464**	267R = **950-1363**	442R = **950-2084**	732R = **950-2750**
100R = **949-9865**	165R = **950-0480**	274R = **950-1398**	453R = **950-2106**	750R = **950-2777**
102R = **949-9881**	169R = **950-0502**	280R = **950-1410**	464R = **950-2122**	768R = **950-2793**
105R = **949-9903**	174R = **950-0553**	287R = **950-1428**	475R = **950-2149**	787R = **950-2815**
107R = **949-9920**	178R = **950-0570**	294R = **950-1452**	487R = **950-2165**	806R = **950-2882**
110R = **949-9989**	182R = **950-0618**	301R = **950-1649**	499R = **950-2181**	825R = **950-2904**
113R = **950-0006**	187R = **950-0634**	309R = **950-1657**	511R = **950-2300**	845R = **950-2920**
115R = **950-0022**	191R = **950-0677**	316R = **950-1681**	523R = **950-2327**	866R = **950-2947**
887R = **950-2963**	3K01 = **950-1886**	10K2 = **949-9946**	34K = **950-1762**	113K = **949-9997**
909R = **950-3030**	3K09 = **950-1894**	10K5 = **949-9954**	34K8 = **950-1770**	115K = **950-0014**
931R = **950-3056**	3K16 = **950-1908**	10K7 = **949-9962**	35K7 = **950-1797**	118K = **950-0030**
953R = **950-3072**	3K24 = **950-1916**	11K = **950-0057**	36K5 = **950-1819**	121K = **950-0090**
976R = **950-3099**	3K32 = **950-1924**	11K3 = **950-0065**	37K4 = **950-1835**	124K = **950-0111**
1K = **950-0723**	3K4 = **950-1932**	11K5 = **950-0073**	38K3 = **950-1851**	127K = **950-0138**
1K02 = **950-0731**	3K48 = **950-1940**	11K8 = **950-0081**	39K2 = **950-1878**	130K = **950-0189**
1K05 = **950-0740**	3K57 = **950-1959**	12K1 = **950-0154**	40K2 = **950-2017**	133K = **950-0200**
1K07 = **950-0758**	3K65 = **950-1967**	12K4 = **950-0162**	41K2 = **950-2033**	137K = **950-0227**
1K1 = **950-0766**	3K74 = **950-1975**	12K7 = **950-0170**	42K2 = **950-2050**	140K = **950-0278**
1K13 = **950-0774**	3K83 = **950-1983**	13K = **950-0243**	43K2 = **950-2076**	143K = **950-0294**
1K15 = **950-0782**	3K92 = **950-1991**	13K3 = **950-0251**	44K2 = **950-2092**	147K = **950-0316**
1K18 = **950-0804**	4K02 = **950-2203**	13K7 = **950-0260**	45K3 = **950-2114**	150K = **950-0367**
1K21 = **950-0812**	4K12 = **950-2211**	14K = **950-0332**	46K4 = **950-2130**	154K = **950-0383**
1K24 = **950-0820**	4K22 = **950-2220**	14K3 = **950-0340**	47K5 = **950-2157**	158K = **950-0405**
1K27 = **950-0839**	4K32 = **950-2238**	14K7 = **950-0359**	48K7 = **950-2173**	162K = **950-0456**
1K3 = **950-0847**	4K42 = **950-2246**	15K = **950-0421**	49K9 = **950-2190**	165K = **950-0472**
1K33 = **950-0855**	4K53 = **950-2254**	15K4 = **950-0430**	51K1 = **950-2319**	169K = **950-0499**
1K37 = **950-0863**	4K64 = **950-2262**	15K8 = **950-0448**	52K3 = **950-2335**	174K = **950-0545**
1K4 = **950-0871**	4K75 = **950-2270**	16K2 = **950-0510**	53K6 = **950-2351**	178K = **950-0561**
1K43 = **950-0880**	4K87 = **950-2289**	16K5 = **950-0529**	54K9 = **950-2378**	182K = **950-0600**
1K47 = **950-0898**	4K99 = **950-2297**	16K9 = **950-0537**	56K2 = **950-2394**	187K = **950-0626**
1K5 = **950-0901**	5K11 = **950-2440**	17K4 = **950-0588**	57K6 = **950-2416**	191K = **950-0669**
1K54 = **950-0910**	5K23 = **950-2459**	17K8 = **950-0596**	59K = **950-2432**	196K = **950-0685**
1K58 = **950-0928**	5K36 = **950-2467**	18K2 = **950-0642**	60K4 = **950-2521**	200K = **950-1029**
1K62 = **950-0936**	5K49 = **950-2475**	18K7 = **950-0650**	61K9 = **950-2548**	205K = **950-1045**
1K65 = **950-0944**	5K62 = **950-2483**	19K1 = **950-0707**	63K4 = **950-2564**	210K = **950-1088**
1K69 = **950-0952**	5K76 = **950-2491**	19K6 = **950-0715**	64K9 = **950-2580**	215K = **950-1100**
1K74 = **950-0960**	5K9 = **950-2505**	20K = **950-1061**	66K5 = **950-2602**	221K = **950-1142**
1K78 = **950-0979**	6K04 = **950-2653**	20K5 = **950-1070**	68K1 = **950-2629**	226K = **950-1169**
1K82 = **950-0987**	6K19 = **950-2661**	21K = **950-1126**	69K8 = **950-2645**	232K = **950-1207**
1K87 = **950-0995**	6K34 = **950-2670**	22K1 = **950-1185**	71K5 = **950-2742**	237K = **950-1223**
1K91 = **950-1002**	6K49 = **950-2688**	21K5 = **950-1134**	73K2 = **950-2769**	243K = **950-1266**
1K96 = **950-1010**	6K65 = **950-2696**	22K6 = **950-1193**	75K = **950-2785**	249K = **950-1282**
2K = **950-1479**	6K81 = **950-2718**	23K2 = **950-1240**	76K8 = **950-2807**	255K = **950-1320**
2K05 = **950-1487**	6K98 = **950-2726**	23K7 = **950-1258**	78K7 = **950-2823**	267K = **950-3161**
2K1 = **950-1495**	7K15 = **950-2831**	24K3 = **950-1304**	80K6 = **950-2890**	301K = **950-3170**
2K15 = **950-1509**	7K32 = **950-2840**	24K9 = **950-1312**	82K5 = **950-2912**	332K = **950-3188**
2K21 = **950-1517**	7K5 = **950-2858**	25K5 = **950-1347**	84K5 = **950-2939**	357K = **950-3196**
2K26 = **950-1525**	7K68 = **950-2866**	26K1 = **950-1371**	86K6 = **950-2955**	392K = **950-3200**
2K32 = **950-1533**	7K87 = **950-2874**	26K7 = **950-1380**	88K7 = **950-2971**	432K = **950-3218**
2K37 = **950-1541**	8K06 = **950-2980**	27K4 = **950-1401**	90K9 = **950-3048**	475K = **950-3226**
2K43 = **950-1550**	8K25 = **950-2998**	28K = **950-1436**	93K1 = **950-3064**	511K = **950-3234**
2K49 = **950-1568**	8K45 = **950-3005**	28K7 = **950-1444**	95K3 = **950-3080**	562K = **950-3269**
2K55 = **950-1576**	8K66 = **950-3013**	29K4 = **950-1460**	97K6 = **950-3102**	619K = **950-3293**
2K61 = **950-1584**	8K87 = **950-3021**	30K1 = **950-1665**	100K = **949-9857**	681K = **950-3323**
2K67 = **950-1592**	9K09 = **950-3110**	30K9 = **950-1673**	102K = **949-9873**	750K = **950-3366**
2K74 = **950-1606**	9K31 = **950-3129**	31K6 = **950-1690**	105K = **949-9890**	825K = **950-3382**
2K8 = **950-1614**	9K53 = **950-3137**	32K4 = **950-1711**	107K = **949-9911**	909K = **950-3412**
2K87 = **950-1622**	9K76 = **950-3145**	33K2 = **950-1738**	110K = **949-9970**	1M = **950-3153**
2K94 = **950-1630**	10K = **949-9938**			

These products are available to full documented release, upon request.

207176

	Price Each					
Order Code	1+	50+	100+	+	+	+
51R1 to 357K ●	1.64	1.39	1.30	– –	– –	– –
392K to 1M ●	2.28	– –	– –	– –	– –	– –

0.25 Watt ±0.5% ±50ppm/°C – RC55C

TT electronics Welwyn

- Leaded design with high temperature epoxy coating
- Fully approved to **BS9111 N001**

Power rating @ 70°C 0.125W (0.25W commercial) Voltage range 200V dc or ac rms
Temperature coefficient ±50ppm/°C Operating temperature -55°C to +155°C

Stocked in the following OHMIC Values:

=1,10 = **=1**	162R = **949-8222**	825R = **949-9695**	4K42 = **949-9318**	22K6 = **949-8591**
26R1 = **949-8699**	169R = **949-8249**	866R = **949-9725**	4K54 = **949-9326**	23K7 = **949-8621**
27R7 = **949-8737**	178R = **949-8290**	909R = **949-9776**	4K87 = **949-9334**	24K9 = **949-8656**
28R7 = **949-8770**	187R = **949-8320**	953R = **949-9806**	5K11 = **949-9466**	26K1 = **949-8680**
30R1 = **949-8907**	196R = **949-8354**	1K = **949-8389**	5K36 = **949-9474**	27K4 = **949-8729**
31R6 = **949-8940**	205R = **949-8524**	1K05 = **949-8370**	5K62 = **949-9482**	28K7 = **949-8761**
33R2 = **949-8982**	215R = **949-8559**	1K1 = **949-8400**	5K9 = **949-9490**	30K1 = **949-8893**
34R8 = **949-9024**	226R = **949-8583**	1K15 = **949-8397**	6K19 = **949-9580**	31K6 = **949-8931**
36R5 = **949-9059**	237R = **949-8613**	1K21 = **949-8419**	6K81 = **949-9598**	33K2 = **949-8974**
38R3 = **949-9083**	249R = **949-8648**	1K27 = **949-8427**	7K15 = **949-9660**	34K8 = **949-9016**
40R2 = **949-9172**	261R = **949-8672**	1K33 = **949-8435**	7K5 = **949-9679**	36K5 = **949-9040**
42R2 = **949-9202**	274R = **949-8710**	1K4 = **949-8451**	7K87 = **949-9687**	38K3 = **949-9075**
44R2 = **949-9237**	287R = **949-8753**	1K47 = **949-8443**	8K25 = **949-9750**	40K2 = **949-9164**
46R4 = **949-9261**	301R = **949-8885**	1K54 = **949-8460**	8K66 = **949-9768**	42K2 = **949-9199**
48R7 = **949-9296**	316R = **949-8923**	1K62 = **949-8478**	9K09 = **949-9830**	44K2 = **949-9229**
51R1 = **949-9369**	332R = **949-8966**	1K69 = **949-8486**	9K53 = **949-9849**	46K4 = **949-9253**
53R6 = **949-9393**	348R = **949-9008**	1K78 = **949-8494**	10K = **949-7994**	48K7 = **949-9288**
56R2 = **949-9423**	365R = **949-9032**	1K87 = **949-8508**	10K5 = **949-8001**	51K1 = **949-9350**
59R = **949-9458**	383R = **949-9067**	2K05 = **949-8788**	11K = **949-8044**	53K6 = **949-9385**
64R9 = **949-9547**	402R = **949-9156**	2K15 = **949-8796**	11K5 = **949-8052**	56K2 = **949-9415**
68R1 = **949-9571**	422R = **949-9180**	2K26 = **949-8800**	12K1 = **949-8109**	59K = **949-9440**
75R = **949-9644**	442R = **949-9210**	2K37 = **949-8818**	13K3 = **949-8133**	61K9 = **949-9512**
82R5 = **949-9717**	464R = **949-9245**	2K49 = **949-8826**	14K = **949-8168**	64K9 = **949-9539**
86R6 = **949-9741**	487R = **949-9270**	2K61 = **949-8834**	14K7 = **949-8176**	68K1 = **949-9563**
90R9 = **949-9792**	511R = **949-9342**	2K74 = **949-8842**	15K4 = **949-8206**	71K5 = **949-9610**
95R3 = **949-9822**	536R = **949-9377**	2K87 = **949-8850**	16K2 = **949-8257**	75K = **949-9636**
100R = **949-7978**	562R = **949-9407**	3K01 = **949-9091**	16K5 = **949-8265**	78K7 = **949-9652**
110R = **949-8028**	590R = **949-9431**	3K16 = **949-9105**	16K9 = **949-8273**	82K5 = **949-9709**
121R = **949-8079**	619R = **949-9504**	3K32 = **949-9113**	17K8 = **949-8303**	86K6 = **949-9733**
127R = **949-8095**	649R = **949-9520**	3K48 = **949-9121**	18K7 = **949-8338**	90K9 = **949-9784**
133R = **949-8125**	681R = **949-9555**	3K65 = **949-9130**	19K6 = **949-8362**	95K3 = **949-9814**
140R = **949-8150**	715R = **949-9601**	3K83 = **949-9148**	20K5 = **949-8532**	100K = **949-7960**
154R = **949-8192**	750R = **949-9628**	4K02 = **949-9300**	21K5 = **949-8567**	105K = **949-7986**

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products,
prices are subject to change without notice.

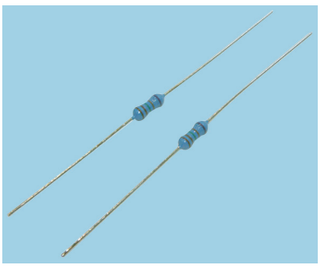
110K =	**949-8010**	140K =	**949-8141**	187K =	**949-8311**	237K =	**949-8605**	301K =	**949-8869**
115K =	**949-8036**	154K =	**949-8184**	196K =	**949-8346**	249K =	**949-8630**	316K =	**949-8915**
121K =	**949-8060**	162K =	**949-8214**	205K =	**949-8516**	261K =	**949-8664**	332K =	**949-8958**
127K =	**949-8087**	169K =	**949-8230**	215K =	**949-8540**	274K =	**949-8702**	348K =	**949-8990**
133K =	**949-8117**	178K =	**949-8281**	226K =	**949-8575**	287K =	**949-8745**		

207285

	Price Each				
Order Code	5+	50+	100+	500+	+
All Values ●	0.91	0.79	0.69	0.44	– –

0.25 Watt ±1% – YR1 Series

tyco/Electronics NEOHM



NEW

Metal film resistors have excellent stability under load and severe environmental conditions. They exhibit very low noise current and voltage coefficients. Precision metalfilm resistors are particularly suitable in all applications where long-term stability isimportant. Precision metal film resistors with tolerance to 0.1% and temperature coefficients to 15ppm.

L=10.0 Dia=3.5 Lead length=28.0 Lead dia=0.6
Supplied bandoliered on tape (box=1K PCS)

Power rating @ 70°C	0.25W	Operating temperature	-65°C to +155°C
Voltage rating	500V	Temperature coefficient	±15ppm/°C

Stocked in the following OHMIC Values:

10R =	**108-3036**	56R2 =	**108-3116**	316R =	**108-3197**	1K74 =	**108-3278**		
10R2 =	**108-3037**	57R6 =	**108-3117**	324R =	**108-3198**	1K82 =	**108-3279**		
10R5 =	**108-3038**	59R =	**108-3118**	332R =	**108-3199**	1K87 =	**108-3280**		
10R7 =	**108-3039**	60R4 =	**108-3121**	340R =	**108-3201**	1K91 =	**108-3281**		
11R =	**108-3040**	61R9 =	**108-3122**	348R =	**108-3202**	1K96 =	**108-3282**		
11R3 =	**108-3042**	63R4 =	**108-3123**	357R =	**108-3203**	2K =	**108-3283**		
11R5 =	**108-3043**	64R9 =	**108-3124**	365R =	**108-3204**	2K05 =	**108-3285**		
11R8 =	**108-3044**	66R5 =	**108-3125**	374R =	**108-3205**	2K1 =	**108-3286**		
12R1 =	**108-3045**	68R1 =	**108-3126**	383R =	**108-3206**	2K15 =	**108-3287**		
12R4 =	**108-3046**	69R8 =	**108-3127**	392R =	**108-3207**	2K21 =	**108-3288**		
12R7 =	**108-3047**	71R5 =	**108-3128**	402R =	**108-3208**	2K26 =	**108-3289**		
13R =	**108-3048**	73R2 =	**108-3129**	412R =	**108-3209**	2K32 =	**108-3290**		
13R3 =	**108-3049**	75R =	**108-3130**	422R =	**108-3210**	2K37 =	**108-3291**		
13R7 =	**108-3050**	76R8 =	**108-3131**	432R =	**108-3212**	2K43 =	**108-3292**		
14R =	**108-3051**	78R7 =	**108-3133**	442R =	**108-3213**	2K49 =	**108-3293**		
14R3 =	**108-3052**	80R6 =	**108-3134**	453R =	**108-3214**	2K55 =	**108-3294**		
14R7 =	**108-3054**	82R5 =	**108-3135**	464R =	**108-3215**	2K61 =	**108-3295**		
15R =	**108-3055**	84R5 =	**108-3136**	475R =	**108-3216**	2K67 =	**108-3297**		
15R4 =	**108-3056**	86R6 =	**108-3137**	487R =	**108-3217**	2K74 =	**108-3298**		
15R8 =	**108-3057**	88R7 =	**108-3138**	499R =	**108-3218**	2K8 =	**108-3299**		
16R2 =	**108-3058**	90R9 =	**108-3139**	511R =	**108-3219**	2K87 =	**108-3300**		
16R5 =	**108-3059**	93R1 =	**108-3140**	523R =	**108-3220**	2K94 =	**108-3304**		
16R9 =	**108-3060**	95R3 =	**108-3141**	536R =	**108-3221**	3K01 =	**108-3305**		
17R4 =	**108-3061**	97R6 =	**108-3142**	549R =	**108-3222**	3K09 =	**108-3306**		
17R8 =	**108-3062**	100R =	**108-3143**	562R =	**108-3224**	3K16 =	**108-3307**		
18R2 =	**108-3063**	102R =	**108-3145**	576R =	**108-3225**	3K24 =	**108-3308**		
18R7 =	**108-3064**	105R =	**108-3146**	590R =	**108-3226**	3K32 =	**108-3309**		
19R1 =	**108-3066**	107R =	**108-3147**	604R =	**108-3227**	3K4 =	**108-3310**		
19R6 =	**108-3067**	110R =	**108-3148**	619R =	**108-3228**	3K48 =	**108-3311**		
20R =	**108-3068**	113R =	**108-3149**	634R =	**108-3229**	3K57 =	**108-3312**		
20R5 =	**108-3069**	115R =	**108-3150**	649R =	**108-3230**	3K65 =	**108-3313**		
21R =	**108-3070**	118R =	**108-3151**	665R =	**108-3231**	3K74 =	**108-3315**		
21R5 =	**108-3071**	121R =	**108-3152**	681R =	**108-3232**	3K83 =	**108-3316**		
22R1 =	**108-3072**	125R =	**108-3153**	698R =	**108-3233**	3K92 =	**108-3317**		
22R6 =	**108-3073**	127R =	**108-3154**	715R =	**108-3234**	4K02 =	**108-3318**		
23R2 =	**108-3074**	1330R =	**108-3155**	732R =	**108-3236**	4K12 =	**108-3319**		
23R7 =	**108-3075**	133R =	**108-3157**	750R =	**108-3237**	4K22 =	**108-3320**		
24R3 =	**108-3076**	137R =	**108-3158**	768R =	**108-3238**	4K32 =	**108-3322**		
24R9 =	**108-3078**	140R =	**108-3159**	787R =	**108-3239**	4K42 =	**108-3323**		
25R5 =	**108-3079**	143R =	**108-3160**	806R =	**108-3240**	4K53 =	**108-3324**		
26R1 =	**108-3080**	147R =	**108-3161**	825R =	**108-3242**	4K64 =	**108-3325**		
26R7 =	**108-3081**	150R =	**108-3162**	845R =	**108-3243**	4K75 =	**108-3327**		
27R4 =	**108-3082**	154R =	**108-3163**	866R =	**108-3244**	4K87 =	**108-3328**		
28R =	**108-3083**	158R =	**108-3164**	887R =	**108-3245**	4K99 =	**108-3329**		
28R7 =	**108-3085**	162R =	**108-3165**	909R =	**108-3246**	5K11 =	**108-3330**		
29R4 =	**108-3086**	165R =	**108-3166**	931R =	**108-3248**	5K23 =	**108-3331**		
30R1 =	**108-3087**	169R =	**108-3167**	953R =	**108-3249**	5K36 =	**108-3332**		
30R9 =	**108-3088**	174R =	**108-3169**	976R =	**108-3250**	5K49 =	**108-3333**		
31R6 =	**108-3091**	178R =	**108-3171**	1K =	**108-3251**	5K62 =	**108-3334**		
32R4 =	**108-3092**	182R =	**108-3172**	1K02 =	**108-3252**	5K76 =	**108-3335**		
33R2 =	**108-3093**	187R =	**108-3173**	1K05 =	**108-3253**	5K9 =	**108-3336**		
34R =	**108-3094**	191R =	**108-3174**	1K07 =	**108-3254**	6K04 =	**108-3337**		
34R8 =	**108-3095**	196R =	**108-3175**	1K1 =	**108-3255**	6K19 =	**108-3339**		
35R7 =	**108-3096**	200R =	**108-3176**	1K13 =	**108-3256**	6K34 =	**108-3341**		
36R5 =	**108-3097**	205R =	**108-3177**	1K15 =	**108-3257**	6K49 =	**108-3342**		
37R4 =	**108-3098**	210R =	**108-3178**	1K18 =	**108-3258**	6K65 =	**108-3343**		
38R3 =	**108-3099**	215R =	**108-3179**	1K21 =	**108-3261**	6K81 =	**108-3344**		
39R2 =	**108-3100**	221R =	**108-3180**	1K24 =	**108-3262**	6K98 =	**108-3346**		
40R2 =	**108-3101**	226R =	**108-3182**	1K27 =	**108-3263**	7K15 =	**108-3347**		
41R2 =	**108-3102**	232R =	**108-3183**	1K3 =	**108-3264**	7K32 =	**108-3348**		
42R2 =	**108-3103**	237R =	**108-3184**	1K33 =	**108-3265**	7K5 =	**108-3349**		
43R2 =	**108-3104**	243R =	**108-3185**	1K37 =	**108-3266**	7K68 =	**108-3350**		
44R2 =	**108-3105**	249R =	**108-3186**	1K4 =	**108-3267**	7K87 =	**108-3352**		
45R3 =	**108-3106**	255R =	**108-3187**	1K43 =	**108-3268**	8K06 =	**108-3353**		
46R4 =	**108-3108**	261R =	**108-3188**	1K47 =	**108-3269**	8K25 =	**108-3354**		
47R5 =	**108-3109**	267R =	**108-3189**	1K5 =	**108-3270**	8K45 =	**108-3355**		
48R7 =	**108-3110**	274R =	**108-3190**	1K54 =	**108-3271**	8K66 =	**108-3356**		
49R9 =	**108-3111**	280R =	**108-3191**	1K58 =	**108-3273**	8K87 =	**108-3357**		
51R1 =	**108-3112**	287R =	**108-3192**	1K62 =	**108-3274**	9K09 =	**108-3358**		
52R3 =	**108-3113**	294R =	**108-3194**	1K65 =	**108-3275**	9K31 =	**108-3359**		
53R6 =	**108-3114**	301R =	**108-3195**	1K69 =	**108-3276**	9K53 =	**108-3360**		
54R9 =	**108-3115**	309R =	**108-3196**	1K74 =	**108-3277**	9K76 =	**108-3361**		

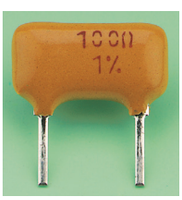
10K =	**108-3362**	32K4 =	**108-3416**	102K =	**108-3470**	324K =	**108-3526**
10K2 =	**108-3364**	33K2 =	**108-3418**	105K =	**108-3471**	332K =	**108-3528**
10K5 =	**108-3365**	34K =	**108-3419**	107K =	**108-3472**	340K =	**108-3529**
10K7 =	**108-3366**	34K8 =	**108-3420**	110K =	**108-3473**	348K =	**108-3530**
11K =	**108-3367**	35K7 =	**108-3421**	113K =	**108-3474**	357K =	**108-3531**
11K3 =	**108-3368**	36K5 =	**108-3422**	115K =	**108-3475**	365K =	**108-3532**
11K5 =	**108-3369**	37K4 =	**108-3423**	118K =	**108-3476**	374K =	**108-3534**
11K8 =	**108-3370**	38K3 =	**108-3424**	121K =	**108-3477**	383K =	**108-3535**
12K1 =	**108-3371**	39K2 =	**108-3425**	124K =	**108-3479**	392K =	**108-3536**
12K4 =	**108-3372**	40K2 =	**108-3426**	127K =	**108-3481**	402K =	**108-3537**
12K7 =	**108-3373**	41K2 =	**108-3427**	130K =	**108-3482**	412K =	**108-3538**
13K =	**108-3374**	42K2 =	**108-3428**	133K =	**108-3483**	422K =	**108-3539**
13K3 =	**108-3376**	43K2 =	**108-3431**	137K =	**108-3484**	432K =	**108-3540**
13K7 =	**108-3377**	44K2 =	**108-3432**	140K =	**108-3485**	442K =	**108-3541**
14K =	**108-3378**	45K3 =	**108-3433**	143K =	**108-3486**	453K =	**108-3542**
14K3 =	**108-3379**	46K4 =	**108-3434**	147K =	**108-3487**	464K =	**108-3543**
14K7 =	**108-3380**	47K5 =	**108-3435**	150K =	**108-3488**	475K =	**108-3544**
15K =	**108-3381**	48K7 =	**108-3436**	154K =	**108-3489**	487K =	**108-3546**
15K4 =	**108-3382**	49K9 =	**108-3437**	158K =	**108-3490**	499K =	**108-3547**
15K8 =	**108-3383**	51K1 =	**108-3438**	162K =	**108-3492**	511K =	**108-3548**
16K2 =	**108-3384**	52K3 =	**108-3439**	165K =	**108-3493**	523K =	**108-3549**
16K5 =	**108-3385**	53K6 =	**108-3440**	169K =	**108-3494**	536K =	**108-3550**
16K9 =	**108-3386**	54K9 =	**108-3441**	174K =	**108-3495**	549K =	**108-3551**
17K4 =	**108-3388**	56K2 =	**108-3443**	178K =	**108-3496**	562K =	**108-3552**
17K8 =	**108-3389**	57K6 =	**108-3444**	182K =	**108-3497**	576K =	**108-3553**
18K2 =	**108-3390**	59K =	**108-3445**	187K =	**108-3499**	590K =	**108-3554**
18K7 =	**108-3391**	60K4 =	**108-3446**	191K =	**108-3500**	604K =	**108-3555**
19K1 =	**108-3392**	61K9 =	**108-3447**	196K =	**108-3501**	619K =	**108-3556**
19K6 =	**108-3393**	63K4 =	**108-3448**	200K =	**108-3502**	634K =	**108-3558**
20K =	**108-3394**	64K9 =	**108-3449**	205K =	**108-3503**	649K =	**108-3559**
20K5 =	**108-3395**	66K5 =	**108-3450**	210K =	**108-3504**	665K =	**108-3560**
21K =	**108-3396**	68K1 =	**108-3451**	215K =	**108-3505**	681K =	**108-3561**
21K5 =	**108-3397**	69K8 =	**108-3452**	221K =	**108-3506**	698K =	**108-3562**
22K1 =	**108-3398**	71K5 =	**108-3453**	226K =	**108-3507**	715K =	**108-3563**
22K6 =	**108-3400**	73K2 =	**108-3455**	232K =	**108-3509**	732K =	**108-3564**
23K2 =	**108-3401**	75K =	**108-3456**	237K =	**108-3511**	750K =	**108-3565**
23K7 =	**108-3402**	76K8 =	**108-3457**	243K =	**108-3512**	768K =	**108-3566**
24K3 =	**108-3403**	78K7 =	**108-3458**	249K =	**108-3513**	787K =	**108-3567**
24K9 =	**108-3404**	80K6 =	**108-3459**	255K =	**108-3514**	806K =	**108-3568**
25K5 =	**108-3406**	82K5 =	**108-3460**	261K =	**108-3515**	825K =	**108-3571**
26K1 =	**108-3407**	84K5 =	**108-3461**	267K =	**108-3517**	845K =	**108-3572**
26K7 =	**108-3408**	86K6 =	**108-3462**	274K =	**108-3518**	866K =	**108-3573**
27K4 =	**108-3409**	88K7 =	**108-3463**	280K =	**108-3519**	887K =	**108-3574**
28K =	**108-3410**	90K9 =	**108-3464**	287K =	**108-3520**	909K =	**108-3575**
28K7 =	**108-3411**	93K1 =	**108-3465**	294K =	**108-3522**	931K =	**108-3576**
29K4 =	**108-3412**	95K3 =	**108-3467**	301K =	**108-3523**	953K =	**108-3577**
30K1 =	**108-3413**	97K6 =	**108-3468**	309K =	**108-3524**	976K =	**108-3578**
30K9 =	**108-3414**	100K =	**108-3469**	316K =	**108-3525**	1M =	**108-3579**
31K6 =	**108-3415**						

423680

	Price Each			
Order Code	5+	25+	100+	500+
All Values ●	2.22	1.95	1.53	1.32

0.5 Watt ±0.02% - CNS020 Series

VISHAY



- High stability nichrome thin film technology
- Compact case size
- Close tolerance, low temperature coefficient
- Recommended for high resistance values

H = 6.62, W = 8.1, D = 2.54
Lead pitch = 5.08, Lead size = 0.508 x 0.254

Power rating @ 70°C	0.5W	Temperature coefficient	±10ppm/°C
Resistance tolerance	±0.02%	Max. working voltage	300V
Operating temperature	-55°C to +155°C		

207302

		Price Each				
Value	**Order Code**	1+	5+	10+	25+	+
250K	**116-5202**●	17.37	16.07	15.12	10.87	– –
500K	**116-5204**●	19.13	17.67	16.70	11.97	– –
1M	**116-5205**●	21.79	20.03	18.96	13.61	– –
2M	**116-5206**●	26.11	24.03	22.74	16.29	– –
5M	**116-5207**●	26.11	24.03	22.74	16.60	– –
10M	**116-5208**●	34.83	32.10	30.27	21.74	– –

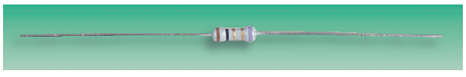
Metal Film Fusible

Fusible resistors designed to meet the safety requirements of power supply, measurement, control and audio/video equipment where protection against overload is required. The resistors become open circuit within a certain range of overload without the risk of fire.

228311

0.33 Watt ±5% – NFR25 Series

Phoenix



L=6.5 max, Dia=2.5 max.
Lead length=26 nom, Lead dia.=0.6
Supplied bandoliered on tape (box=1K pcs)

- Leaded fusible resistor
- Coated in grey flame retardant lacquer
- Resistant to cleaning solvents according to **MIL STD 202E method 215** and **IEC 68-2-45**

RoHS ● Compliant ◀ Non-compliant ‡ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

Power rating @ 70°C 0.33W
Temperature coefficient ±100ppm/°C (1R to 10R=200 ppm/°C)
Voltage rating 250V ac
Operating temperature -55°C to +155°C

Stocked in the following OHMIC Values:

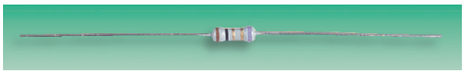
1R = **947-3939**	10R = **947-3912**	100R = **947-3890**	1K = **947-3920**	4K7 = **947-4005**
2R2 = **947-3971**	22R = **947-3955**	220R = **947-3947**	2K2 = **947-3963**	10K = **947-3904**
4R7 = **947-4013**	47R = **947-3998**	470R = **947-3980**		

207430

Order Code	Price Each 10+	300+	3K+	10K+	+
All Values ●	0.28	0.19	0.15	0.09	– –

0.5W ±5% – NFR25H Series

Phoenix



L=6.5, Dia=2.5 max
Lead length=26 nom, Lead dia=0.6
Supplied bandoliered on tape (box=1K pcs)

- Leaded fusible resistor
- Coated in grey flame retardant lacquer
- Resistant to cleaning solvents according to **MIL STD 202E method 215** and **IEC 68-2-45**

Power rating @ 70°C 0.5W
Voltage rating 350V ac
Operating temperature -55°C to +155°C
Temperature coefficient ±100ppm/°C (1R to 4R7=±200ppm/°C)

Stocked in the following OHMIC Values:

1R = **947-4048**	4R7 = **947-4080**	22R = **947-4056**	100R = **947-4021**
2R2 = **947-4064**	10R = **947-4030**	47R = **947-4072**	

207428

Order Code	Price Each 10+	300+	3K+	10K+	+
All Values ●	0.35	0.26	0.18	0.12	– –

Metal Glazed

0.25 Watt ±5% – HVR25 Series

Phoenix

Offering high resistance, good stability and reliability at high voltage. Meets safety requirements of **IEC65.**

L=6.5 max, Dia=2.5 max
Lead length=26 nom, Lead dia=0.6
Supplied bandoliered on tape (box=1K pcs)

Power rating @ 70°C 0.25W
Voltage rating 1150V ac or 1600V dc
Operating temperature -55°C to +155°C
Temperature coefficient ±250ppm/°C

Stocked in the following OHMIC Values:

1M2 = **947-7152**	2M2 = **947-7187**	3M9 = **947-7217**	6M8 = **947-7241**
1M5 = **947-7160**	2M7 = **947-7195**	4M7 = **947-7225**	8M2 = **947-7250**
1M8 = **947-7179**	3M3 = **947-7209**	5M6 = **947-7233**	10M = **947-7144**

207179

Order Code	Price Each 10+	300+	3K+	10K+	+
All Values ●	0.37	0.26	0.20	0.16	– –

0.5 Watt ±5% – HVR37 Series

Phoenix

L=10 max, Dia=3.7 max
Lead length=26 nom, Lead dia=0.7
Supplied bandoliered on tape (box=1K pcs)

- **BS415** safety approved for mains equipment.
- **UL** Approved

Power rating @ 70°C 0.5W
Voltage rating 2500V ac or 3500V dc
Operating temperature -55°C to +155°C
Temperature coefficient ±250ppm/°C

Stocked in the following OHMIC Values:

1M2 = **947-7284**	2M2 = **947-7322**	3M9 = **947-7365**	6M8 = **947-7390**	15M = **947-7276**
1M5 = **947-7292**	2M7 = **947-7330**	4M7 = **947-7373**	8M2 = **947-7403**	22M = **947-7314**
1M8 = **947-7306**	3M3 = **947-7357**	5M6 = **947-7381**	10M = **947-7268**	33M = **947-7349**

207409

Order Code	Price Each 10+	300+	3K+	10K+	+
All Values ●	0.49	0.35	0.27	0.24	– –

High Precision Wirewound

0.2 Watt ±0.1% – 5E10D Series

RHOPOINT COMPONENTS

L=7.94, Dia.=3.97, Lead length=38 nom., Lead dia.=0.51

- High precision epoxy sealed non-inductive wire wound resistors.
- Ideal for all analogue measuring and reference applications.

Power rating @ 85°C 0.2W
Max. voltage 175V dc or ac peak
Operating temperature -55°C to +125°C
Temperature coefficient ±3ppm 0°C to +85°C, ±5ppm -55°C to +125°C
Thermal e.m.f <0.2µV/°C
Full load stability ±35ppm/10,000 hrs, ±50ppm/26,000 hrs
No load stability (-55°C to +125°C) ±25ppm/10,000 hrs, ±35ppm/26,000 hrs

Stocked in the following OHMIC Values:

120R = **962-1938**	50R = **962-2136**	1K = **962-2160**	10K = **962-2187**
350R = **962-1946**	100R = **962-2144**	5K = **962-2179**	100K = **962-2195**
10R = **962-2128**	250R = **962-2152**		

207223

Order Code	Price Each 1+	25+	50+	100+	+
All Values	11.96	10.46	9.89	7.18	– –

0.33 Watt ±0.1% – 8E16D Series

RHOPOINT COMPONENTS

L=12.7, Dia=6.35, Lead length=38 nom, Lead dia=0.64

- High precision epoxy sealed non-inductive wire wound resistors
- Ideal for all analogue measuring and reference applications.

Power rating @ 85°C 0.33W
Temperature coefficient ±3ppm 0°C to +85°C, ±5ppm -55°C to +125°C
Thermal e.m.f <0.2µV/°C
Max. voltage 175V dc or ac peak
Full load stability ±35ppm/10,000 hrs, ±50ppm/26,000hrs
No load stability (-55°C to 125°C) ±25ppm/10,000 hrs, ±35ppm/26,000hrs
Operating temperature -55°C to +125°C

Stocked in the following OHMIC Values:

10R = **962-1954**	120R = **962-1997**	2K = **962-2039**	200R = **962-2063**	40K = **962-2098**
20R = **962-1962**	250R = **962-2004**	5K = **962-2047**	350R = **962-2071**	50K = **962-2101**
50R = **962-1970**	500R = **962-2012**	10K = **962-2055**	20K = **962-2080**	100K = **962-2110**
100R = **962-1989**	1K = **962-2020**			

207164

Order Code	Price Each 1+	25+	50+	100+	+
Values 10R to 50R ●	12.48	11.56	11.34	8.22	– –
Values 100R to 100K ●	10.88	10.05	9.83	7.18	– –

Vitreous Enamel Wirewound

3 Watt – W21 Series

TT electronics Welwyn

L=12.7, Dia=5.6, Lead length=22 min, Lead dia=0.8

High stability and reliability resistors, offering high power and resistance in a small size. Suitable for use in harsh environments.

- Fully approved to styles J **BS9114-N001** and JB **CECC 40 201-002**
- Available with **BS-CECC** release.

Power rating @ 25°C 3W
Power rating @ 70°C 2.5W
Resistance tolerance ±5%
Voltage rating 100V
Operating temperature -55°C to +350°C
Temperature coefficient max ±75ppm/°C

Stocked in the following OHMIC Values:

0R1 = **950-3463**	2R = **950-3889**	24R = **950-3811**	180R = **950-3676**	1K = **950-3692**
0R12 = **950-3471**	2R2 = **950-3897**	27R = **950-3838**	200R = **950-3773**	1K2 = **950-3706**
0R15 = **950-3480**	2R4 = **950-3900**	33R = **950-3951**	220R = **950-3781**	1K5 = **950-3714**
0R18 = **950-3498**	2R7 = **950-3919**	30R = **950-3935**	240R = **950-3803**	1K8 = **950-3722**
0R2 = **950-3501**	3R = **950-4010**	39R = **950-3978**	270R = **950-3820**	2K = **950-3846**
0R27 = **950-3528**	3R3 = **950-4028**	43R = **950-4052**	300R = **950-3927**	2K2 = **950-3854**
0R22 = **950-3510**	3R9 = **950-4036**	47R = **950-4079**	330R = **950-3943**	2K4 = **950-3862**
0R33 = **950-3536**	4R7 = **950-4095**	50R = **950-4117**	390R = **950-3960**	2K7 = **950-3870**
0R39 = **950-3544**	5R = **950-4184**	51R = **950-4133**	430R = **950-4044**	3K = **950-3986**
0R47 = **950-3552**	5R1 = **950-4192**	56R = **950-4150**	470R = **950-4060**	3K3 = **950-3994**
0R5 = **950-3560**	5R6 = **950-4206**	62R = **950-4222**	500R = **950-4109**	3K9 = **950-4001**
0R51 = **950-3579**	6R8 = **950-4265**	68R = **950-4249**	510R = **950-4125**	4K7 = **950-4087**
0R56 = **950-3587**	8R2 = **950-4320**	75R = **950-4281**	560R = **950-4141**	5K1 = **950-4168**
0R68 = **950-3595**	10R = **950-3625**	82R = **950-4303**	620R = **950-4214**	5K6 = **950-4176**
1R = **950-3730**	12R = **950-3641**	91R = **950-4346**	680R = **950-4230**	6K8 = **950-4257**
1R2 = **950-3749**	15R = **950-3668**	100R = **950-3609**	750R = **950-4273**	8K2 = **950-4311**
1R5 = **950-3757**	18R = **950-3684**	120R = **950-3633**	820R = **950-4290**	10K = **950-3617**
1R8 = **950-3765**	22R = **950-3790**	150R = **950-3650**	910R = **950-4338**	

207162

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

Order Code	Price Each 1+	25+	100+	+	+
Values 0R1 to 1R ●	1.33	1.26	1.13	– –	– –
Values 1R2 to 1K5 ●	1.14	1.08	0.97	– –	– –
Values 1K8 to 4K7 ●	1.32	1.25	1.02	– –	– –
Values 5K1 to 10K ●	1.93	1.83	1.64	– –	– –

7 Watt – W22 Series

TT electronics Welwyn

L=22.2, Dia=8.0, Lead length=23 min, Lead dia=0.8

- Fully approved to styles K **BS9114-N001** and KB **CECC40 201-002**
- Available with **BS-CECC** release.

Power rating @ 25°C	7W	Voltage rating	200V
Power rating @ 70°C	6W	Operating temperature	-55°C to +350°C
Resistance tolerance	±5%	Temperature coefficient max	±75ppm/°C

Stocked in the following OHMIC Values:

0R1 = **950-4354**	2R2 = **950-4834**	30R = **950-4869**	240R = **950-4745**	2K4 = **950-4800**
0R12 = **950-4362**	2R7 = **950-4842**	33R = **950-4885**	270R = **950-4761**	2K7 = **950-4818**
0R15 = **950-4370**	3R3 = **950-4966**	39R = **950-4915**	300R = **950-4850**	3K = **950-4923**
0R18 = **950-4389**	3R9 = **950-4974**	47R = **950-4990**	330R = **950-4877**	3K3 = **950-4931**
0R22 = **950-4397**	4R7 = **950-5016**	51R = **950-5032**	360R = **950-4893**	3K9 = **950-4958**
0R27 = **950-4400**	5R = **950-5083**	56R = **950-5059**	390R = **950-4907**	4K7 = **950-5008**
0R33 = **950-4419**	5R1 = **950-5091**	62R = **950-5113**	470R = **950-4982**	5K1 = **950-5067**
0R39 = **950-4427**	5R6 = **950-5105**	68R = **950-5130**	510R = **950-5024**	5K6 = **950-5075**
0R47 = **950-4435**	6R8 = **950-5156**	75R = **950-5172**	560R = **950-5040**	6K8 = **950-5148**
0R5 = **950-4443**	8R2 = **950-5229**	82R = **950-5202**	680R = **950-5121**	7K5 = **950-5180**
0R51 = **950-4451**	10R = **950-4508**	91R = **950-5237**	750R = **950-5164**	8K2 = **950-5210**
0R56 = **950-4460**	12R = **950-4532**	100R = **950-4486**	820R = **950-5199**	9K1 = **950-5245**
0R68 = **950-4478**	15R = **950-4575**	120R = **950-4516**	1K = **950-4613**	10K = **950-4494**
1R = **950-4656**	18R = **950-4605**	130R = **950-4540**	1K2 = **950-4621**	12K = **950-4524**
1R2 = **950-4664**	20R = **950-4710**	150R = **950-4559**	1K5 = **950-4630**	15K = **950-4567**
1R5 = **950-4672**	22R = **950-4737**	180R = **950-4583**	1K8 = **950-4648**	18K = **950-4591**
1R8 = **950-4680**	24R = **950-4753**	200R = **950-4699**	2K = **950-4788**	20K = **950-4702**
2R = **950-4826**	27R = **950-4770**	220R = **950-4729**	2K2 = **950-4796**	

Mftrs. List No. W22 + OHMIC Value

207252

Order Code	Price Each 1+	25+	100+	+	+
Values OR1 to 1R ●	1.32	1.25	1.12	– –	– –
Values 1R2 to 2K4 ●	1.15	1.09	0.98	– –	– –
Values 2K7 to 5K1 ●	1.41	1.34	1.20	– –	– –
Values 5K6 to 20K ●	1.65	1.57	1.42	– –	– –

10 Watt – W23 Series

TT electronics Welwyn

L=38.1, Dia=8.0, Lead length=15 min, Lead dia=0.8

- Fully approved to styles L **BS9114-N001** and LB **CECC 40 201-002**
- Available with **BS-CECC** release.

Power rating @ 25°C	10W	Voltage Rating	500V
Power rating @ 70°C	9W	Operating temperature	-55°C to +350°C
Resistance tolerance	±5%	Temperature coefficient max	±75ppm/°C

Stocked in the following OHMIC Values:

0R47 = **950-5253**	15R = **950-5326**	330R = **950-5423**	4K7 = **950-5490**
0R68 = **950-5261**	22R = **950-5393**	470R = **950-5466**	6K8 = **950-5539**
1R = **950-5350**	33R = **950-5440**	680R = **950-5512**	10K = **950-5288**
1R5 = **950-5369**	47R = **950-5482**	1K = **950-5334**	15K = **950-5318**
2R2 = **950-5415**	68R = **950-5520**	1K5 = **950-5342**	22K = **950-5385**
4R7 = **950-5504**	100R = **950-5270**	2K2 = **950-5407**	33K = **950-5431**
6R8 = **950-5547**	150R = **950-5300**	3K3 = **950-5458**	47K = **950-5474**
10R = **950-5296**	220R = **950-5377**		

Mftrs. List No. W23 + OHMIC Value

207178

Order Code	Price Each 1+	25+	100+	+	+
Values OR1 to 1R ●	1.65	1.57	1.41	– –	– –
Values 1R2 to 2K4 ●	1.65	1.57	1.41	– –	– –
Values 2K7 to 5K1 ●	2.15	1.86	1.63	– –	– –
Values 5K6 to 20K ●	2.37	2.25	1.65	– –	– –
Values 22K to 47K ●	2.37	2.25	1.65	– –	– –

14 Watt – W24 Series

TT electronics Welwyn

L=53.5, Dia=8.0, Lead length=30 min, Lead dia=0.88

- Fully approved to styles M **BS9114-N001** and MB **CECC 40 201-002**
- Available with **BS-CECC** release.

Power rating @ 25°C	14W	Voltage rating	750V
Power rating @ 70°C	12W	Operating temperature	-55°C to +350°C
Resistance tolerance	±5%	Temperature coefficient	±75ppm/°C

Stocked in the following OHMIC Values:

1R = **950-5601**	22R = **950-5636**	470R = **950-5660**	10K = **950-5571**
2R = **950-5652**	47R = **950-5687**	1K = **950-5598**	22K = **950-5628**
4R7 = **950-5709**	100R = **950-5563**	2K2 = **950-5644**	47K = **950-5679**
10R = **950-5580**	220R = **950-5610**	4K7 = **950-5695**	100K = **950-5555**

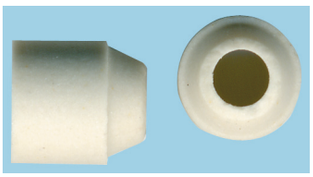
Mftrs. List No. W24 + OHMIC Value

207177

Order Code	Price Each 1+	25+	100+	+	+
Values 1R to 4.7R ●	2.46	2.05	1.82	– –	– –
Values 10R to 4.7kR ●	1.86	1.77	1.60	– –	– –
Values 10kR to 47kR ●	3.78	3.59	2.76	– –	– –
100kR ●	3.78	3.59	2.93	– –	– –

Ceramic Spacers

multicomp



- High working temperature
- High voltage insulator
- Used for supporting high power components
- Suitable for bore sizes up to 2 mm (height = 5mm)
- Sold in packs of 50

388645

Order Code	Price per pack 1+	5+
891-9275	9.80	7.88

RWM 4 x 10 Series - 3 Watt

VISHAY

NEW

- High dissipation
- High reliability level
  - — Fire proof
  - — Excellent Endurance
  - — Good environmental protection
  - — Conformal vitreous enamel - All welded construction
- Low ohmic values

Power rating @ 70°C	3W	Operating temperature	-55°C to +350°C
Resistance tolerance	±5%	Temperature coefficient max	±75ppm/°C
Voltage rating	120V		

Stocked in the following OHMIC Values:

0R1 = **110-9189**	2R2 = **110-9211**	47R = **110-9233**	560R = **110-9256**
0R12 = **110-9190**	2R7 = **110-9213**	51R = **110-9234**	620R = **110-9257**
0R15 = **110-9191**	3R = **110-9214**	56R = **110-9235**	680R = **110-9258**
0R18 = **110-9192**	3R3 = **110-9215**	62R = **110-9237**	750R = **110-9259**
0R2 = **110-9193**	3R9 = **110-9216**	68R = **110-9238**	820R = **110-9260**
0R22 = **110-9195**	4R7 = **110-9217**	75R = **110-9239**	1K = **110-9262**
0R27 = **110-9196**	5R1 = **110-9218**	82R = **110-9240**	1K2 = **110-9263**
0R33 = **110-9197**	5R6 = **110-9219**	91R = **110-9241**	1K5 = **110-9264**
0R39 = **110-9198**	6R8 = **110-9220**	100R = **110-9242**	1K8 = **110-9265**
0R47 = **110-9199**	7R5 = **110-9221**	120R = **110-9243**	2K = **110-9266**
0R5 = **110-9201**	8R2 = **110-9222**	150R = **110-9244**	2K2 = **110-9267**
0R51 = **110-9202**	10R = **110-9223**	180R = **110-9245**	2K7 = **110-9268**
0R56 = **110-9203**	12R = **110-9225**	200R = **110-9246**	3K = **110-9269**
0R68 = **110-9204**	15R = **110-9226**	220R = **110-9247**	3K3 = **110-9270**
0R82 = **110-9205**	18R = **110-9227**	240R = **110-9249**	3K9 = **110-9271**
1R = **110-9206**	22R = **110-9228**	270R = **110-9251**	4K7 = **110-9272**
1R2 = **110-9207**	27R = **110-9229**	330R = **110-9252**	5K6 = **110-9274**
1R5 = **110-9208**	30R = **110-9230**	390R = **110-9253**	6K8 = **110-9275**
1R8 = **110-9209**	33R = **110-9231**	470R = **110-9254**	8K2 = **110-9276**
2R = **110-9210**	39R = **110-9232**	510R = **110-9255**	10K = **110-9277**

423404

Order Code	Price Each 5+	100+	250+	500+	+
Values OR1 to 4K7 ●	1.66	1.40	1.33	1.27	– –
Values 5K6 to 10K ●	2.34	1.99	1.86	1.69	– –

RWM 6 x 22 Series - 7 Watt

VISHAY

NEW

- High dissipation
- High reliability level
  - — Fire proof
  - — Excellent Endurance
  - — Good environmental protection
  - — Conformal vitreous enamel - All welded construction
- Low ohmic values

RoHS ● Compliant ◄ Non-compliant ‡ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

Power rating @ 70°C	7W	Operating temperature	-55°C to +350°C
Resistance tolerance	±5%	Temperature coefficient max	±75ppm/°C
Voltage rating	350V		

Stocked in the following OHMIC Values:

0R1 = **110-9278**	2R2 = **110-9298**	51R = **110-9318**	820R = **110-9337**
0R12 = **110-9279**	2R7 = **110-9299**	56R = **110-9319**	1K = **110-9338**
0R15 = **110-9280**	3R3 = **110-9300**	68R = **110-9320**	1K2 = **110-9341**
0R18 = **110-9281**	3R9 = **110-9301**	82R = **110-9321**	1K5 = **110-9342**
0R22 = **110-9282**	4R7 = **110-9302**	100R = **110-9322**	1K8 = **110-9343**
0R27 = **110-9283**	5R1 = **110-9304**	120R = **110-9323**	2K = **110-9344**
0R33 = **110-9284**	5R6 = **110-9305**	150R = **110-9324**	2K2 = **110-9345**
0R39 = **110-9286**	6R8 = **110-9306**	180R = **110-9325**	2K7 = **110-9346**
0R47 = **110-9287**	8R2 = **110-9307**	200R = **110-9326**	3K3 = **110-9347**
0R5 = **110-9288**	10R = **110-9308**	220R = **110-9328**	3K9 = **110-9348**
0R51 = **110-9289**	12R = **110-9309**	270R = **110-9329**	4K7 = **110-9349**
0R56 = **110-9290**	15R = **110-9310**	300R = **110-9330**	5K6 = **110-9350**
0R82 = **110-9291**	18R = **110-9311**	330R = **110-9331**	6K8 = **110-9351**
1R = **110-9292**	22R = **110-9312**	390R = **110-9332**	8K2 = **110-9353**
1R2 = **110-9293**	27R = **110-9313**	470R = **110-9333**	10K = **110-9354**
1R5 = **110-9294**	33R = **110-9314**	560R = **110-9334**	12K = **110-9355**
1R8 = **110-9295**	39R = **110-9316**	680R = **110-9335**	15K = **110-9356**
2R = **110-9296**	47R = **110-9317**	750R = **110-9336**	18K = **110-9357**

423416

Order Code	Price Each 5+	100+	250+	500+	+
Values 0R1 to 8K2 ●	1.89	1.63	1.50	1.40	– –
Values 10K to 18K ●	2.21	1.92	1.79	1.66	– –

RWM 6 x 34 Series - 8 Watt

VISHAY

NEW

- High dissipation
- High reliability level
  - — Fire proof
  - — Excellent Endurance
  - — Good environmental protection
  - — Conformal vitreous enamel - All welded construction
- Low ohmic values

Power rating @ 70°C	8W	Operating temperature	-55°C to +350°C
Resistance tolerance	±5%	Temperature coefficient max	±75ppm/°C
Voltage rating	500V		

Stocked in the following OHMIC Values:

0R33 = **111-2034**	6R8 = **111-2043**	150R = **111-2051**	3K3 = **111-2060**
0R47 = **111-2035**	10R = **111-2044**	220R = **111-2052**	4K7 = **111-2061**
0R68 = **111-2036**	15R = **111-2045**	330R = **111-2054**	6K8 = **111-2062**
1R = **111-2037**	22R = **111-2046**	470R = **111-2055**	10K = **111-2063**
1R5 = **111-2038**	33R = **111-2047**	680R = **111-2056**	15K = **111-2064**
2R2 = **111-2039**	47R = **111-2048**	1K = **111-2057**	22K = **111-2066**
3R3 = **111-2040**	68R = **111-2049**	1K5 = **111-2058**	33K = **111-2067**
4R7 = **111-2042**	100R = **111-2050**	2K2 = **111-2059**	

423419

Order Code	Price Each 5+	50+	250+	500+	+
Values 0R33 to 2R2 ●	2.25	2.05	1.89	1.63	– –
Values 3R3 to 4K7 ●	1.89	1.69	1.56	1.30	– –
Values 6K8 to 33K ●	2.67	2.25	2.15	1.89	– –

RWM 8 x 45 Series - 11 Watt

VISHAY

NEW

- High dissipation
- High reliability level
  - — Fire proof
  - — Excellent Endurance
  - — Good environmental protection
  - — Conformal vitreous enamel - All welded construction
- Low ohmic values

Power rating @ 70°C	11W	Operating temperature	-55°C to +350°C
Resistance tolerance	±5%	Temperature coefficient max	±75ppm/°C
Voltage rating	650V		

Stocked in the following OHMIC Values:

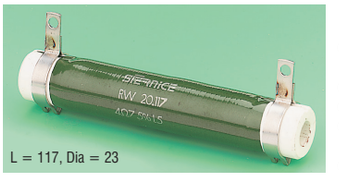
0R47 = **111-2068**	10R = **111-2076**	220R = **111-2085**	4K7 = **111-2095**
0R68 = **111-2069**	15R = **111-2078**	330R = **111-2086**	6K8 = **111-2096**
1R = **111-2070**	22R = **111-2079**	470R = **111-2087**	10K = **111-2097**
1R5 = **111-2071**	33R = **111-2080**	680R = **111-2088**	15K = **111-2098**
2R2 = **111-2072**	47R = **111-2081**	1K = **111-2091**	22K = **111-2099**
3R3 = **111-2073**	68R = **111-2082**	1K5 = **111-2092**	33K = **111-2100**
4R7 = **111-2074**	100R = **111-2083**	2K2 = **111-2093**	47K = **111-2101**
6R8 = **111-2075**	150R = **111-2084**	3K3 = **111-2094**	62K = **111-2102**

423423

Order Code	Price Each 5+	50+	250+	500+	+
Values 0R47 to 4R7 ●	2.70	2.44	2.31	2.18	– –
Values 6R8 to 2K2 ●	2.54	2.38	2.25	2.08	– –
Values 3K3 to 62K ●	4.07	3.65	3.45	3.22	– –

72 Watt – RW Series

VISHAY



- Tubular ceramic vitreous enamel coated wirewound resistors
- High power rating
- Meet **NF C 93-214** specifications
- High mechanical strength and endurance
- AN collar connections

Power rating @ 25°C	72W	Limiting element voltage	1100V rms
Resistance tolerance	±5%	Operating temperature	-55°C to +450°C
Temperature coefficient	±75ppm/°C		

Stocked in the following OHMIC Values:

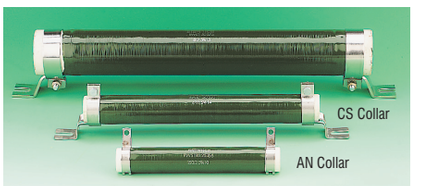
4R7 = **114-1251**	47R = **114-1253**	470R = **114-1255**	4K7 = **114-1257**
10R = **114-1252**	100R = **114-1254**	1K = **114-1256**	10K = **114-1258**

207332

Order Code	Price Each 1+	10+	+	+	+
Values 4R7 to 4K7 ●	32.00	27.20	– –	– –	– –
Values 10K ●	32.00	27.20	– –	– –	– –
	2+	**10+**	**+**	**+**	**+**
2EHN Mtg bracket **121-3372** ●	2.63	2.42	– –	– –	– –

160, 280 & 700Watt – RWST Series

VISHAY



160W L=168, Dia.=28 (Body). CS fixing centres=199, slot width=6.5
280W L=250, Dia.=33 (Body). CS fixing centres=287, slot width=9.0
700W L=373, Dia.=53 (Body). CS fixing centres=405, slot width=9.0

- Tubular ceramic vitreous enamel coated wirewound resistors
- Designed to withstand severe stop/start overloads
- High power rating
- High mechanical strength and endurance
- AN or CS collar connections

160 Watt

Power rating (Pr) @ 25°C	160W	Limiting element voltage	1900Vrms
Overload power rating	10xPr for 5 secs	Temperature coefficient	±75ppm/°C
Resistance tolerance	±5%	Operating temperature	-55°C to +450°C

Stocked in the following OHMIC Values :

AN collar

4R7 = **114-1274**10R = **114-1275**47R = **114-1276**470R = **114-12771**K = **114-1278**

CS collar

4R7 = **114-1261** 47R = **114-1262** 470R = **114-1263** 47K = **114-1264** 100K = **114-1265**

Style	Order Code	Price Each 1+	10+	+	+	+
AN collar						
	Values 4R7 to 100R ●	72.00	63.84	– –	– –	– –
	Values 470R to 10K ●	72.00	62.08	– –	– –	– –
CS collar						
	Values 4R7 to 100R ●	72.00	62.96	– –	– –	– –
	Values 470R to 10K ●	72.00	62.08	– –	– –	– –
	Values 47K to 100K ●	88.00	74.80	– –	– –	– –

280 Watt

Power rating (Pr) @ 25°C	280W	Limiting element voltage	2000Vrms
Overload power rating	10xPr for 5 secs	Temperature coefficient	±75ppm/°C
Resistance tolerance	±5%	Operating temperature	-55°C to +450°C

Stocked in the following OHMIC Values :

AN collar

1K = **114-1278**

CS collar

4R7 = **114-1266** 100R = **114-1267** 4K7 = **114-1268** 10K = **114-1269** 100K = **114-1270**

Style	Order Code	Price Each 1+	10+	+	+	+
AN collar						
	Values 470R to 10K ●	99.00	84.15	– –	– –	– –
CS collar						
	Values 4R7 to 100R ●	91.37	79.91	– –	– –	– –
	Values 470R to 10K ●	99.00	84.15	– –	– –	– –
	Values 47K to 100K ●	105.00	93.50	– –	– –	– –

700 Watt

Power rating (Pr) @ 25°C	700W	Limiting element voltage	5000Vrms
Overload power rating	10xPr for 5 secs	Temperature coefficient	±75ppm/°C
Resistance tolerance	±5%	Operating temperature	-55°C to +450°C

Stocked in the following OHMIC Values :

CS collar

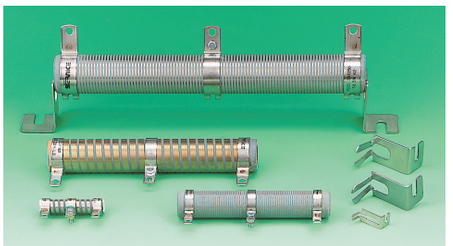
Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products,
prices are subject to change without notice.

207324

Style	Order Code	Price Each 1+	10+	+	+	+
CS collar						
	Values 12R to 470R ●	244.00	226.18	– –	– –	– –
	Values 1K to 47K ●	244.00	218.92	– –	– –	– –

Adjustable 25, 100, 200 & 280 Watt – RSSDSeries

VISHAY



25W L=50, Dia.=11.5
100W L=117, Dia.=22
200W L=168, Dia.=27
280W L=250, Dia.=32

- Tubular ceramic vitreous cement coated wirewound resistors
- Tapped via adjustable collar
- Designed to withstand severe stop/start overloads
- High power rating
- High mechanical strength and endurance
- AN collar connections
- Mounting brackets available separately

25 Watt

Power rating (Pr) @ 25°C	25W	Overload power rating	10xPr for 5 secs
Resistance tolerance	≥ 0R15 ±20% ≥ 1R ±10% ≥ 10R ±5%	Temperature coefficient Operating temperature	±75ppm/°C -55°C to +450°C

Stocked in the following OHMIC Values :

0R15 = **114-1279** 1R = **114-1281** 10R = **114-1283** 22R = **114-1285**
0R47 = **114-1280** 5R6 = **114-1282**

	Order Code	Price Each 1+	10+	25+	+	+
	All Values ●	22.50	19.30	18.20	– –	– –
2EDN Mtg bracket	**121-3358●**	1.04	0.96	0.67	– –	– –

100 Watt

Power rating @ 25°C	100W	Overload power rating	10xPr for 5 secs
Resistance tolerance	≥ 0R15 ±20% ≥ 4R7 ±10% ≥ 10R ±5%	Temperature coefficient Operating temperature	±75ppm/°C -55°C to +450°C

Stocked in the following OHMIC Values :

1R = **114-1286** 10R = **114-1288** 47R = **114-1290** 100R = **114-1291**
4R7 = **114-1287** 22R = **114-1289**

	Order Code	Price Each 1+	10+	25+	+	+
	Value 1R ●	40.70	35.40	33.40	– –	– –
	Values 4R7 to 100R ●	29.30	25.50	24.00	– –	– –
		2+	**10+**	**24+**	**+**	**+**
2EKN Mtg bracket	**121-3359●**	3.71	3.36	1.93	– –	– –

200 Watt

Power rating @ 25°C	200W	Overload power rating	10xPr for 5 secs
Resistance tolerance	≥ 1R ±10% ≥ 10R ±5%	Temperature coefficient Operating temperature	±75ppm/°C -55°C to +450°C

Stocked in the following OHMIC Values :

1R = **114-1292** 10R = **114-1294** 47R = **114-1297** 220R = **114-1299**
4R7 = **114-1293** 22R = **114-1295** 100R = **114-1298**

	Order Code	Price Each 1+	10+	25+	+	+
	Value 1R ●	59.00	51.30	48.40	– –	– –
	Values 4R7 to 200R ●	42.00	36.50	34.40	– –	– –
		2+	**10+**	**+**	**+**	**+**
2EMN Mtg bracket	**121-3360●**	3.71	3.58	– –	– –	– –

280 Watt

Power rating @ 25°C	280W	Overload power rating	10xPr for 5 secs
Resistance tolerance	≥ 0R47 ±10% ≥ 10R ±5%	Temperature coefficient Operating temperature	±75ppm/°C -55°C to +450°C

Stocked in the following OHMIC Values :

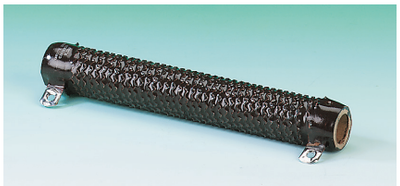
0R47 = **114-1300** 10R = **114-1303** 47R = **114-1305** 330R = **114-1307**
4R7 = **114-1301** 22R = **114-1304** 100R = **114-1306**

207326

	Order Code	Price Each 1+	10+	25+	+	+
	Value 1R ●	71.00	62.00	58.00	– –	– –
	Values 4R7 to 330R ●	58.80	51.20	48.20	– –	– –
		2+	**10+**	**24+**	**+**	**+**
2ESN Mtg bracket	**121-3361●**	5.80	5.31	3.50	– –	– –

300 Watt – 280 Series

OHMITE



L=215.9
Dia.=28.58

- Tubular ceramic core with Corrib® corrugated resistance wire to aid cooling, coated with vitreous enamel
- Low resistance values capable of high current capacity
- Designed to withstand frequent stop start cycles
- Applications include motor starting and dynamic braking

Power rating @ 25°C	300W	Derating linearly from 100 @ +25°C to 0% @> +400°C	
Tolerance @ 25°C	±10%	Overload	10 times rated wattage for 5 seconds
Max. voltage	1000V ac	Temperature coefficient	±400ppm/°Cw

207283

Resistance (Ω)	Max. Current (A)	Order Code	Price Each 1+	5+	10+	25+
0R1	54.7	**218-3675▲**	78.49	– –	– –	– –
0R2	38.7	**199-3288▲**	75.64	65.01	– –	– –
0R5	24.5	**199-8171▲**	65.33	– –	– –	– –
1R	17.3	**199-8183▲**	52.71	47.82	44.51	34.49
2R	12.2	**184-0290▲**	49.20	– –	– –	– –
3R1	9.8	**199-3483▲**	49.38	– –	– –	– –
5R	7.7	**199-3318▲**	46.92	– –	– –	– –
8R	6.1	**199-8213▲**	47.57	– –	– –	– –
10R	5.5	**199-3290▲**	46.48	45.20	– –	– –
20R	3.8	**199-3306▲**	49.34	– –	– –	– –

Silicone Coated Wirewound

3 Watt – AC03 Series

Phoenix

L=13, Dia=5.5, Lead length=28 nom, Lead dia=0.8 Supplied bandoliered on tape (box=500 pcs)

- Cemented wirewound resistors
- Coated in non-flammable silicone cement
- Designed to dissipate high power in a small volume

Power rating @40°C	3W(2.5W @ 70°C)	Temperature coefficient	
Resistance tolerance	±5%	0.1 to 0.1Ω	-80 to +600ppm/°C
Voltage rating	1000V	0.1Ω to 0.1kΩ	-80 to +600ppm/°C
Operating temperture	-40°C to +200°C		

Stocked in the following OHMIC Values:

0R1 = **945-7739** 12R = **946-2899** 1R = **946-2996** 2R7 = **946-3097** 560R = **946-3194**
0R22 = **946-2805** 150R = **946-2902** 1R5 = **946-3003** 330R = **946-3100** 56R = **946-3208**
0R27 = **946-2813** 15R = **946-2910** 1R8 = **946-3011** 33R = **946-3119** 5R6 = **946-3216**
0R33 = **946-2821** 180R = **946-2929** 220R = **946-3020** 390R = **946-3127** 680R = **946-3224**
0R47 = **946-2830** 18R = **946-2937** 22R = **946-3038** 39R = **946-3135** 68R = **946-3232**
0R51 = **946-2848** 1K2 = **946-2945** 270R = **946-3046** 3R3 = **946-3143** 6R8 = **946-3240**
0R68 = **946-2856** 1K = **946-2953** 27R = **946-3054** 3R9 = **946-3151** 820R = **946-3259**
100R = **946-2864** 1K5 = **946-2961** 2K2 = **946-3062** 470R = **946-3160** 82R = **946-3275**
10R = **946-2872** 1K8 = **946-2970** 2K7 = **946-3070** 47R = **946-3178** 8R2 = **946-3283**
120R = **946-2880** 1R2 = **946-2988** 2R2 = **946-3089** 4R7 = **946-3186**

Mftrs. List No. AC03 + OHMIC Value

207175

Order Multiple=5 Order Code	Price Each 5+	50+	100+	1K+	+
All Values ● ●	1.09	0.85	0.66	0.48	– –

3 Watt – W31 Series – Low Ohmic

TT electronics Welwyn

L = 13, Dia. = 5.6, Lead length = 22.75 min, Lead dia. = 0.8
Supplied bandoliered on tape (box = 1000 pcs)

- Cement coated wirewound resistors
- Non-flammable
- Low ohmic values for pulse handling applications

Power rating @ 25°C	3W	Temperature coefficient	
Power rating @ 70°C	2.5W	0.01 to 0.027Ω	<1000ppm/°C
Resistance tolerance	±5%	0.033 to 0.082Ω	<500ppm/°C
Limited element voltage	100V	0.1 to 1Ω	<200ppm/°C

Stocked in the following OHMIC Values:

0R01 = **347-2541** 0R039 = **347-2619** 0R12 = **347-2681** 0R47 = **347-2759**
0R012 = **347-2553** 0R047 = **347-2620** 0R15 = **347-2693** 0R51 = **347-2760**
0R015 = **347-2565** 0R051 = **347-2632** 0R18 = **347-2700** 0R56 = **347-2772**
0R018 = **347-2577** 0R056 = **347-2644** 0R22 = **347-2711** 0R68 = **347-2784**
0R022 = **347-2589** 0R068 = **347-2656** 0R27 = **347-2723** 0R82 = **347-2796**
0R027 = **347-2590** 0R082 = **347-2668** 0R33 = **347-2735** 1R = **347-2802**
0R033 = **347-2607** 0R1 = **347-2670** 0R39 = **347-2747**

RoHS ● Compliant ◀ Non-compliant ‡ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

227210

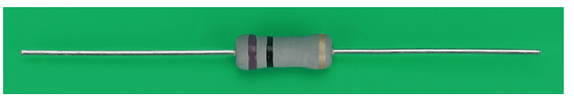
Order Code	5+	25+	100+	500+	+
	Price Each				
All Values	1.04	0.88	0.72	0.42	– –

0R01 = **949-7072**	0R039 = **949-7145**	0R12 = **949-7218**	0R47 = **949-7285**
0R012 = **949-7080**	0R047 = **949-7153**	0R15 = **949-7226**	0R51 = **949-7293**
0R015 = **949-7099**	0R051 = **949-7161**	0R18 = **949-7234**	0R56 = **949-7307**
0R018 = **949-7102**	0R056 = **949-7170**	0R22 = **949-7242**	0R68 = **949-7315**
0R022 = **949-7110**	0R068 = **949-7188**	0R27 = **949-7250**	0R82 = **949-7323**
0R027 = **949-7129**	0R082 = **949-7196**	0R33 = **949-7269**	1R = **949-7064**
0R033 = **949-7137**	0R1 = **949-7200**	0R39 = **949-7277**	

Order Code	5+	25+	100+	500+	+
	Price Each				
All Values ●	1.04	0.88	0.72	0.42	– –

3 Watt – WA84 Series

TT electronics Welwyn



L = 14.5, Dia. = 5.2, Lead length = 24.55 min, Lead dia. = 0.8
Supplied bandoliered on tape (box = 1000 pcs)

- Cement coated wirewound resistors
- Suitable for pulse handling applications
- Non-flammable

Power rating @ 25°C	3W	Limiting element voltage	100V
Power rating @ 70°C	2.5W	Temperature coefficient	200ppm/°C
Resistance tolerance	±5%		

Stocked in the following OHMIC Values:

1R = **347-2814**	5R6 = **347-2905**	27R = **347-2980**	120R = **347-3065**	680R = **347-3156**
1R2 = **347-2826**	6R8 = **347-2917**	33R = **347-2991**	150R = **347-3077**	820R = **347-3168**
1R5 = **347-2838**	8R2 = **347-2929**	39R = **347-3004**	220R = **347-3090**	1K = **347-3170**
1R8 = **347-2840**	10R = **347-2930**	47R = **347-3016**	270R = **347-3107**	1K2 = **347-3181**
2R2 = **347-2851**	12R = **347-2942**	56R = **347-3028**	330R = **347-3119**	1K5 = **347-3193**
2R7 = **347-2863**	15R = **347-2954**	68R = **347-3030**	390R = **347-3120**	1K8 = **347-3200**
3R9 = **347-2887**	18R = **347-2966**	82R = **347-3041**	470R = **347-3132**	2K2 = **347-3211**
4R7 = **347-2899**	22R = **347-2978**	100R = **347-3053**		

227213

Order Code	5+	25+	100+	500+	+
	Price Each				
All Values ▲ ‡	0.96	0.81	0.70	0.56	– –

1R = **950-6012**	5R6 = **950-6233**	27R = **950-6080**	120R = **950-5911**	560R = **950-6217**
1R2 = **950-6020**	6R8 = **950-6268**	33R = **950-6136**	150R = **950-5938**	680R = **950-6241**
1R5 = **950-6039**	8R2 = **950-6306**	39R = **950-6152**	180R = **950-5954**	820R = **950-6276**
1R8 = **950-6047**	10R = **950-5903**	47R = **950-6195**	220R = **950-6055**	1K = **950-5970**
2R2 = **950-6101**	12R = **950-5920**	56R = **950-6225**	270R = **950-6071**	1K2 = **950-5989**
2R7 = **950-6110**	15R = **950-5946**	68R = **950-6250**	330R = **950-6128**	1K5 = **950-5997**
3R3 = **950-6160**	18R = **950-5962**	82R = **950-6292**	390R = **950-6144**	1K8 = **950-6004**
3R9 = **950-6179**	22R = **950-6063**	100R = **950-5890**	470R = **950-6187**	2K2 = **950-6098**
4R7 = **950-6209**				

Order Code	5+	25+	100+	500+	+
	Price Each				
All Values ●	0.96	0.81	0.70	0.56	– –

5 Watt – WA85Z Series - Surface Mount 'Z-Form' Wire Leads

TT electronics Welwyn

- Cement coated wirewound surface mount resistors
- Unique 'Z-Form' pre-formed wire leads
- Non-flammable
- Suitable for pulse handling applications

SMD

L = 18.7 (Overall)
Body = 16.5, Dia. = 7.0

Power rating @ 25°C	5W	Limiting element voltage	150V
Power rating @ 70°C	2.5W	Temperature coefficient	200ppm/°C
Resistance tolerance	±5%		

Stocked in the following OHMIC Values:

1R = **466-0201**	6R8 = **466-0250**	33R = **466-0298**	150R = **466-0330**	680R = **466-0377**
1R5 = **466-0213**	10R = **466-0262**	47R = **466-0304**	220R = **466-0341**	1K = **466-0389**
2R2 = **466-0225**	15R = **466-0274**	68R = **466-0316**	330R = **466-0353**	1K5 = **466-0390**
3R3 = **466-0237**	22R = **466-0286**	100R = **466-0328**	470R = **466-0365**	2K2 = **466-0407**
4R7 = **466-0249**				

312077

Order Multiple=5

Order Code	5+	50+	250+	500+	+
	Price Each				
All Values	2.86	2.57	2.25	2.02	– –

1R = **950-6594**	6R8 = **950-6721**	33R = **950-6659**	150R = **950-6543**	680R = **950-6705**
1R5 = **950-6586**	10R = **950-6535**	47R = **950-6683**	220R = **950-6608**	1K = **950-6578**
2R2 = **950-6632**	15R = **950-6551**	68R = **950-6713**	330R = **950-6640**	1K5 = **950-6560**
3R3 = **950-6667**	22R = **950-6616**	100R = **950-6527**	470R = **950-6675**	2K2 = **950-6624**
4R7 = **950-6691**				

Order Multiple=5

Order Code	5+	50+	250+	500+	+
	Price Each				
All Values ●	2.86	2.57	2.25	2.02	– –

Ceramic Cased Wirewound

A completely fire-proof ceramic cased resistor, the resistance wire being wound on a fibre glass core and end filled with fire-proof inorganic material. Suitable for either conventional or PCB mounting. The maximum working voltage is √PxR, where P=Power Rating and R=Resistance

207165

5 Watt-SQM5 Series – Vertical Mounting

tyco Electronics CGS

Wirewound and Power Oxide Element

- Vertical mounting, wirewound or power oxide
- Compact size for PCB space saving
- Low values available for current sensing applications

Power rating @ 70°C	5W
Maximum working voltage	350V
Resistance tolerance	±5%
Operating temperature	-55°C to +275°C
Temperature coefficient	300ppm/°C max.

H=26.5, W=14, D=10,
Lead length (usable)=3.5, Lead pitch=5, Lead dia.=0.8

Stocked in the following OHMIC Values:

Wirewound Element

0R1 = **987-487**	0R68 = **987-529**	4R7 = **987-566**	22R = **987-608**	100R = **987-645**
0R22 = **987-499**	1R = **987-530**	6R8 = **987-578**	33R = **987-610**	130R = **987-657**
0R33 = **987-505**	2R2 = **987-542**	10R = **987-580**	47R = **987-621**	150R = **987-669**
0R47 = **987-517**	3R3 = **987-554**	15R = **987-591**	68R = **987-633**	

Power Oxide Element

220R = **987-670**	1K = **987-700**	4K7 = **987-736**	15K = **987-761**	33K = **987-785**
470R = **987-682**	1K5 = **987-712**	6K8 = **987-748**	22K = **987-773**	47K = **987-797**
680R = **987-694**	2K2 = **987-724**	10K = **987-750**		

Mftrs. List No. SQM5 + OHMIC Value

207271

Order Code	5+	50+	100+	+	+
All Values ●	0.65	0.62	0.56	– –	– –

7 Watt-SQM7 Series – Vertical Mounting

tyco Electronics CGS

Wirewound and Power Oxide Element

- Vertical mounting, wirewound or power oxide
- Compact size for PCB space saver
- Low values available for current sensing applications

Power rating @ 70°C	7W
Maximum working voltage	500V
Operating temperature	-55°C to +275°C
Resistance tolerance	±5%
Temperature coefficient	300ppm/°C max

H=40, W=14, D=10, Lead length (usable)=3.5, Lead pitch=5, Lead dia.=0.8

Stocked in the following OHMIC Values:

Wirewound Element

0R1 = **987-803**	0R68 = **987-840**	4R7 = **987-888**	22R = **987-920**	100R = **987-967**
0R22 = **987-815**	1R = **987-852**	6R8 = **987-890**	33R = **987-931**	130R = **987-979**
0R33 = **987-827**	2R2 = **987-864**	10R = **987-906**	47R = **987-943**	150R = **987-980**
0R47 = **987-839**	3R3 = **987-876**	15R = **987-918**	68R = **987-955**	

Power Oxide Element

220R = **987-992**	1K = **988-029**	4K7 = **988-054**	15K = **988-080**	33K = **988-108**
470R = **988-005**	1K5 = **988-030**	6K8 = **988-066**	22K = **988-091**	47K = **988-110**
680R = **988-017**	2K2 = **988-042**	10K = **988-078**		

Mftrs. List No. SQM7 + OHMIC Value

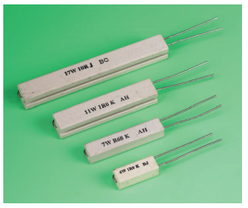
207272

Order Code	5+	50+	100+	+	+
	Price Each				
All Values ●	0.94	0.90	0.81	– –	– –

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

SBCHE Series — Ceramic Case

tyco/Electronics CGS



- Suitable for vertical and horizontal mounting
- Axial leads

4 Watt: L=20 (10K=25), W=7.3, D=8.1, Lead Dia=0.8
7 Watt: L=38, W=7.0, D=8.0, Lead Dia=0.8
11 Watt: L=50, W=9.0, D=10.0, Lead Dia=0.8
17 Watt: L=75, W=9.3, D=10.3, Lead Dia=0.8

4 Watt - SBCHE4 Series

Power rating	4W @ 25°C	Temperature coefficient	<22R ±400ppm/°C
Note 10K	5W @ 25°C		>18R ± 200 ppm/°C
Resistance tolerance	<4.7R ±10%	Operating temperature	-55°C to +250°C
	>6.8R ±5%		

Stocked in the following OHMIC Values:

1R = **117-4321**	6R8 = **117-4326**	47R = **117-4330**	330R = **117-4336**	2K2 = **117-4341**
1R5 = **117-4322**	10R = **117-4327**	68R = **117-4331**	470R = **117-4337**	3K3 = **117-4342**
2R2 = **117-4323**	15R = **117-4328**	100R = **117-4333**	680R = **117-4338**	4K7 = **117-4343**
3R3 = **117-4324**	22R = **117-4442**	150R = **117-4334**	1K = **117-4339**	6K8 = **117-4345**
4R7 = **117-4325**	33R = **117-4329**	220R = **117-4335**	1K5 = **117-4340**	10K = **117-4346**

207248

4 Watt

Order Code	Price Each 5+	50+	100+	+
Values 1R to 1K ●	0.69	0.66	0.60	– –
Values 1K5 to 10K ●	0.75	– –	– –	– –

7 Watt – SBCHE6 Series

Power rating	7W @ 25°C	Temperature coefficient	<22R ±400ppm/°C
Resistance tolerance	<5R6 ±10%		>18R ±400ppm/°C
	>6R8 ±5%		

Stocked in the following OHMIC Values:

0R47 = **117-4347**	4R7 = **117-4360**	39R = **117-4373**	330R = **117-4385**	3K3 = **117-4397**
0R56 = **117-4348**	5R6 = **117-4361**	47R = **117-4374**	390R = **117-4386**	3R9 = **117-4398**
0R68 = **117-4349**	6R8 = **117-4362**	56R = **117-4375**	470R = **117-4387**	4K7 = **117-4399**
0R82 = **117-4350**	8R2 = **117-4363**	68R = **117-4376**	560R = **117-4388**	5K6 = **117-4402**
1R = **117-4351**	10R = **117-4364**	82R = **117-4377**	680R = **117-4389**	6K8 = **117-4404**
1R2 = **117-4352**	12R = **117-4365**	100R = **117-4378**	1K = **117-4390**	8K2 = **117-4405**
1R5 = **117-4353**	15R = **117-4366**	120R = **117-4379**	1K2 = **117-4391**	10K = **117-4406**
1R8 = **117-4354**	18R = **117-4367**	150R = **117-4380**	1K5 = **117-4392**	12K = **117-4407**
2R2 = **117-4355**	22R = **117-4369**	180R = **117-4382**	1K8 = **117-4394**	15K = **117-4408**
2R7 = **117-4357**	27R = **117-4371**	220R = **117-4383**	2K2 = **117-4395**	18K = **117-4409**
3R3 = **117-4358**	33R = **117-4372**	270R = **117-4384**	2K7 = **117-4396**	22K = **117-4410**
3R9 = **117-4359**				

207247

7 Watt

Order Code	5+	50+	100+	+
Values R47 to 1K ●	0.94	0.90	0.81	– –
Values 1K to 22K ●	0.94	0.90	0.81	– –

11 Watt – SBCHE11 Series

Power rating	11W @ 25°C	Temperature coefficient	<22R 400ppm/°C
Resistance tolerance	<4.7 10%		>18R 400ppm/°C
	>6.8 5%		

Stocked in the following OHMIC Values:

1R = **117-4412**	10R = **117-4419**	100R = **117-4426**	680R = **117-4431**	4K7 = **117-4437**
1R5 = **117-4413**	15R = **117-4420**	150R = **117-4427**	1K = **117-4432**	6K8 = **117-4438**
2R2 = **117-4414**	22R = **117-4421**	220R = **117-4428**	1K5 = **117-4433**	10K = **117-4439**
3R3 = **117-4416**	33R = **117-4422**	330R = **117-4429**	2K2 = **117-4434**	15K = **117-4440**
4R7 = **117-4417**	47R = **117-4424**	470R = **117-4430**	3K3 = **117-4436**	22K = **117-4441**
6R8 = **117-4418**	68R = **117-4425**			

207251

11 Watt

Order Code	Price Each 5+	50+	100+	+
Values 1R to 1K ●	1.14	1.09	0.99	– –
Values IK5 to 22K ●	1.14	1.09	0.99	– –

17 Watt – SBCHE15 Series

Power rating	17W @ 25°C	Temperature coefficient	< 400
Resistance tolerance	< 10%		> 200
	> 5%		

Stocked in the following OHMIC Values:

1R = **117-4454**	10R = **117-4463**	100R = **117-4469**	680R = **117-4475**	4K7 = **117-4480**
1R5 = **117-4455**	15R = **117-4464**	150R = **117-4470**	1K = **117-4476**	6K8 = **117-4481**
2R2 = **117-4456**	22R = **117-4465**	220R = **117-4471**	1K5 = **117-4477**	10K = **117-4482**
3R3 = **117-4458**	33R = **117-4466**	330R = **117-4473**	2K2 = **117-4478**	15K = **117-4483**
4R7 = **117-4461**	47R = **117-4467**	470R = **117-4474**	3K3 = **117-4479**	22K = **117-4485**
6R8 = **117-4462**	68R = **117-4468**			

207249

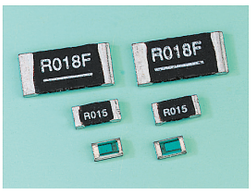
17 Watt

Order Code	Price Each 5+	50+	100+	+
Values 1R to 1K	1.35	1.29	1.17	– –
Values IK5 to 22K	1.40	1.32	1.20	– –

Power Low Ohm Metal

CRL-TL Series

tyco/Electronics CTEC



SMD

- Surface mount low ohmic current sense resistors
- For use with battery charging management IC's, power supplies and shunt resistor applications
- Three case sizes 0805, 1206 and 2512
- Power ratings from 0.125W to 1W
- Virtually non-inductive low noise

	0805 CRL 1220	1206 TL2B	2512 TL3A
Technology	Thick film	Metal alloy	Metal alloy
Power rating @70°C	0.125W	0.25W	1W
Resistance tolerance	±5%	±1%	±1%
Temperature coefficient	200ppm/°C	75ppm/°C	75ppm/°C
Temperature range	-55°C to +125°C	-65°C to +170°C	-65°C to 170°C

Stocked in the following OHMIC values:

0805 CRL 1220 Series

0R022 = **117-3953**	0R068 = **117-3956**	0R15 = **117-3961**	0R47 = **117-3964**
0R033 = **117-3954**	0R075 = **117-3957**	0R22 = **117-3962**	0R68 = **117-3965**
0R047 = **117-3955**	0R1 = **117-3958**	0R33 = **117-3963**	

Order Code	Price Each 5+	25+	100+	500+	+
All Values ●	1.00	0.84	0.78	0.54	– –

1206 TL 2B Series

0R01 = **117-3966**	0R018 = **117-3969**	0R033 = **117-3971**	0R068 = **117-3974**
0R015 = **117-3968**	0R022 = **117-3970**	0R047 = **117-3973**	0R09 = **117-3975**

Order Code	Price Each 5+	25+	100+	500+	+
All Values ●	2.86	2.08	1.86	0.88	– –

2512 TL3A Series

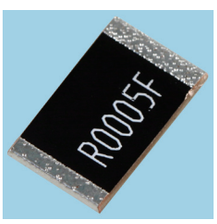
0R001 = **117-4190**	0R005 = **117-3976**	0R022 = **117-3980**	0R051 = **117-4188**
0R002 = **117-4191**	0R01 = **117-3977**	0R033 = **117-3981**	0R068 = **117-4189**
0R003 = **117-4192**	0R015 = **117-3978**	0R047 = **117-3982**	0R075 = **117-3983**
0R004 = **117-4193**	0R018 = **117-3979**		

RP226/

Order Code	Price Each 5+	25+	100+	500+	+
All Values ●	2.99	2.30	100+	1.23	– –

BSC8 Series - Current Detect Chip Resistor

TT electronics BI Technologies Limited



NEW

- Low profile surface mount package
- Excellent pulse/surge performance
- Non-inductive design.

Application includes: current sense, servo motor control circuits.

Power rating	8W	Temperature coefficient	50ppm/°C
Resistance tolerance	±1%	Dimensions (HxWxD)	12.8 x 6.4 x 12.8mm
Operating temperature	-55°C to +175°C		

Stocked in the following OHMIC Values:

0m5 = **111-4442**	1m = **111-4443**	2m5 = **111-4444**	5m = **111-4445**

423563

Order Code	Price Each 1+	25+	100+	500+	+
All Values ●	7.58	6.44	5.70	4.56	– –

1 Watt—SL1 Series

tyco/Electronics CGS

SMD

- Surface mount low ohmic value
- Non-inductive, low TCR fully sealed case
- Applications include current sensing and monitoring

L=6.3 W=3.5 H=3.5
Supplied on 12mm embossed tape

Power rating @25°C	1W	Resistance tolerance	±5%
Voltage rating	√PR	Operating temperature	-55°C to +125°C
Dielectric strength	1000V/m	Temperature coefficient	100ppm/°C

0R005 = **117-4242**	0R015 = **117-4244**	0R033 = **117-4246**	0R051 = **117-4248**
0R01 = **117-4243**	0R022 = **117-4245**	0R047 = **117-4247**	0R068 = **117-4249**

207216

Order Code	Price Each 1+	50+	100+	500+
All Values ●	5.41	4.03	3.59	2.61

RoHS ● Compliant ◄ Non-compliant ++ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

LVR Series

Wirewound low Ohmic value

NEW

VISHAY

- Ideal for all types of current sensing applications including switching and linear power supplies, instruments and power amplifiers
- Proprietary processing technique produces extremely low resistance values
- Low temperature coefficient
- Cooler operation for high power to size ratio

Resistance tolerance	±1%	Dielectric withstanding voltage	1000V
Operating temperature	-65°C to +175°C	Insulation resistance	10000MR

1 Watt - LVR01

Power rating (Pr) @ 25°C	1W	Diameter Body	2.92mm
Length Body	10.85mm	Diameter Lead	0.508mm

Stocked in the following OHMIC Values :

0R01 = **110-8056**	0R03 = **110-8059**	0R07 = **110-8063**
0R02 = **110-8057**	0R04 = **110-8060**	0R08 = **110-8064**
0R025 = **110-8058**	0R05 = **110-8061**	0R1 = **110-8065**

3 Watt - LVR03

Power rating (Pr) @ 25°C	3W	Diameter Body	5.21mm
Length Body	14.22mm	Diameter Lead	0.813mm

Stocked in the following OHMIC Values :

0R005 = **110-8066**	0R025 = **110-8070**	0R07 = **110-8075**	0R2 = **110-8079**
0R01 = **110-8067**	0R03 = **110-8071**	0R08 = **110-8076**	
0R015 = **110-8068**	0R04 = **110-8072**	0R1 = **110-8077**	
0R02 = **110-8069**	0R05 = **110-8073**	0R15 = **110-8078**	

5 Watt - LVR05

Power rating (Pr) @ 25°C	5W	Diameter Body	8.38mm
Length Body	23.5mm	Diameter Lead	1.02mm

Stocked in the following OHMIC Values :

0R005 = **110-8080**	0R025 = **110-8084**	0R07 = **110-8089**	0R15 = **110-8092**
0R01 = **110-8081**	0R03 = **110-8085**	0R08 = **110-8090**	0R2 = **110-8093**
0R015 = **110-8082**	0R04 = **110-8087**	0R1 = **110-8091**	0R3 = **110-8094**
0R02 = **110-8083**	0R05 = **110-8088**		

423495

Power rating	Order Code	Price Each 5+	25+	100+	250+	+
1W	All Values ●	3.19	2.96	2.57	1.82	– –
3W	All Values ●	3.19	2.96	2.57	1.82	– –
5W	All Values ●	4.04	3.55	3.22	2.44	– –

Aluminium Clad Wirewound

WH Series

TT electronics

Welwyn

WH5

WH50

WH series aluminium clad resistors for applications where high wattage dissipation in a small space is required. The housing is hard anodised aluminium with terminals of solder coated copper.

The resistive element of tape or wire is wound on a high grade ceramic former and welded to axial terminations. The assembly is encapsulated in an anodised aluminium heat sink, which ensures good heat dispersal and a low hot-spot temperature. Power ratings specified derate linearly from full load at 20°C to zero at 200°C.

- Hard anodised aluminum clad wirewound resistors
- Complete environmental protection
- Manufactured to exacting standard **CECC 40203-006**
- 100% measurement of value
- Lot release testing of overload performance, isolation resistance and solderability
- Full stability testing
- 12 hour stabilisation burn-in

The WH series maximises the capability to withstand short, high energy pulses and overloads by using a physically larger resistor element than other similar products.

Dimensions:
WH5 H=9, W=8.9, L=17 (Body) Fixing centres=12.5 x 11.3, Termination L=6.3
WH10 H=11, W=12.4, L=21 (Body) Fixing centres=15.9 x 14.3, Termination L=7.4
WH25 H=15, W=14.5, L=29 (Body) Fixing centres=19.9 x 18.3, Termination L=10.4
WH50 H=17, W=16.1, L=51 (Body) Fixing centres=21.5 x 39.7, Termination L=10.4

10 Watt – WH5 Series

Power rating @ 20°C

with heatsink	10W	Insulation resistance	10000MΩ
without heatsink	5.5W	Surface temperature rise (°C/Watt)	22.2
Tolerance	±5%	Voltage rating	160V ac
Temperature coefficient	±75ppm/°C(<10Ω) ±50ppm/°C(≥10Ω)	Operating temperature	-55°C to +275°C

Stocked in the following OHMIC Values:

0R1 = **950-7698**	3R3 = **950-7914**	47R = **950-7949**	270R = **950-7833**
0R3 = **950-7701**	4R7 = **950-7957**	50R = **950-7965**	330R = **950-7884**
0R33 = **950-8023**	6R8 = **950-8015**	56R = **950-7981**	1K5 = **950-7787**
0R47 = **950-7710**	10R = **950-7744**	68R = **950-8007**	2K2 = **950-7850**
0R68 = **950-7728**	15R = **950-7779**	100R = **950-7736**	680R = **950-7990**
1R = **950-7795**	22R = **950-7825**	120R = **950-7752**	560R = **950-7973**
1R5 = **950-7809**	27R = **950-7841**	150R = **950-7760**	3K3 = **950-7906**
2R2 = **950-7868**	33R = **950-7892**	220R = **950-7817**	470R = **950-7930**
2R7 = **950-7876**	43R = **950-7922**		

207417

Order Code	Price Each 1+	20+	50+	100+	+
Values 0R1 to 680R ●	4.60	4.10	3.84	2.90	– –
Values 1K5 to 3K3 ●	4.25	3.84	3.59	3.49	– –

15 Watt – WH10 Series

with heatsink	15W	Insulation resistance	10000MΩ
without heatsink	8.0W	Surface temperature rise (°C/Watt)	19.4
Tolerance	±5%	Voltage rating	265V ac
	±75ppm/°C(<10Ω) ±50ppm/°C(≥10Ω)	Operating temperature	-55°C to +275°C

Stocked in the following OHMIC Values:

0R1 = **950-6730**	3R = **950-7019**	50R = **950-7078**	330R = **950-6993**
0R2 = **950-6748**	3R3 = **950-7027**	56R = **950-7094**	470R = **950-7035**
0R22 = **950-6764**	4R7 = **950-7060**	62R = **950-7124**	560R = **950-7086**
0R25 = **950-6772**	5R = **950-7116**	68R = **950-7140**	680R = **950-7132**
0R33 = **950-6780**	10R = **950-6829**	100R = **950-6810**	1K = **950-6870**
0R47 = **950-6799**	12R = **950-6845**	120R = **950-6837**	1K5 = **950-6888**
0R5 = **950-6802**	15R = **950-6861**	150R = **950-6853**	2K2 = **950-6969**
1R = **950-6896**	20R = **950-6918**	220R = **950-6926**	3K3 = **950-7000**
1R5 = **950-6900**	22R = **950-6934**	240R = **950-6942**	4K7 = **950-7051**
2R = **950-6977**	47R = **950-7043**	270R = **950-6950**	5K = **950-7108**
2R2 = **950-6985**			

207425

Order Code	Price Each 1+	20+	50+	100+	+
Values 0R1 to 1K ●	4.97	4.38	4.07	3.11	– –
Values 1K5 to 5K ●	6.02	5.60	5.24	3.94	– –

25 Watt – WH25 Series

Power rating @ 20°C

with heatsink	25W	Insulation resistance	10000MΩ
without heatsink	12.5W	Surface temperature rise (°C/Watt)	13.3
Tolerance	±5%	Voltage rating	560V ac
Temperature coefficient	±75ppm/°C(<10Ω) ±50ppm/°C(≥10Ω)	Operating temperature	-55°C to +275°C

Stocked in the following OHMIC Values:

0R01 = **327-1055**	1R5 = **327-1080**	12R = **345-052**	56R = **345-167**	1K5 = **327-1122**
0R05 = **327-1067**	2R = **344-977**	15R = **345-064**	68R = **345-179**	2K2 = **345-271**
0R1 = **344-898**	2R2 = **344-989**	16R = **345-076**	100R = **345-192**	3K3 = **327-1134**
0R15 = **344-904**	3R3 = **327-1092**	18R = **345-088**	120R = **345-209**	3K9 = **345-283**
0R22 = **327-1079**	3R9 = **344-990**	22R = **345-090**	150R = **345-210**	4K7 = **327-1146**
0R24 = **344-916**	4R7 = **345-003**	24R = **345-106**	220R = **345-222**	5K6 = **327-1158**
0R27 = **344-928**	5R = **345-015**	33R = **950-7477**	330R = **345-234**	6K8 = **327-1160**
0R33 = **344-930**	6R8 = **345-027**	39R = **345-131**	470R = **345-246**	8K2 = **345-295**
0R56 = **344-953**	8R2 = **950-7680**	47R = **950-7540**	680R = **345-258**	10K = **345-301**
1R = **344-965**	10R = **345-040**	50R = **345-155**	1K = **345-260**	15K = NEW **500-7811**

0R01 = **950-7159**	1R5 = **950-7388**	15R = **950-7329**	82R = **950-7663**	1K5 = **950-7361**
0R05 = **950-7167**	2R = **950-7442**	16R = **950-7337**	100R = **950-7256**	2K2 = **950-7434**
0R1 = **950-7175**	2R2 = **950-7450**	18R = **950-7345**	120R = **950-7280**	3K3 = **950-7493**
0R15 = **950-7183**	3R3 = **950-7515**	22R = **950-7400**	150R = **950-7302**	3K9 = **950-7507**
0R22 = **950-7191**	3R9 = **950-7523**	24R = **950-7418**	220R = **950-7396**	4K7 = **950-7558**
0R24 = **950-7205**	4R7 = **950-7566**	27R = **950-7426**	330R = **950-7469**	5K6 = **950-7604**
0R27 = **950-7213**	5R = **950-7612**	39R = **950-7485**	470R = **950-7531**	6K8 = **950-7647**
0R33 = **950-7221**	6R8 = **950-7655**	50R = **950-7574**	560R = **950-7582**	8K2 = **950-7671**
0R47 = **950-7230**	10R = **950-7272**	56R = **950-7590**	680R = **950-7620**	10K = **950-7264**
0R56 = **950-7248**	12R = **950-7299**	68R = **950-7639**	1K = **950-7353**	15K = **950-7310**
1R = **950-7370**				

207163

Order Code	Price Each 1+	20+	50+	100+	+
Values 0R01 to 1k	5.01	4.44	4.21	3.64	– –
Values 1k5 to 15k	4.73	4.19	3.97	3.43	– –

50 Watt – WH50 Series

Power rating @ 20°C

with heatsink	50W	Insulation resistance	10000MΩ
without heatsink	20W	Surface temperature rise (°C/Watt)	9.5
Tolerance	±5%	Voltage rating	1250V ac
Temperature coefficient	±75ppm/°C(<10Ω) ±50ppm/°C(≥10Ω)	Operating temperature	-55°C to +275°C

Stocked in the following OHMIC Values:

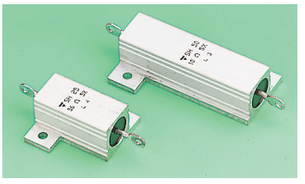
0R1 = **950-8031**	10R = **950-8082**	33R = **950-8333**	270R = **950-8252**	3K9 = **950-8376**
0R47 = **950-8040**	12R = **950-8104**	39R = **950-8350**	330R = **950-8317**	4K7 = **950-8430**
0R5 = **950-8058**	15R = **950-8120**	47R = **950-8422**	390R = **950-8341**	10K = **950-8074**
1R = **950-8180**	18R = **950-8155**	50R = **950-8465**	470R = **950-8392**	16K = **950-8139**
2R = **950-8287**	20R = **950-8201**	68R = **950-8538**	620R = **950-8511**	22K = **950-8228**
2R2 = **950-8295**	22R = **950-8236**	100R = **950-8066**	820R = **950-8562**	33K = **950-8325**
4R7 = **950-8449**	24R = **950-8244**	150R = **950-8112**	1K = **950-8163**	47K = **950-8406**
5R = **950-8490**	27R = **950-8260**	180R = **950-8147**	1K2 = **950-8171**	50K = **950-8457**
5R6 = **950-8503**	30R = **950-8309**	220R = **950-8210**	2K2 = **950-8279**	

207174

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

Order Code	Price Each 1+	20+	50+	100+	+
Values 2k2 to 1k ●	5.75	5.17	4.76	4.19	– –
Values 1k2 to 50k ●	6.10	5.48	5.05	4.44	– –

SH Series



SH25:
H=15, W=14, L=28 (Body),
Fixing centres=18.3 x 19.8,
Termination L = 11.1

SH50:
H=15, W=15.5, L=50 (Body),
Fixing centres=39.7 x 21.4,
Termination L = 11

25 Watt - SH25 Series

Power rating @ 25°C		Insulation resistance	30000MΩ
with heatsink	25W	Voltage rating	550V
without heatsink	9W	Operating temperature	-55°C to +200°C
Resistance tolerance	±5%		

Stocked in the following OHMIC Values:

0R1 = **114-1216** 4R7 = **114-1219** 47R = **114-1222** 220R = **114-1226** 1K = **114-1228**
1R = **114-1217** 10R = **114-1220** 56R = **114-1224** 330R = **114-1227** 4K7 = **114-1229**
2R2 = **114-1218** 22R = **114-1221** 100R = **114-1225**

Order Code	Price Each 1+	20+	50+	100+	+
All Values ●	5.53	5.40	5.05	4.04	– –

50 Watt - SH50 Series

Power rating @ 25°C		Insulation resistance	30000MΩ
with heatsink	50W	Voltage Rating	1285V
without heatsink	12W	Operating temperature	-55°C to +200°C
Resistance tolerance	±5%		

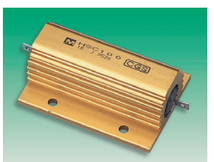
Stocked in the following OHMIC Values:

0R1 = **114-1230** 6R8 = **114-1236** 47R = **114-1240** 150R = **114-1244** 1K = **114-1248**
1R = **114-1231** 10R = **114-1237** 56R = **114-1241** 220R = **114-1245** 2K2 = **114-1249**
2R2 = **114-1232** 22R = **114-1238** 68R = **114-1242** 470R = **114-1246** 4K7 = **114-1250**
4R7 = **114-1233** 33R = **114-1239** 100R = **114-1243**

207322

Order Code	Price Each 1+	20+	50+	100+	+
All Values ●	6.35	5.89	5.73	4.44	– –

HSC Series



HSC100

HSC300

Dimensions:
HSC100 H = 26.0, W = 47.5, L = 65.5. Fixing centres = 35.0 x 37.0, Termination L = 11
HSC200 H = 45.0, W = 73.0, L = 90.0. Fixing centres = 57.2 x 70.0, Termination M6 stud, nuts & washers
HSC300 H = 45.0, W = 73.0, L = 128.0. Fixing centres = 59.0 x 104.0, Termination M6 stud, nuts & washers

100 Watt – HSC100 Series

Power rating @ 20°C			
with heatsink	100W	Insulation resistance	10000MΩ
without heatsink	50W	Surface temperature rise (°C/Watt)	1.1
Resistance tolerance	±5%	Voltage rating	1900V a.c.
Temperature coefficient	±50ppm/°C >100R ±30ppm/°C	Operating temperature	-55°C to +250°C

Stocked in the following OHMIC Values:

0R1 = **117-4279** 1R5 = **117-4283** 6R8 = **117-4287** 33R = **117-4293** 220R = **117-4297**
0R22 = **117-4280** 2R2 = **117-4284** 10R = **117-4288** 47R = **117-4294** 470R = **117-4298**
0R47 = **117-4281** 3R3 = **117-4285** 15R = **117-4291** 68R = **117-4295** 1K = **117-4299**
1R = **117-4282** 4R7 = **117-4286** 22R = **117-4292** 100R = **117-4296**

207235

Order Code	Price Each 1+	20+	50+	100+	+
All Values ●	13.85	12.16	11.18	9.81	– –

200 Watt – HSC200 Series

Power rating @ 20°C			
with heatsink	200W	Insulation resistance	10000MΩ
without heatsink	50W	Surface temperature rise (°C/Watt)	0.75
Resistance tolerance	±5%	Voltage rating	1900V ac
Temperature coefficient	±50ppm/°C >100R ±30ppm/°C	Operating temperature	-55°C to +250°C

Stocked in the following OHMIC Values:

0R1 = **272-668** 0R47 = **272-670** 1R = **272-681** 2R2 = **272-693** 10R = **272-723**
22R = **272-735** 100R = **272-759** 220R = **272-772** 470R = **117-3991** 1K = **272-796**
47R = **272-747** 150R = **117-3990**

207197

Order Code	Price Each 1+	10+	25+	50+	+
All Values ●	43.19	38.81	35.56	30.23	– –

300 Watt – HSC300 Series

Power rating @ 20°C		Resistance tolerance	±5%
with heatsink	300W	Temperature coefficient	±50ppm/°C
without heatsink	75W		>100R ±30ppm/°C

Stocked in the following OHMIC Values:

1R = **652-611** 10R = **652-647** 100R = **652-672** 680R = **652-696**
4R7 = **652-623** 22R = **652-659** 330R = **652-684** 1K = **652-702**
6R8 = **652-635** 47R = **652-660**

207234

Order Code	Price Each 1+	10+	25+	50+	+
All Values ●	63.39	56.57	51.94	44.23	– –

Thermistors

Thermistors are thermally sensitive resistors which display a change in resistance as their temperature changes. Available in two types NTC and PTC.

NTC - Negative temperature coefficient
As the temperature increases the Thermistors resistance decreases. Used mainly for inrush current limiting. They suppress high inrush current surges which can occur in many electrical items, such as power supplies, motors, transformers, amplifiers.

PTC - Positive temperature coefficient
As the temperature increases the Thermistor resistance increases. Used in many applications including:

- Overload Protection
- Temperature Sensing
- Heating
- Continuous Switching

388687

NTC, NTH5G Series – Surface Mount

0402 and 0603 Case Sizes

- Ultra compact and miniature NTC chip thermistors
- 0402 and 0603 case sizes
- High accuracy and high stability
- Suitable for most temperature compensation requirements

Operating Temperature: -40°C to + 125°C
Power rating @ 25°C: 100mW

0402 size: L = 1.0, W = 0.5, H = 0.5
0603 size: L = 1.6, W = 0.8, H = 0.8
Supplied on 8mm tape (reel=4k pcs)

Resistance ±5% @ 25°C (Ω)	Beta Value 25°C to 50°C ±3%	Max. Continuous Current @ 25°C (mA)	Mftrs. List No.	Order Code
0402 Case Size				
10K	3380	0.31	NCP15XH103J03RC	952-8067
100K	4250	0.1	NCP15WF104J03RC	952-2972
0603 Case Size				
1K	3650	1	NCP18XQ102J03RB	952-8121
4K7	3950	0.46	NCP18XM72J03RB	952-8113
10K	3380	0.31	NCP18XH103J03RB	952-8105
22K	3950	0.21	NCP18XW223J03RB	952-8130
47K	4050	0.14	NCP18WB473J03RB	952-8075
100K	4250	0.1	NCP18WF104J03RB	952-8083
470K	4500	0.04	NCP18WM474J03RB	952-8091

227222

	Order Code	Price Each 5+	50+	100+	500+	+
0402 Case Size	All Values ●	1.29	1.05	0.87	0.51	– –
0603 Case Size	All Values ●	0.84	0.69	0.55	0.33	– –

NTC

0603 size: H = 1.6, W = 0.8, D = 0.9, Terminations W = 0.3 ± 0.2
0805 size: H = 2.0, W = 1.25, D = 1.25, Terminations W = 0.5 ± 0.25
1206 size: H = 3.2, W = 1.6, D = 1.3, Terminations W = 0.5 ± 0.25

Surface mount NTC thermistors suitable for temperature compensation in hybrid circuits especially in data plus telecom systems and in automotive electronics. Supplied on tape and reel in 0603, 0805 and 1206 case sizes, suitable for wave and reflow soldering.

Max. Power @ 25°C	210mW (0603 size), 210mW (0805 size), 300mW (1206 size)
Terminations	Silver palladium

● Compliant
◄ Non-compliant
‡ Limited stock - RoHS replacement available

Case Size	Resistance ±5% @ 25°C	Beta Value 25°C to 100°C, ±3%	Mftrs. List No.	Order Code
0603	10KΩ	3100	B57619C103J60	387-6585
0603	47KΩ	3100	B57619C473J60	387-6603
0805	220Ω	3100	B57620C221J62	679-460
0805	470Ω	3300	B57620C471J62	679-471
0805	1KΩ	3450	B57620C102J62	679-483
0805	10KΩ	3730	B57620C103J62	679-495
0805	100KΩ	4100	B57620C104J62	679-501
1206	470Ω	3250	B57621C471J62	679-513
1206	1KΩ	3450	B57621C102J62	679-525
1206	4.7KΩ	3520	B57621C472J62	679-537
1206	10KΩ	3530	B57621C103J62	679-549
1206	100KΩ	3950	B57621C104J62	679-550

207338

Order Code	Price Each 1+	100+	250+	500+	+
All values 0603 ●	1.56	1.14	0.99	0.81	– –
All values 0805 ●	1.68	1.23	1.08	0.81	– –
All values 1206 ●	1.68	1.23	1.08	0.81	– –

MiniReel™

NTC, B57620 and B57621 Series – Surface Mount

Tape width = 8mm

- 100mm reel size
- 250 pieces on each reel
- Ideal for pre-production, prototyping and production shortfalls
- Complete with leader tape
- Surface mount NTC thermistors
- Operating temperature -55°C to +155°C

Case Size	Resistance ±5% @ 25°C (Ω)	MiniReel List No.	Order Code
0805	1K	B57620C102J62	345-2931
0805	10K	B57620C103J62	345-2943
0805	100K	B57620C104J62	345-2955
1206	10K	B57621C103J62	345-2967
1206	100K	B57621C104J62	345-2979
1206	2.2K	B57621C222J62	345-2980
1206	22K	B57621C223J62	345-2992
1206	4.7K	B57621C472J62	345-3005

227223

250 Pieces Per Reel MiniReel List No.	Order Code	Price Each 1+	3+	5+
B57620C102J62	SMD **345-2931**●	208.23	197.79	187.89
B57620C103J62	SMD **345-2943**●	217.05	206.19	201.13
B57620C104J62	SMD **345-2955**●	217.05	206.19	195.87
B57621C103J62	SMD **345-2967**●	233.16	– –	– –
B57621C104J62	SMD **345-2979**●	236.18	– –	– –
B57621C222J62	SMD **345-2980**	217.05	206.19	195.87
B57621C223J62	SMD **345-2992**	217.05	206.19	195.87
B57621C472J62	SMD **345-3005**●	217.05	206.19	195.87

NTC

Dia.=2.41 max., L=5 max., Lead L=45
Lead Dia. = 0.2 (non-insulated), 0.25 (insulated)

Miniature NTC thermistors for high precision temperature measurement in measuring and control engineering.

Max Power @ 25°C 60mW

Resistance @ 25°C	25°C to 100°C	Non-Insulated Mfts. List No.	Order Code	PTFE Insulated Mfts. List No.	Order Code
3KΩ ±1%	3988 ±1%	B57867S302F140	679-380	B57861S302F40	679-422
5KΩ ±1%	3988 ±1%	B57867S502F40	679-392	B57861S502F40	679-434
10KΩ ±1%	3988 ±1%			B57861S103F40	679-446
30KΩ ±1%	3964 ±1%	B57867S303F40	679-410	B57861S303F40	679-458
100KΩ ±1%	4540 ±1%	B57867S104F140	387-8715	B57861S104F40	387-8727

207339

Resistance @ 25°C	Leads	Order Code	Price Each 1+	50+	100+	250+	+
3KΩ	Non-insulated	**679-380**●	7.44	6.84	6.09	3.72	– –
5KΩ	Non-insulated	**679-392**●	7.77	7.14	6.33	3.90	– –
10KΩ	Non-insulated	**679-409**●	7.77	7.14	6.33	3.90	– –
30KΩ	Non-insulated	**679-410**●	7.44	6.84	6.09	3.72	– –
100KΩ	Non-insulated	**387-8715**●	6.39	5.85	5.22	3.72	– –

Resistance @ 25°C	Leads	Order Code	Price Each 1+	50+	100+	250+	+
3KΩ	PTFE-insulated	**679-422**●	7.80	7.02	6.33	3.90	– –
5KΩ	PTFE-insulated	**679-434**●	7.80	7.02	6.33	3.90	– –
10KΩ	PTFE-insulated	**679-446**●	7.80	7.02	6.33	3.90	– –
30KΩ	PTFE-insulated	**679-458**●	8.13	7.32	6.60	4.05	– –
100KΩ	PTFE-insulated	**387-8727**●	6.69	6.03	5.43	3.90	– –

NTC

A range of disc NTC thermistors for limiting of in-rush currents in communications and industrial applications.

9.5mm Series Dia. = 9.5mm max., Lead L = 36mm, Lead spacing = 5.0mm
11.5mm Series Dia. = 11.5mm max., Lead L = 36mm, Lead spacing = 5.0mm
15.0mm Series Dia. = 15mm max., Lead L = 32mm, Lead spacing = 7.5mm

Resistance ±20% @ 25°C	Max. Cont. Current @ 25°C	Beta Value 25°C to 100°C ±3%	Mftrs. List No.	Order Code
9.5mm Disc				
5R	4.2A	2800	B57235S509M	**975-1866**
10R	3A	2900	B57235S100M	**975-1874**
11.5mm Disc				
5R	4.5A	2800	B57236S509M	**975-1882**
20R	3.3A	3300	B57236S200M	**975-1890**
25R	3A	3300	B57236S250M	**975-1904**
15mm Disc				
2.2R	7A	–	B57237S229M	**975-4148**
2.5R	6.5A	–	B57237S259M	**975-4156**
4.7R	5.1A	–	B57237S479M	**975-4164**
7R	4.2A	–	B57237S709M	**975-4180**
10R	3.7A	–	B57237S100M	**975-4199**
15R	3A	–	B57237S150M	**975-4202**
22R	2.8A	–	B57237S220M	**975-4210**
33R	2.5A	–	B57237S330M	**975-4229**
21mm Disc				
5R	5A	–	B57237S509M	**975-4172**

234990

	Order Code	Price Each 1+	50+	100+	250+	+
9.5mm Disc	**All Order Codes** ●	1.85	1.58	1.33	1.09	– –
11.5mm Disc	**All Order Codes** ●	2.46	2.13	1.80	1.48	– –
15mm Disc	**All Order Codes** ●	2.70	2.07	1.95	1.59	– –

NTC

L = 19, W (O/D) = 8.5, H = 6.5, Hole dia. = 3.7, Lead L = 32

NTC thermistors for high accuracy surface temperature measurement, for example, on housings and pipes. Good thermal coupling through metal tag. PTFE insulated leads.

Resistance @ 25°C 5KΩ ±2% (387-8739) 10KΩ ±2% (730-051) Beta Value 25°C - 100°C 3920 ±1.5% Max. power @ 25°C 150mW

207341

Mftrs. List No.	Order Code	Price Each 1+	25+	50+	100+	+
B57703M502G40	**120-0455**●	9.12	8.30	7.57	6.75	– –
B57703M103G	**120-0456**●	6.98	6.35	5.80	5.17	– –

Max. Power	Resistance ±5% @ 25°C	Beta Value 25°C to 100°C, ±3%	Mfts. List No.	Order Code
150mW	30Ω	3964	B57703M303G40	111-2823

423507

Resistance @ 25°C	Order Code	Price Each 1+	50+	100+	250+	+
30Ω	NEW **111-2823**●	11.46	10.29	9.57	7.42	– –

NTC

Dia. = 5.5 max, Lead L = 36, Lead spacing = 5.0

A range of disc NTC thermistors for temperature compensation, measurement and control.

Max Power @ 25°C 450mW

Resistance ±5% @ 25°C	Beta Value 25°C to 100°C, ±3%	Mfts. List No.	Order Code
100Ω	3200	B57164K101J	975-3400
1KΩ	3730	B57164K102J	975-3419
10KΩ	4300	B57164K103J	975-3435
470KΩ	5000	B57164K474J	975-3451

207343

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

Resistance @ 25°C	Order Code	Price Each 1+	50+	100+	250+	+
100Ω	**975-3400●**	1.86	1.58	1.30	1.04	– –
1KΩ	**975-3419●**	1.86	1.58	1.30	1.04	– –
10KΩ	**975-3435●**	1.86	1.58	1.30	1.04	– –
470KΩ	**975-3451●**	1.86	1.58	1.30	1.04	– –

NTC

Surface mount NTC thermistors suitable for temperature compensation, sensing and protection applications. SIze 0805 chips supplied on 8mm blister tape, suitable for wave or reflow soldering (reel=4K pieces).

- High sensitivity
- High accuracy over wide temperature range

0805 size: H=2.0, W=1.25, D=1.25, Terminations W=0.5 ±0.25

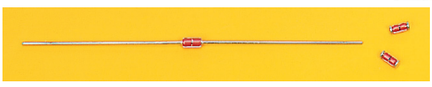
Max. power @ 25°C	210mW	Operating temperature	-55°C to +150°C
Climatic category	40/125/56	Terminations	Silver palladium

Resistance ±5% @ 25°C	Beta Value (K) 25°C to 85°C	Mftrs. List No.	Order Code
47KΩ	4090 ± 3%	238161513473	118-7093
100KΩ	3650 ± 1%	238161513104	118-7095
470KΩ	4130 ± 1%	238161513474	118-7097

207345

	Price Each 5+	100+	300+	1K+	+
All Order Codes ●	1.53	1.14	0.94	0.75	– –

NTC



SOD80 package: L=3.7 max, ∅=1.7 max.
SOD27 package: L=4.25 max, ∅=1.85 max,
Leads L=25.4, ∅=0.56

- Small diameter, leaded and surface mount devices
- Quick response to temperature change
- Wide temperature range from -40°C to +300°C
- Resistant to corrosive atmosphere and harsh environments
- High stability over a long life

NTC thermistors in glass envelope suitable for high temperature measurement control, for industrial process control and domestic and automotive applications.

Package	Resistance @ 25°C	Beta Value to 25°C to 85°C	Mfts. List No.	Order Code
SOD-80(SMD)	100KΩ	3977K±1.3%	2322 633 53104	984-620
SOD-27(leaded)	10KΩ	3977K±1.3%	2322 633 83103	984-632
SOD-27(leaded)	100KΩ	3977K±1.3%	2322 633 83104	984-644

207346

Resistance @ 25°C	Order Code	Price Each 1+	10+	100+	300+	+
100KΩ	SMD **984-620**	1.64	1.47	1.20	0.75	– –
10KΩ	**984-632**	1.64	1.41	1.14	0.72	– –
100KΩ	**984-644**	1.64	1.41	1.14	0.72	– –

NTC

5% tol. Series
L=4 (typ.), W=3.5 (typ.), D=3 (max)
Lead pitch=2.54, Lead=17 (min)

2% and 1% tol. Series
L=4 (typ.), W=3.4 (max.), D=2.7 (max)
Lead pitch=2.54, Lead L=38 (min)

NTC thermistors for temperature sensing and control, featuring accuracy over a wide temperature range and good stability.

Tolerance on R25 value	±5%, ±2%, ±1%
Rated dissipation	500mW (5% tol. Series), 100mW (2% and 1% tol. Series)
Operating temp. range	-40°C to +125°C (at zero power, continuously) 0°C to 55°C (at max. power)

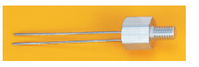
Colour code on 2322-640-5xxx Series: 2.7kΩ=Red, 4.7kΩ=Green, 10kΩ=Blue, 100kΩ=Brown

Resistance @ 25°C	Beta Value 25°C to 85°C	Mfts. List No.	Order Code
2.2KΩ ±5%	3977K ±0.75%	238164063222	118-7025
3.3KΩ ±5%	3977K ±0.75%	238164063332	118-7026
4.7KΩ ±5%	3977K ±0.75%	238164063472	118-7027
10KΩ ±5%	3977K ±0.75%	238164063103	118-7031
33KΩ ±5%	4090K ±1.5%	238164063333	118-7032
100KΩ ±5%	4190K ±2%	238164063104	118-7033
330KΩ ±5%	4570K ±3%	238164063334	118-7034
4.7KΩ ±2%	3977K ±0.75%	238164054472	118-7035
10KΩ ±2%	3977K ±0.75%	238164054103	118-7036
100KΩ ±2%	4190K ±2%	238164054104	118-7037
2.7KΩ ±1%	3977K ±0.75%	238164055272	118-7038
10KΩ ±1%	3977K ±0.75%	238164055103	118-7039

207347

Tol.		Order Code	Price Each 1+	10+	100+	300+	+
±5%	2.2	**118-7025●**	1.43	1.27	1.01	0.81	– –
	3.3	**118-7026●**	1.43	1.27	1.01	0.81	– –
	4.7	**118-7027●**	1.43	1.27	1.01	0.81	– –
	10	**118-7031●**	1.43	1.27	1.01	0.81	– –
	33	**118-7032●**	1.43	1.27	1.01	0.81	– –
	100	**118-7033●**	1.43	1.27	1.01	0.81	– –
	330	**118-7034●**	1.43	1.27	1.01	0.81	– –
±2%	4.7	**118-7035●**	2.63	2.11	1.71	1.26	– –
	10	**118-7036●**	2.77	2.54	1.66	1.27	– –
	100	**118-7037●**	2.77	2.54	1.66	1.27	– –
±1%	2.7	**118-7038●**	4.30	3.97	3.19	2.41	– –
	10	**118-7039●**	4.30	3.97	3.19	2.41	– –

NTC



Body: L=81, Dia=hex 8A/F
Thread: M4, L=5.5,
Leads: L=34, Dia=0.6

- Good insulation and/or good thermal contact with chassis
- Easy mounting
- Wide range of temperature sensing and control applications
- Rugged construction

Disc NTC thermistor is mounted in the head of the M4 aluminium screw.

Resistance @ 25°C	Beta Value 25°C to 85°C	Mfts. List No.	Order Code
1KΩ	3528K ±0.5%	238164073102	118-7098
4.7KΩ	3977K ±0.75%	238164073472	118-7099
10KΩ	3977K ±0.75%	238164073103	118-7100
47KΩ	4090K ±1.5%	238164073473	118-7101

207348

Resistance @ 25°C	Order Code	Price Each 1+	10+	100+	300+	+
1KΩ	**118-7098●**	10.51	9.60	7.84	5.89	– –
4.7KΩ	**118-7099●**	10.51	9.60	7.84	5.89	– –
10KΩ	**118-7100●**	10.51	9.60	7.84	5.89	– –
47KΩ	**118-7101●**	10.51	9.60	7.84	5.89	– –

NTC

Dia. = 10, Leads L = 35, Spacing = 5 ± 1

NTC disc thermistors designed for use in temperature measurement, control and compensation applications.

Temperature, max.	+125°C	Rated dissipation @ 25°C	900mW
Dissipation factor	9W/°C		

Resistance	Beta Value 25°Cto 100°C	Mfts. List No.	Order Code
220Ω ± 10%	3650 ± 3%	KED221CY	731-330
330Ω ± 10%	3750 ± 3%	KED331CY	731-341
1kΩ ± 10%	4000 ± 3%	KED102CY	151-117
2.2kΩ ± 10%	4150 ± 3%	KED222CY	151-118
10kΩ ± 10%	4400 ± 3%	KED103CY	151-120

207350

	Price Each 1+	25+	50+	100+
All Order Codes	1.61	1.56	1.44	1.17

NTC
B57560 Series

Lead - length 67mm, Dia. 0.3mm
Bead - length 4.1mm,Dia. 2.3mm

- Sealed glass body
- Durmet wire connections
- Temperature measurement devices designed for high temperature and short response times

Climatic Category (IEC 60068-1)	55/300/56
Temperature range	-55°C to +300°C
Rated temperature	25°C
Dissipation factor (air)	approx. 1.3
Thermal time constant	approx. 15
Heat capacity	approx. 20

234234

Resistance Ω ±1%	Mftrs. List No.	Order Code	Price Each 1+	50+	100+	250+	+
5K	B57560G502F	**387-8703●**	8.97	8.07	6.45	4.62	– –
10K	B57560G103F	**387-8685●**	8.97	8.07	6.45	4.62	– –
100K	B57560G104F	**387-8697●**	8.97	8.07	6.45	4.62	– –

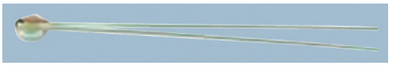
RoHS ● Compliant ◄ Non-compliant ‡ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

NTC

B57540 Series

EPCOS



NEW

Lead - length 65mm, Dia. 0.15mm
Bead - length 1.4mm,Dia. 0.8mm

- Sealed glass body
- Durmet wire connections
- Temperature measurement devices designed for high temperature and short response times

Climatic Category (IEC 60068-1)	55/250/56(55/250/56)	Dissipation factor (air)	approx. 0.4mWK
Temperature range	-55°C to +200°C	Thermal time constant (air)	approx. 3 sec.
Rated temperature	25°C	Max. power at 25°C	18mW

386515

Resistance Ω ±1%	Mftrs. List No. **Order Code**	Price Each 1+	50+	100+	250+	+
5K	B57540G502J**882-9535**●	13.38	12.01	10.16	9.21	– –
10K	B57540G103J**882-9543**●	13.38	12.01	10.16	9.21	– –
20K	B57540G203J**882-9551**●	13.38	12.01	10.16	9.21	– –
30K	B57540G303J**882-9560**●	13.38	12.01	10.16	9.21	– –
50K	B57540G503J**882-9578**●	13.38	12.01	10.16	9.21	– –
100K	B57540G104J**882-9586**●	13.38	12.01	10.16	9.21	– –
230K	B57540G234J**882-9594**●	13.38	12.01	10.16	9.21	– –

NTC, Glass Bead

THERMOMETRICS

Type GL
Bead dia=2.5, L=10, Lead L=25

Type GM
Bead dia=1.6, L=5, Lead L=25

Type GL: Incorporate a directly heated bead in a solid glass pellet, suitable for general use in temperature measurement, control, compensation and flow measurement.

Type GM: Highly sensitive glass encapsulated directly heated bead thermistors, particularly suited for applications where small size and fast response are important, such as crystal oscillators, industrial boilers and monitoring fluid flow.

Type	Resistance @ T_R			T_A max	Beta Value 25°Cto 85°C	Mfts. List No.	Order Code
GL	2kΩ ±20%	@	20°C	125°C	3125 ±5%	GL23	151-111
GM	4.7kΩ ±20%	@	25°C	200°C	3340 ±3%	GM472W	151-113
GM	47kΩ ±20%	@	25°C	200°C	3940 ±3%	GM473W	151-114
GM	470kΩ ±20%	@	25°C	300°C	4320 ±3%	GM474W	151-115

207351

Type	Resistance @ T_R	**Order Code**	Price Each 1+	25+	50+	100+
GL	2KΩ	**151-111**	20.84	18.81	17.79	16.59
GM	4.7KΩ	**151-113**	13.73	12.45	11.76	10.95
GM	47KΩ	**151-114**	13.73	12.45	11.76	10.95
GM	470KΩ	**151-115**	13.60	12.63	12.42	11.42

NTC – 'Surge-Gard' Inrush Current Limiters

RHOPOINT COMPONENTS

- Capable of suppressing high inrush current surges
- Very high ratio of cold resistance to steady state resistance

- Especially suitable for applications with a high current surge at turn-on
- Applications: power supplies, electric motors, lighting circuits, thermostat protection

Manufactured with metal oxide ceramic material.
Maximum operating temperature 65°C.

Steady State Current I max.	Resistance (Ω) Cold @ 25°C	Hot @ I max.	Dia (max.)	Dimensions Thickness (max.)	Lead Dia.	Mftrs. List No.	Order Code
1.75A	20	0.6	12.7	6.4	0.8	SG230	118-6601
2A	40	0.6	15.9	6.4	0.8	SG240	118-6602
3A	10	0.2	12.4	7.6	0.8	SG220	118-6603
4A	7	0.15	15.2	7.6	1.0	SG210	118-6604
4A	12	0.22	12.7	8.9	1.0	SG39	118-6605
6A	10	0.15	15.2	8.9	1.0	SG27	118-6606
7A	5	0.07	15.2	6.4	0.8	SG200	118-6608
8A	4	0.07	15.2	6.4	1.0	SG170	118-6609
15A	2.5	0.03	22.9	7.6	1.0	SG160	118-6610
18A	2	0.03	22.9	8.9	1.0	SG110	118-6611
30A	0.5	0.01	31.8	5.1	1.0	SG260	118-6612

213420

I max	**Order Code**	Price Each 1+	25+	100+	250+
1.75A	**118-6601**●	5.05	4.11	3.69	2.67
2A	**118-6602**●	4.59	3.72	3.30	2.40
3A	**118-6603**●	4.49	3.63	3.24	2.34
4A	**118-6604**●	4.96	4.02	3.57	2.61
4A	**118-6605**●	5.65	4.59	4.11	3.00
6A	**118-6606**●	4.12	3.30	2.94	2.16
7A	**118-6608**●	5.05	4.11	3.69	2.67
8A	**118-6609**●	5.65	4.59	4.11	3.00
15A	**118-6610**●	10.83	8.76	7.86	5.70
18A	**118-6611**●	7.58	6.18	5.49	3.99
30A	**118-6612**●	13.48	10.92	9.81	7.14

NTC, R-T Curve Matched

BETATHERM

Insulated: Dia=2.4 max, Leads L=200
Non-insulated: Dia=2.4 max, Leads L=76

- Small size
- High precision
- Offers advantages in circuit standardisation and replacement without calibration
- Interchangeable
- Exceptional ageing stability
- Available with either insulated or non-insulated leads

'BetaCURVE' matched NTC thermistors have a tight tolerance on their R-T (resistance-temperature) curve over a wide temperature range. Manufacturing and quality assurance techniques maintain tight control of materials and device thermal electrical properties.

Temperature range	-55°C to +150°C
Tolerance over temp. range 0°C to +70°C	±0.2°C
	1.0mW/°C
Time Constant (max. in still air)	10s

Resistance @ 25°C	0 to 50°C Beta Value	0 to 50°C Beta Max. Deviation
1kΩ	3263	0.38%
2.252kΩ, 3kΩ, 5kΩ, 10kΩ	3892	0.32%
30kΩ, 100kΩ	4143	0.30%
1MΩ	4582	0.63%

207354

Resistance @ 25°C	Mftrs. List No.	**Order Code**	Price Each 1+	25+	100+	250+
Non-insulated 76mm Leads						
1kR	1K2A1B	**970-7239**●	9.83	8.40	7.47	5.25
2.252kR	2.2K3A1B	**970-7174**●	9.83	8.40	7.47	5.25
3kR	3K3A1B	**970-7182**●	9.92	8.28	7.08	5.10
5kR	5K3A1B	**970-7190**●	9.92	8.28	7.08	5.10
10kR	10K3A1B	**970-7204**●	9.92	8.28	7.08	5.10
30kR	30K6A1B	**970-7212**●	9.83	8.40	7.47	5.25
100kR	100K6A1B	**970-7220**●	9.92	8.28	7.08	5.10
Insulated 200mm Leads						
2.252kR	2.2K3A359I	**970-7247**●	11.33	9.57	8.46	5.91
3kR	3K3A340I	**970-7255**●	11.33	9.57	8.46	5.91
5kR	5K3A373I	**970-7263**●	11.33	9.57	8.46	5.91
10kR	10K3A5421	**970-7271**●	11.33	9.57	8.46	5.91
30kR	30K6A309I	**970-7280**●	11.33	9.57	8.46	5.91
100kR	100K6A372I	**970-7298**●	11.33	9.57	8.46	5.91

PTC - 0603 Cases

EPCOS

NEW

Features:
- Fast and reliable response
- Suitable for reflow soldering

Applications:
- DC/DC converters
- Temperature management inautomotive electronics
- Over temperature protection of power transistors and power ICs (e.g. in battery pack, notebook)

423501

Tripping temperature	Mftrs. List No.	**Order Codes**	Price Each 5+	100+	250+	500+	+
75°C	B59601A0075A062	**111-2824**●	1.82	1.46	1.24	1.07	– –
85°C	B59601A0085A062	**111-2825**●	1.82	1.46	1.24	1.07	– –
95°C	B59601A0095A062	**111-2826**●	1.82	1.46	1.24	1.07	– –
105°C	B59601A0105A062	**111-2827**●	1.82	1.46	1.24	1.07	– –
115°C	B59601A0115A062	**111-2828**●	1.82	1.46	1.24	1.07	– –
125°C	B59601A0125A062	**111-2829**●	1.82	1.46	1.24	1.07	– –
135°C	B59601A0135A062	**111-2830**●	1.82	1.46	1.24	1.07	– –
75°C	B59601A0075B062	**111-2832**●	1.92	1.56	1.33	1.17	– –
85°C	B59601A0085B062	**111-2833**●	1.92	1.56	1.33	1.17	– –
95°C	B59601A0095B062	**111-2834**●	1.92	1.56	1.33	1.17	– –
105°C	B59601A0105B062	**111-2835**●	1.92	1.56	1.33	1.17	– –
115°C	B59601A0115B062	**111-2836**●	1.92	1.56	1.33	1.17	– –
125°C	B59601A0125B062	**111-2837**●	1.92	1.56	1.33	1.17	– –
135°C	B59601A0135B062	**111-2838**●	1.92	1.56	1.33	1.17	– –

PTC

EPCOS

B59701: H=2.0, W=1.25, D=0.85, Terminations W=0.75 max.

B59607/59707: H=3.2, W=2.5, D=1.7, Terminations W=0.5 ± 0.25

SMD

Surface mount PTC thermistors with silver terminations supplied on tape and reel, suitable for **reflow soldering** only. The very small 25V B59701 Series are for limit temperature sensing, and the 80V 120°C B59707 device is suitable for overcurrent protection, time delay and current stabilisation.

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

C = CYAN M = Magenta Y = Yellow B = Black/SING

	B59701	B59607	B59707
Max. operating voltage	25V (T_A = 0 to 40°C)	30V(T_A = 60°C)	80V(T_A = 60°C)
Rated resistance R_N	≤1KΩ	55Ω	125Ω
Threshold temp. tol. ΔT	±5%	—	—
Resistance	≤5.5KΩ (T_{NAT} -ΔT)	—	—
	≥13.3KΩ (T_{NAT} +ΔT)	—	—
	≥40KΩ (T_{NAT} +15K	—	—
Switching Current	—	90mA, 300mA max.	90mA, 300mA max.

Mftrs. List Nos:

B59701A70A62	=	387-6690	B59701A120A62	=	730-233
B59701A90A62	=	730-166	B59701A130A62	=	387-6743
B59701A100A62	=	387-6718	B59607A120A62	=	387-6767
B59701A110A62	=	730-178	B59707A120A62	=	730-245

207355

Voltage max.	T_{NAT} Threshold Temp. (nom.)	Order Code	Price Each 1+	100+	250+	500+	+
25V	70°C	SMD 387-6690●	1.50	1.11	0.96	0.78	– –
25V	90°C	SMD 730-166●	1.74	1.29	1.11	0.78	– –
25V	100°C	SMD 387-6718●	1.50	1.11	0.96	0.78	– –
25V	110°C	SMD 730-178●	2.01	1.47	1.23	0.96	– –
25V	120°C	SMD 730-233●	1.92	1.41	1.20	0.84	– –
25V	130°C	SMD 387-6743●	1.65	1.20	1.02	0.84	– –
30V	120°C	SMD 387-6767●	1.50	1.11	0.96	0.78	– –
80V	120°C	SMD 730-245●	2.32	1.68	1.41	1.14	– –

PRG Series

NEW

SMD

- Overcurrent Protection device with resettable function
- Chip type PTC thermistor for overcurrent which is suitable for countermeasure for short circuit testing as well as current limiting resistors

Features

- Rapid operation protects the circuit in an overcurrent condition such as a short circuit
- Stable resistance after operation due to ceramic PTC
- Possible to use these products as current limiting resistors with overcurrent protection functions

Operating temperature -10°C to 60°C

Resistance Ω	Voltage V	Trip Current mA	Max. Current mA	Length	Width	Depth	Mfts. List No.	Order Code
0.2	6	2000	10000	2	1.25	0.9	PRG21BC0R2MM1RA	111-5060
15	20	140	1600	2	1.25	1.25	PRG21BB150MB1RK	111-5058
22	20	110	1100	2	1.25	1.25	PRG21BB220MB1RK	111-5059
33	24	85	900	1.6	0.8	0.8	PRG18BB330MB1RB	111-5055
47	24	75	630	1.6	0.8	0.8	PRG18BB470MB1RB	111-5056
100	24	55	300	1.6	0.8	0.8	PRG18BB101MB1RB	111-5052
220	24	35	130	1.6	0.8	0.8	PRG18BB221MB1RB	111-5053
470	24	25	60	1.6	0.8	0.8	PRG18BB471MB1RB	111-5057

423339

Order Code	Price Each 5+	100+	250+	500+	+
All Values ●	1.69	1.24	1.11	1.01	– –

PTC

EPCOS

A range of leaded disc PTC thermistors designed for over current and short-circuit protection applications, B/F recognised

Lead L=35 (min.), Lead spacing=5.08

Rated Current I_N (mA)	Switching Current I_S (mA)	R_{25} ± 25% Ω	$d_{max.}$ (mm)	Mftrs.List No.	Order Code
V Ref = 24V, V max, = 30V, T ref. = 120°C					
1300	2600	0.45	17.5	B59945C120A70	975-3052
850	1700	0.8	13.5	B59955C120A70	975-3060
600	1200	1.2	11.0	B59965C120A70	975-3079
450	900	1.8	9.0	B59975C120A70	975-3087
250	500	4.6	6.5	B59985C120A70	975-3095
120	240	13	4.0	B59995C120A70	975-3109
V Ref = 63V, V max, = 80V, T ref. = 120°C					
700	1400	1.65	22.0	B59930C120A70	975-3117
450	900	2.3	17.5	B59940C120A70	975-3125
320	640	3.7	13.5	B59950C120A70	975-3133
250	500	5.6	11.0	B59960C120A70	975-3141
150	300	9.4	9.0	B59970C120A70	975-3150
85	170	25	6.5	B59980C120A70	975-3168
50	100	55	4.0	B59990C120A70	975-3176
V Ref = 110V, V max, = 160V, T ref. = 160°C					
800	1600	2.6	26.0	B59810C160A70	975-3184
525	1050	3.7	22.0	B59830C160A70	975-3192
400	800	6	17.5	B59840C160A70	975-3206
250	500	10	13.5	B59850C160A70	975-3214
V Ref = 110V, V max, = 160V, T ref. = 160°C					
180	360	15	11.0	B59860C160A70	975-3222
125	250	25	9.0	B59870C160A70	975-3230
70	140	70	6.5	B59880C160A70	975-3249
35	70	150	4.0	B59890C160A70	975-3257
V Ref = 220V, V max, = 265V, T ref. = 120°C					
650	1300	2.6	26.0	B59810C120A70	975-3265
200	400	10	13.5	B59850C120A70	975-3273
140	280	15	11.0	B59860C120A70	975-3281
100	200	25	9.0	B59870C120A70	975-3290
80	160	35	9.0	B59872C120A70	975-3303
55	110	65	9.0	B59875C120A70	975-3311
55	110	70	6.5	B59880C120A70	975-3320
30	60	150	4.0	B59890C120A70	975-3338

207356

Rated Current I_N	Order Code	Price Each 1+	100+	250+	500+	+
1300mA	975-3052●	4.56	4.15	3.78	3.37	– –
850mA	975-3060●	2.42	2.20	2.01	1.79	– –
600mA	975-3079●	3.05	2.77	2.53	2.26	– –
450mA	975-3087●	2.64	2.40	2.19	1.95	– –
250mA	975-3095●	2.31	2.10	1.91	1.71	– –
120mA	975-3109●	1.81	1.65	1.50	1.34	– –
700mA	975-3117●	6.51	5.92	5.40	4.82	– –
450mA	975-3125●	4.78	4.35	3.97	3.54	– –
320mA	975-3133●	3.87	3.52	3.21	2.87	– –
250mA	975-3141●	3.05	2.77	2.53	2.26	– –
150mA	975-3150●	2.64	2.40	2.19	1.95	– –
85mA	975-3168●	2.31	2.10	1.91	1.71	– –
50mA	975-3176●	1.81	1.65	1.50	1.34	– –
800mA	975-3184●	10.29	9.60	8.75	7.80	– –
525mA	975-3192●	7.14	6.67	6.09	5.43	– –
400mA	975-3206●	5.34	5.10	4.65	4.15	– –
250mA	975-3214●	4.02	3.75	3.42	3.05	– –
180mA	975-3222●	3.36	3.07	2.80	2.50	– –
125mA	975-3230●	3.21	3.00	2.74	2.44	– –
70mA	975-3249●	2.68	2.47	2.26	2.01	– –
35mA	975-3257●	1.90	1.72	1.57	1.40	– –
650mA	975-3265●	9.39	8.55	7.80	6.95	– –
200mA	975-3273●	4.05	3.82	3.49	3.11	– –
140mA	975-3281●	3.48	3.22	2.94	2.62	– –
100mA	975-3290●	3.21	3.00	2.74	2.44	– –
80mA	975-3303●	3.21	3.00	2.74	2.44	– –
55mA	975-3311●	2.60	2.36	2.15	1.92	– –
55mA	975-3320●	2.70	2.55	2.33	2.07	– –
30mA	975-3338●	2.34	2.17	1.98	1.77	– –

PTC

EPCOS

Overall length=30.0 min., Lead length=25.0 min. Body length=6.0, Lead diameter=0.4.

Positive temperature coefficient thermistors designed for temperature measurement and control applications in low voltage circuits. Coated thermistor disc with tinned leads. Marked with coded nominal threshold temperature. Extremely fast response due to small dimensions.

Maximum operating voltage @ 40°C ambient	30V dc	Operating temperature range V = 0	-25 to +125°C
Maximum measuring voltage	705V dc	V = Vmax	0 to +40°C
Rated resistance	≤250Ω	Response time	<3 sec.

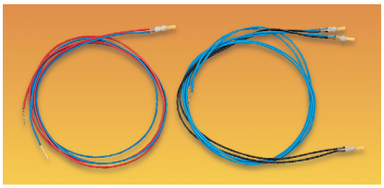
Mftrs. List No.	Order Code
B59008-C80-A40	387-6640
B59008C90A40	380-9109
B59008-C100-A40	387-6664
B59008C110A40	380-9936
B59008C120A40	380-9950

234122

Threshold Temp. T_{NAT}	Type/stamp code	Order Code	Price Each 1+	50+	100+	250+
80°C	C8 h	387-6640	3.00	2.55	2.25	1.95
90°C	C8 i	380-9109	3.00	2.55	2.25	1.95
100°C	C8 j	387-6664	3.00	2.55	2.25	1.95
110°C	C8 k	380-9936	3.00	2.55	2.25	1.95
120°C	C8 l	380-9950	3.00	2.55	2.25	1.95

PTC, Single and Triple

EPCOS



L = 14, Dia. = 4, Lead L = 500, Connecting lead (triple types) L = 200

● Compliant
◄ Non-compliant
‡ Limited stock - RoHS replacement available

RoHS

C = CYAN M = Magenta Y = Yellow B = Black/SING

- Insulating encapsulation suitable for protection of windings in electric motors and similar applications up to 30V
- Available either singly or triple, ie.three thermistors connected in series
- Trip temperature is coded in litz wire colour
- Wires are silver plated and PTFE insulated

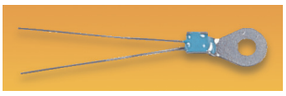
Max. operating voltage	30V (T_A = 0 to 40°C)
Rated resistance R_N	≤100Ω (single), ≤300Ω (triple)
Threshold temperature tol. ΔT	±5%
Resistance @ T_{NAT} -ΔT	≤550Ω (each device)
Resistance @ T_{NAT} +ΔT	≥1330Ω (each device)
Resistance @ T_{NAT} +15K	≥4KΩ (each device)
Colour coding	100°C = red/red, 130°C = blue/blue, 160°C = blue/red, all connecting wires (triple types) = black

207357

T_{NAT} Threshold Temp. (nom)	Mftrs. List No.	Order Code	Price Each 1+	25+	50+	100+	+
Single							
100°C	B59155M100A70	**121-8959●**	12.61	9.96	7.69	5.67	– –
130°C	B59155M130A70	**121-8960●**	12.61	9.96	7.69	5.67	– –
160°C	B59155M160A70	**121-8961●**	13.11	10.84	8.37	6.17	– –
Triple							
100°C	B59355M100A70	**730-130●**	32.25	24.36	18.96	11.13	– –

PTC

EPCOS



Overall length=50.0 min., Lead length=32.0 min. Body length=6.0, Lead diameter=0.5, Tab diameter=8.5, Hole diameter=3.7

Positive temperature coefficient thermistors designed for temperature measurement and control applications in low voltage circuits. Mounted on tinned brass tags for ease of installation.

Resistance	@ 25°C = 100Ω max.	Maximum operating voltage	
	@ T_{NAT} -5°K = 550Ω max.	@ 40°C ambient	30V dc
	@ T_{NAT} +5°K = 1330Ω max.	Insulation test voltage	500V/5s
Maximum PTC voltage	2.5V dc	Operating temperature	-25°C to +155°C

Mftrs. List Nos: B59901D90A40 = 218-832, B59901D130A40 = 218-870

207358

Threshold Temp. T_{NAT}	Order Code	Price Each 1+	100+	250+	500+
90°C	**218-832●**	4.20	3.21	2.46	1.95
130°C	**218-870●**	4.32	3.24	2.52	1.83

PTC

BC COMPONENTS

A range of leaded disc thermistors with positive temperature coefficient primarily intended for overload protection of equipment such as motors, transformers, lamps, rechargeable batteries and power supplies.

Switch temperature	T_S = 140°C (all types)
Rated temperature range	
Low voltage range	-40°C to +85°C
Mains voltage range	0 to 70°C

I_{nt} @ 25°C (mA)	I_t @ 25°C (mA)	R_{25} ± 25% (Ω)	I_{max} (A)	d_{max} (mm)	Mftrs.List No.	Order Code
Low Voltage, Vmax = 30V dc (except 478-090 = 60V)						
130	195	25	1.2	4.6	238166051311	118-7068
270	405	6	2.5	4.6	238166052711	118-7069
320	480	5	3.5	6.5	238166153211	118-7070
410	615	3	4.5	6.5	238166154111	118-7071
470	705	2.5	5	8.5	238166154711	118-7072
700	1050	1.3	8	10.5	238166257011	118-7073
920	1380	0.9	11	12.5	238166259211	118-7074
1170	1755	0.7	13.5	16.5	238166351121	118-7075
Mains Voltage, Vmax = 265V rms						
11	17	3000	0.08	5	238166051193	118-7076
19	29	1200	0.14	5	238166051993	118-7078
28	42	500	0.2	5	238166052893	118-7079
39	59	260	0.3	5	238166053993	118-7080
76	115	85	0.55	5	238166057693	118-7081
110	165	48	0.65	7	238166151113	118-7082
170	255	22	0.9	8.5	238166151713	118-7083
320	480	8.4	2.2	12.5	238166253213	118-7084
700	1050	2.8	5.5	20.5	238166457013	118-7085

207359

	Trip current @ 25°C	Order Code	Price Each 1+	10+	100+	300+	+
Low Voltage							
238166051311	195mA	**118-7068●**	2.29	2.02	1.76	1.49	– –
238166052711	405mA	**118-7069●**	2.83	2.64	2.15	1.59	– –
238166153211	480mA	**118-7070●**	3.35	3.06	2.51	1.89	– –
238166154111	615mA	**118-7071●**	3.35	3.06	2.51	1.89	– –
238166154711	705mA	**118-7072●**	3.35	3.06	2.51	1.89	– –
238166257011	1050mA	**118-7073●**	4.13	3.74	3.06	2.34	– –
238166259211	1380mA	**118-7074●**	4.13	3.74	3.06	2.34	– –
238166351121	1755mA	**118-7075●**	9.54	8.72	7.06	5.34	– –
Mains Voltage							
238166051193	17mA	**118-7076●**	2.02	1.78	1.55	1.31	– –
238166051993	29mA	**118-7078●**	2.83	2.64	2.15	1.59	– –
238166052893	42mA	**118-7079●**	2.83	2.64	2.15	1.59	– –
238166053993	59mA	**118-7080●**	2.83	2.64	2.15	1.59	– –
238166057693	115mA	**118-7081●**	2.02	1.78	1.55	1.31	– –
238166151113	165mA	**118-7082●**	3.35	3.06	2.51	1.89	– –
238166151713	255mA	**118-7083●**	3.35	3.06	2.51	1.89	– –
238166253213	480mA	**118-7084●**	3.84	3.37	2.95	2.49	– –
238166457013	1050mA	**118-7085●**	12.92	12.34	10.12	7.58	– –

PTC

THERMOMETRICS

L = 12, Dia. = 4. Leads L = 500

- Detect excessive temperatures inside industrial equipment
- Especially suitable for within windings of electromagnetic equipment

Resistance, nom	1000Ω @ T_{NF}, 550Ω @ T_{NF} -5°C 1330Ω @ T_{NF} +5°C, 4000Ω @ T_{NF} +15°C
Ambient temperature	-25°C to T_{NF} +15°C
Typ. dissipation constant	20mW/°C (embedded), 5.5mW/°C (free air @ 25°C)

Switch Temperature T_{NF}	Lead Colours	Mftrs. List No.	Order Code
90°C	Green-green	YGA090TB	731-420
100°C	Red-red	YGA100TB	731-432
120°C	Grey-grey	YGA120TB	731-444
160°C	Blue-red	YGA160TB	731-468

207360

	Price Each 1+	25+	100+	250+	+
All Order Codes	5.18	4.95	4.59	3.69	– –

Temperature Sensing Resistors

PTC Chip – LT73 Series

tyco/Electronics CTEC

H=1.6, W=0.8, D=0.45
Terminations W=0.3

- Highly linear PTC response to temperature change
- Each part is individually value marked in black over orange
- Applications include temperature compensation and thermal protection
- TCRs at 3000 ppm and 3900 ppm meet internationally recognised standards

SMD

Linear PTC chip for thermal sensing. The tiny 0805 size thin film temperature sensor is manufactured by depositing a special alloy, ensuring long life stability. Supplied on 8mm tape.

Resistance tolerance	±5%	Temperature coefficient	3000 or 3900ppm/°C
Rated Power @ 70°C	0.1 watt to zero @ 120°C	TCR measurement range	+25°C to +75°C
Working voltage	50V max.	TCR tolerance	±10%
Overload voltage	100V max.	Insulation resistance	>10MR
Operating temperature	-40°C to +125°C		

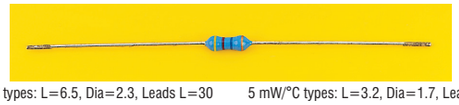
Resistance @ 25°C	Resistance @ 70°C	TCR	Order Code
680R	799R	±3900ppm/°C	117-4314
1000R	1135R	±3000ppm/°C	117-4311
1000R	1175R	±3900ppm/°C	117-4315
1500R	1763R	±3900ppm/°C	117-4316
2000R	2270R	±3000ppm/°C	117-4312
2000R	2351R	±3900ppm/°C	117-4317
3000R	3405R	±3000ppm/°C	117-4313
3000R	3526R	±3900ppm/°C	117-4318

207361

Order Code	Price Each 5+	25+	100+	500+	+
All Values ●	1.48	1.26	1.07	0.69	– –

PTC, Axial Lead

tyco/Electronics SIGMA INDUCTORS



9 mW/°C types: L=6.5, Dia=2.3, Leads L=30 5 mW/°C types: L=3.2, Dia=1.7, Leads L=30

- Resistance value increases linearly with temperature rise
- Applications include temperature compensation in sensitive electronic circuits
- Available ratings 0.25W and 0.17W

Heat dissipation	0.25W = 9mmW/°C, 0.25W = 5mW/°C
Time constant	0.25W = 7.5s, 0.25W = 7.5s
Standard resistance @ 25°C	1kR, 5.1kR, ±5%
Temperature coeffficient	0.3%/°C @ 25°C (3000ppm/°C) ± 10%
Resistance ratio	R25°C/R125°C = 1.37
Operating temperature range	-40°C to +125°C
High temperature stability	1000 hours@125/C, 0.5 @ 125°C, 0.5% ΔR
Insulation resistance	>10GR

207362

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

Standard Resistance	Heat Dissipation mW/°C	Order Code	Price Each 1+	25+	100+	250+
1K	9	**117-4306**	3.86	3.09	3.02	2.02
10K	9	**117-4308**	3.86	3.09	3.02	2.02
1K	5	**117-4309**	3.86	3.09	3.02	2.02
5K1	5	**117-4310**	3.86	3.09	3.02	2.02

Carbon Skeleton Trimmers

0.1 Watt – PVZ2 Series Ultra Small

H = 0.9, W = 2.1, D = 2.7

- Ultra small SMD carbon trimmer compatible with automatic adjustment and reflow soldering
- Lead free construction with gold terminations, suitable for lead free applications/process
- Special resin substrate withstands reflow solder process
- Trimming tool (KMDR090) also available, see **Order Code 353-1776**

Power rating @ 50°C	0.1W	Temperature coefficient	± 500ppm/°C
Resistance tolerance	±30%	Operating temperature	-25°C to +85°C
Maximum voltage	50V d.c.	Rotation angle mechanical	240°±30°

Stocked in the following OHMIC Values:

500R = **353-1454** 3K = **353-1480** 20K = **353-1510** 200K = **353-1557** 500K = **353-1570**
1K = **353-1466** 5K = **353-1491** 50K = **353-1533** 300K = **353-1569** 1M = **353-1582**
2K = **353-1478** 10K = **353-1508** 100K = **353-1545**

227168

Order Code	Price Each 5+	50+	100+	500+	+
All Values	1.23	0.91	0.88	0.57	– –

0.1 Watt – PVZ3 Series

H = 1.8, W = 3.1, D = 3.6

- Single turn carbon trimmer in 3.1 square SMD package
- Excellent solderability due to special plating technique used on terminators
- Substrate design prevents wicking of flux onto the top of the part
- Compatible with in-process automatic adjustment

Power rating @ 50°C	0.1W	Temperature coefficient	± 500ppm/°C
Resistance tolerance	±30%	Operating temperature	-25°C to +85°C
Maximum voltage	50V d.c.	Rotation angle mechanical	230°±10°

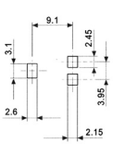
Stocked in the following OHMIC Values:

200R = **353-1594** 2K = **353-1636** 20K = **353-1673** 100K = **353-1703** 500K = **353-1739**
300R = **353-1600** 3K = **353-1648** 30K = **353-1685** 200K = **353-1715** 1M = **353-1740**
500R = **353-1612** 5K = **353-1650** 50K = **353-1697** 300K = **353-1727** 2M = **353-1752**
1K = **353-1624** 10K = **353-1661**

227171

Order Code	Price Each 5+	50+	100+	500+	+
All Values	0.19	0.17	0.14	0.13	– –

0.1 Watt – N6L Series 6mm Enclosed Surface Mount



N6L Top adjust
H=5.2, W=6.4, D=8.7

- Low cost fully enclosed
- Carbon on polyester film
- Stable precise resistive track
- Easy to handle design
- Spindle available for easy adjustment

Power rating @ 50°C	0.1W	Contact resistance variation	5% or 3Ω whichever is greater
Tolerance	±30%	Mechanical rotation (nom.)	280°
Maximum voltage	100V d.c	Operating temperature	-25°C to +70°C

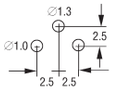
Stocked in the following OHMIC Values:

1K = **445-2161** 5K = **445-2173** 10K = **445-2185** 50K = **445-2197** 100K = **445-2203**

311955

	Order Code	Price Each 5+	50+	100+	1K+
Trimmers	All Values	0.59	0.52	0.46	0.39
9mm Spindle	445-2215	0.72	0.63	0.57	0.52

0.1 Watt – N6 Series 6mm Enclosed



N6S Side adjust
H=8.7, W=6.4, D=5.2

N6S Top adjust
H=5.2, W=6.4, D=8.7

- Low cost fully enclosed
- Carbon on polyester film
- Stable precise resistive track
- Easy to handle design

Power rating @ 50°C	0.1W	Contact Resistance Variation	5% or 3Ω whichever is greater
Tolerance	±30%	Rotation (nominal)	280° Mechanical
Maximum Voltage	100V d.c	Operating temperature	-25°C to +70°C

Stocked in the following OHMIC Values:

N6S Side Adjust

100R = **643-336** 1K = **643-361** 10K = **643-397** 100K = **643-427** 470K = **643-440**
220R = **643-348** 2K2 = **643-373** 22K = **643-403** 220K = **643-439** 1M = **643-452**
470R = **643-350** 4K7 = **643-385** 47K = **643-415**

N6L Top adjust

220R = **643-210** 2K2 = **643-245** 10K = **643-269** 47K = **643-282** 470K = **643-312**
470R = **643-221** 4K7 = **643-257** 22K = **643-270** 100K = **643-294** 1M = **643-324**
1K = **643-233**

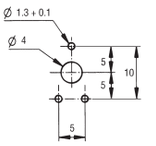
Mftrs. List No. N6S + Value, N6L + Value

207242

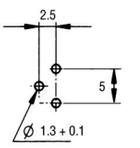
Order Code	Price Each 5+	50+	100+	1K+
All Values	0.59	0.52	0.46	0.39

0.15 Watt – PT10 Series Enclosed Miniature

PT10V PT10H



PT10V
H=4.5, W=10, D=10.3
Height above board=6,
Pins=1.1 x 0.3



PT10H
H=12.1, W=10.3, D=4.5
Height above board=12.1,
Pins=1.1 x 0.3

- Low cost linear trimmer, fully enclosed
- Printed carbon resistive track
- Flame retardant to **UL94V-0**

Power rating @ 40°C	0.15W	Contact resistance variation	≤5%
Voltage rating	200V dc or RMS max.	Temperature coefficient	±1000ppm/°C
Resistance tolerance	±20%	Operating temperature	-25°C to +70°C
End resistance	≤3%	Climatic category	25/70/21

Stocked in the following OHMIC Values:

PT10H Horizontal Adjust Vertical Mount

100R = **614-490** 2K2 = **614-531** 22K = **614-567** 220K = **614-592** 2M2 = **643-142**
220R = **614-506** 4K7 = **614-543** 47K = **614-579** 470K = **614-609** 4M7 = **643-154**
470R = **614-518** 10K = **614-555** 100K = **614-580** 1M = **614-610** 10M = **643-166**
1K = **614-520**

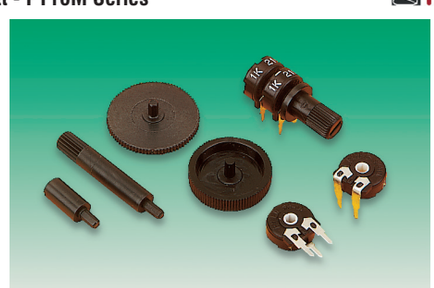
PT10V Vertical Adjust Horizontal Mount

100R = **614-622** 2K2 = **614-660** 22K = **614-695** 220K = **614-725** 2M2 = **643-178**
220R = **614-634** 4K7 = **614-671** 47K = **614-701** 470K = **614-737** 4M7 = **643-180**
470R = **614-646** 10K = **614-683** 100K = **614-713** 1M = **614-749** 10M = **643-191**
1K = **614-658**

207224

Order Code	Price Each 5+	25+	100+	500+
All Values	0.52	0.46	0.44	0.39

0.15 Watt - PT10M Series

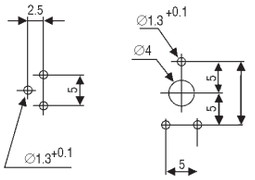


PT10MV top adjust W=10.3, D=10.0, H=4.5
PT10MH side adjust W=10.3, D=4.5, H=12.1

RoHS ● Compliant ◄ Non-compliant ‡ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

PT10MH Switch PT10MV Switch



- Miniature control potentiometers featuring optional plug -in accessories
- Top or side adjustment from both sides
- Hexagonal through hole adjustment
- Switch elements also available separately
- Wide range of spindles and thumbwheels

Resistive element	Carbon on polyester	Resistance tolerance	±20%
Power rating @ 40°C	0.15W	Rotation nominal	220° electrical 235° mechanical
Maximum voltage	200V dc	Rotational life	10,000 operations
Current rating (switch)	10mA	Operating temperature	-25°C to +70°C
Switch type	SPDT		

	Order Code	Price Each 5+	25+	50+	100+	+
PT10MV Top Adjust						
1K	**868-383**	0.79	0.76	0.72	0.52	– –
2K2	**868-395**	0.75	0.72	0.68	0.55	– –
4K7	**868-401**	0.79	0.76	0.72	0.52	– –
10K	**868-413**	0.79	0.76	0.72	0.52	– –
47K	**868-425**	0.79	0.76	0.72	0.52	– –
1M	**868-437**	0.79	0.76	0.72	0.52	– –
PT10MH Side Adjust						
1K	**868-449**	0.79	0.76	0.72	0.52	– –
2K2	**868-450**	0.79	0.76	0.72	0.52	– –
4K7	**868-462**	0.69	0.66	0.62	0.52	– –
10K	**868-474**	0.79	0.76	0.72	0.52	– –
22K	**868-486**	0.79	0.76	0.72	0.52	– –
100K	**868-498**	0.79	0.76	0.72	0.52	– –
Switches		**5+**	**25+**	**100+**	**500+**	
PT10MV	NEW **445-2227**	1.63	1.43	1.37	1.17	
PT10MH	NEW **445-2239**	1.46	1.30	1.24	1.07	

207255

Accessories

	Style	Order Code	Price Each 5+	25+	50+	100+	+
Black Spindles							
Length							
6.75	5121	NEW **445-2306**	0.27	0.26	0.25	0.21	– –
10	5012	**868-504**	0.21	0.20	0.20	0.14	– –
25.5	5121	**868-516**	0.28	0.26	0.25	0.18	– –
12	6064	**868-528**	0.82	0.78	0.75	0.48	– –
White Spindles							
6.75	5121	NEW **445-2355**	0.27	0.26	0.25	0.21	– –
10	5012	NEW **445-2320**	0.23	0.22	0.21	0.17	– –
25.5	5119	NEW **445-2331**	0.27	0.26	0.25	0.21	– –
12	6064	NEW **445-2343**	0.88	0.85	0.85	0.58	– –
Black Thumbwheels							
Diameter							
11.5	5034	NEW **445-2318**	0.61	0.57	0.54	0.41	– –
18	5908	**868-541**	1.24	1.14	1.08	0.72	– –
21	5062	**868-530**	0.56	0.53	0.49	0.33	– –
White Thumbwheels							
11.5	5034	NEW **445-2367**	0.61	0.57	0.54	0.41	– –
18	5908	NEW **445-2380**	1.20	1.11	1.07	0.81	– –
21	5062	NEW **445-2379**	0.55	0.52	0.49	0.37	– –

51 & 53 Series Pluggable Potentiometer

tyco/Electronics Citec

51 Series top adjust H=8 W=12.6 D=16
53 Series side adjust H=19 W=12.6 D=16

- Vertical or horizontal mounting
- Adjustable from both sides
- Integral support bracket
- Optional snap-in spindles and edge wheel

Resistive element	Resin Base technology	Mechanical rotation	300° nominal
Power rating @ 40°C	0.2Watt	Rotational life	15000 operations
Maximum voltage	500Vdc	Operating temperature	-25°C to +70°C
Resistance tolerance	±20%		

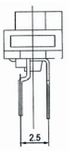
207268

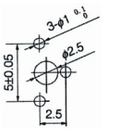
	Order Code	Price Each 1+	25+	50+	100+	+
51 Top adjust						
1K	**117-4443**	2.08	1.89	1.67	1.48	– –
4K7	**117-4444**	1.92	1.76	1.56	1.50	– –
10K	**117-4445**	2.08	1.89	1.67	1.48	– –
47K	**117-4446**	2.08	1.89	1.67	1.48	– –
100K	**117-4448**	2.08	1.89	1.67	1.48	– –
53 Side adjust						
1K	**117-4449**	2.08	1.89	1.67	1.48	– –
4K7	**117-4450**	2.08	1.89	1.67	1.48	– –
10K	**117-4451**	1.92	1.76	1.56	1.50	– –
47K	**117-4452**	2.08	1.89	1.67	1.48	– –
100K	**117-4453**	2.08	1.89	1.67	1.48	– –
Accessories						
30 x 6mm Spindle Black	**748-316**	1.11	0.99	0.87	0.78	– –
60 x 6mm Spindle Black	**748-328**	1.32	1.17	1.05	0.93	– –
25mm Black edge wheel	**748-330**	1.32	1.20	1.05	0.93	– –

Cermet Skeleton Trimmers

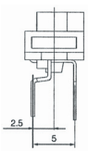
0.3 Watt – 406 Series

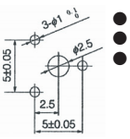
tyco/Electronics Citec





PCB layout
2.5 x 5





PCB layout
5 x 5

- Single turn trimmer, top adjusting
- Dust and splash proof
- Stable high resolution cermet element

Power rating @ 70°C	0.5W	End resistance	2R or 1% whichever >
Voltage rating	300V	Contact resistance variation	3Ω or 1% whichever >
Resistance tolerance	±10%	Dielectric strength	900V ac
Temperature coefficient	±100ppm/°C	Operating temperature	-25°C to +85°C

Stocked in the following OHMIC Values:

406P – 2.5 x 5mm PCB layout

100R = **463-1158**	2K = **463-1225**	20K = **463-1213**	200K = **463-1195**
200R = **463-1201**	5K = **463-1262**	50K = **463-1250**	500K = **463-1237**
500R = **463-1249**	10K = **463-1160**	100K = **463-1146**	1M = **463-1183**
1K = **463-1171**			

406M – 5 x 5 mm PCB layout

100R = **463-1274**	2K = **463-1316**	20K = **463-1341**	200K = **463-1377**
200R = **463-1286**	5K = **463-1328**	50K = **463-1353**	500K = **463-1389**
500R = **463-1298**	10K = **463-1330**	100K = **463-1365**	1M = **463-1390**
1K = **463-1304**			

312083

Order Code	Price Each 5+	50+	100+	500+	+
All Values	0.98	0.85	0.78	0.72	– –

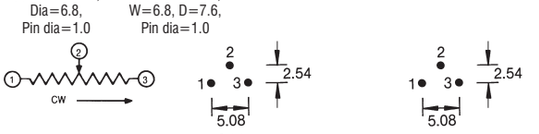
0.3 Watt – 3306 Series

BOURNS Reliable Electronic Solutions

- Miniature horizontal and vertical mounting
- Cermet trimmers, dust proof/splash proof covers
- Board retention feature and PCB stand offs.

3306P: H=7.8, Dia=6.8, Pin dia=1.0

3306W: H=8.5, W=6.8, D=7.6, Pin dia=1.0



Drilling plans

Front

Power rating @ 70°C	0.2W	End resistance	2% (≤2KkR = 30R)
Voltage rating	100V	Constant resistance variation	3% max
Resistance tolerance	±25%	Adjustment angle	215°
Temperature coefficient	±250ppm/°C	Operating temperature	–20°C to +100°C

Stocked in the following OHMIC Values:

3306P

100R = **108-234**	2K = **108-237**	20K = **108-240**	500K = **108-243**
500R = **108-235**	5K = **108-238**	50K = **108-241**	1M = **108-244**
1K = **108-236**	10K = **108-239**	100K = **108-242**	

3306W

100R = **108-245**	2K = **108-248**	20K = **108-251**	500K = **108-254**
500R = **108-246**	5K = **108-249**	50K = **108-252**	1M = **108-255**
1K = **108-247**	10K = **108-250**	100K = **108-253**	

207393

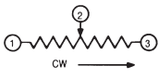
Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

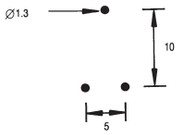
Style	Order Code	Price Each 1+	50+	100+	500+
3306P	All Values	0.98	0.88	0.79	0.66
3306W	All Values	0.98	0.88	0.79	0.66

0.5 Watt – 3309P Series Horizontal

BOURNS Reliable Electronic Solutions

H=6.3, Dia=9.0, Pin dia.=1.19





Drilling plan

- Horizontal mounting cermet trimmer with dust proof/splash proof cover
- Adjustable via cross slot rotor
- Board retention feature and PCB stand-offs.

Power rating @ 70°C	0.5W	End resistance	2% (≤2K = 30R)
Voltage rating	250V	Constant resistance variation	3%
Resistance tolerance	±25%	Adjustment angle	235°
Temperature coefficient	±250ppm/°C	Operating temperature	-25°C to +100°C

Stocked in the following OHMIC Values:

100R = **452-579**	2K = **452-609**	20K = **452-634**	500K = **452-660**
500R = **452-580**	5K = **452-610**	50K = **452-646**	1M = **452-671**
1K = **452-592**	10K = **452-622**	100K = **452-658**	

207188

Order Code	Price Each 1+	50+	100+	500+
All Values	2.66	2.20	2.05	1.61

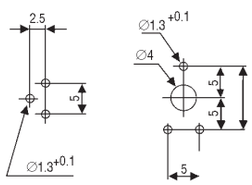
0.33 Watt - PTC10 'DETENT' Series

PIHER

10 Detents - 9 Voltage Zones

PTC10MH side adjust W=10.3, D=4.5, H=12.1
PTC10MV top adjust W=10.3, D=10.0, H=4.5

Spindles and Thumbwheels



- Miniature cermet control potentiometers featuring 10 detent adjustment
- Detents provide "click" positioning
- Prevent accidental setting movements
- Detents also provide "voltage zones" for stepped voltage output capability
- Allow easy equipment calibration
- For further application information please request full datasheet
- Top or side adjustment from both sides
- Wide range of spindle or thumbwheel adjusters

Power rating @ 90°C	0.33W	Rotation nominal	220° electrical, 235° mechanical
Maximum voltage	200V dc	Operating temperature	-40°C to +90°C
Resistance tolerance	±20%		

Order Code	Price Each 1+	25+	100+	500+
PTC10MV, Vertical Adjust, Horizontal Mount				
5K **445-2240**	2.41	2.02	1.92	1.53
10K **445-2252**	2.41	2.02	1.92	1.53
100K **445-2264**	2.41	2.02	1.92	1.53
PTC10MH, Horizontal Adjust, Vertical Mount				
5K **445-2276**	2.41	2.02	1.92	1.53
10K **445-2288**	2.67	2.21	2.08	1.66
100K **445-2290**	2.67	2.21	2.08	1.66

311956

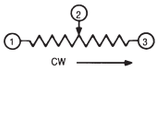
Accessories

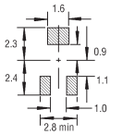
Length	Style	Order Code	Price Each 5+	25+	50+	100+	+
Black Spindles							
6.75	5121	**445-2306**	0.27	0.26	0.25	0.21	– –
10	5012	**868-504**	0.21	0.20	0.20	0.14	– –
25.5	5121	**868-516**	0.28	0.26	0.25	0.18	– –
12	6064	**868-528**	0.82	0.78	0.75	0.48	– –
White Spindles							
6.75	5121	**445-2355**	0.27	0.26	0.25	0.21	– –
10	5012	**445-2320**	0.23	0.22	0.21	0.17	– –
25.5	5119	**445-2331**	0.27	0.26	0.25	0.21	– –
12	6064	**445-2343**	0.88	0.85	0.85	0.58	– –
Black Thumbwheels							
11.5	5034	**445-2318**	0.61	0.57	0.54	0.41	– –
18	5908	**868-541**	1.24	1.14	1.08	0.72	– –
21	5062	**868-530**	0.56	0.53	0.49	0.33	– –
White Thumbwheels							
11.5	5034	**445-2367**	0.61	0.57	0.54	0.41	– –
18	5908	**445-2380**	1.20	1.11	1.07	0.81	– –
21	5062	**445-2379**	0.55	0.52	0.49	0.37	– –

Surface Mount Single Turn Cermet Trimmers

0.05 Watt – 3203 Series Sealed – 3mm Square

tyco/Electronics CTEC





PCB layout

SMD

H=2.0, W=3.0, D=3.5

Supplied on 12mm embossed tape (reel=1K pcs)

- Ultra compact cermet trimmers
- Sealed to withstand industrial cleaning solvents and modern soldering processes

Voltage rating	15V	Adjustment angle (no end stop)	260° ±20°
Resistance tolerance	±25%	End resistance	15% max
Operating temperature	-20°C to +85°C	Contact resistance variation	5% max
Temperature coefficient	±250ppm/°C	Soldering temperature	260°C for 5 secs. max.

Stocked in the following OHMIC Values:

1K = **107-130**	5K = **107-132**	20K = **107-134**	100K = **107-136**
2K = **107-131**	10K = **107-133**	50K = **107-135**	

Mftrs. List No. 3203+Value

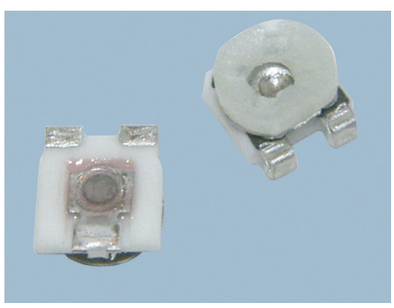
207203

Order Code	Price Each 5+	25+	100+	500+	+
All Values ●	3.48	2.87	2.27	1.51	– –

0.1 Watt – 3135 Series – 3mm Square

tyco/Electronics CTEC

NEW



H=2.0, W=3.0, D=3.5

Supplied on 12mm embossed tape (reel=1K pcs)

- Cermet Element
- Stocked in Standard 8mm Tape
- Components Marked with Value

Resistance tolerance	±25%
Operating temperature	-40°C+100°C
Temperature coefficient	±250ppm/°C
Electrical angle	270° ± 20°
Voltage rating	50V DC max
Weight	0.04 g

Stocked in the following OHMIC Values:

100R = **886-6813**	1M = **886-6864**	20K = **886-6899**	5K = **886-6929**
1K = **886-6830**	200R = **886-6872**	200K = **886-6902**	50K = **886-6937**
10K = **886-6848**	2K = **886-6880**	500R = **886-6910**	500K = **886-6945**
100K = **886-6856**			

Mftrs. List No. 3135X+Value+P

386931

Order Code	Price Each 5+	25+	100+	500+	+
All Values ●	2.44	1.99	1.69	1.24	– –

RoHS ● Compliant ◄ Non-compliant ‡ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

0.1 Watt – 3142W Series

tyco/Electronics Citec

4mm Square

- Surface mount single turn cermet trimmer
- 3 terminal in delta configuration
- Continuous perimeter adjustment rotor for easy vacuum pick up
- Stable cermet element

Resistance tolerance	±25%
Temperature coefficient	±250ppm/°C
Operating voltage	50V d.c. or a.c. rms
Temperature range	-25°C to +85°C

H=2.2, W=4, D=4.8 Reel=800 pcs

Stocked in the following OHMIC Values:

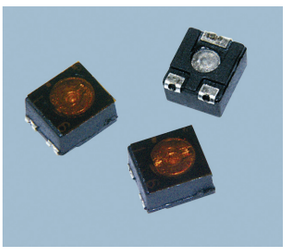
200R = **117-4175**	2K = **117-4178**	20K = **117-4181**	200K = **117-4184**
500R = **117-4176**	5K = **117-4179**	50K = **117-4182**	500K = **117-4185**
1K = **117-4177**	10K = **117-4180**	100K = **117-4183**	1M = **117-4187**

207286

	Price Each				
Order Code	5+	25+	100+	250+	+
All Values ●	2.34	1.89	1.63	1.14	– –

0.1 Watt – 3204 Series – 4mm Square

tyco/Electronics Citec



- Cermet Element
- Stocked in Standard 12mm Tape
- Terminal Layout Stops Solder Bridging

NEW

H=2.0, W=3.0, D=3.5

Supplied on 12mm embossed tape (reel=1K pcs)

Resistance tolerance	±25%	Electrical angle	250° ± 20°
Operating temperature	-20°C+85°C	Voltage rating	50V DC max
Temperature coefficient	±250ppm/°C	Weight	0.11 g

Stocked in the following OHMIC Values:

100R = **883-0681**	1M = **883-0720**	20K = **883-0754**	5K = **883-0789**
1K = **883-0690**	200R = **883-0738**	200K = **883-0762**	50K = **883-0797**
10K = **883-0703**	2K = **883-0746**	500R = **883-0770**	500K = **883-0800**
100K = **883-0711**			

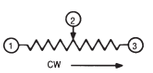
Mftrs. List No. 3204X+Value+P

386929

	Price Each				
Order Code	5+	25+	100+	500+	+
All Values ●	3.81	3.22	2.80	2.41	– –

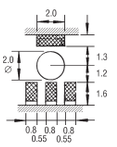
0.15 Watt – 3165W Series – 4mm Square

tyco/Electronics Citec



H=2.4, W=4, D=4.5

Supplied on 12mm embossed tape (reel=800 pcs)



PCB layout

Compact cermet trimmers featuring three in-line terminalsCross slot adjustment head with unbroken perimeter for ease of vacuum pick up and auto adjustmentSuitable for all reflow and infra-red solder processes

Voltage rating	20V	Contact resistance variation	5%
Resistance tolerance	±25%	Adjustment angle (no end stop)	250° +10°
Temperature coefficient	±250ppm/°C	Soldering temperature	250°C for max.
End resistance	3%	Operating temperature	-20°C to +85°C

Stocked in the following OHMIC Values:

1K = **117-3880**	5K = **117-3883**	20K = **117-3885**	100K = **117-3887**
2K = **117-3882**	10K = **117-3884**	50K = **117-3886**	

Mftrs. List No. 3165W+Value

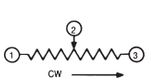
207204

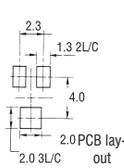
	Price Each				
Order Code	5+	25+	100+	250+	+
All Values ●	2.25	1.83	1.58	0.94	– –

0.25 Watt – 3314J Series – 4mm Square Sealed

BOURNS® Reliable Electronic Solutions

H=2.55, W=4.5, D=4.5





PCB layout

SMD

Supplied on 12mm embossed tape in multiples of 10

- Compact cermet trimmers
- Sealed to withstand industrial cleaning solvents and modern soldering processes.

Voltage rating	300V	Contact resistance variation	1%
Resistance tolerance	±20%	Adjustment angle	210°
Temperature coefficient	±100ppm/°C	Operating temperature	-55°C to +125°C
End resistance	1%		

Stocked in the following OHMIC Values:

1K = **514-755** 5K = **514-767** 10K = **514-779** 50K = **514-780** 100K = **514-792**

207205

	Price Each			
Order Code	5+	50+	100+	500+
All Values	3.34	2.99	2.65	2.30

0.25 Watt - TS53Y Series 4mm Square Sealed

VISHAY

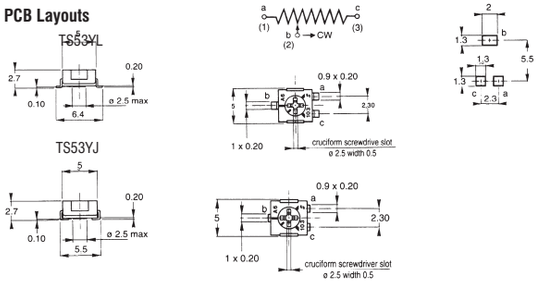
- Low contact resistance variation
- Fully sealed to **IP67**
- Wide operating temperature range

SMD

Voltage rating	200V
Resistance tolerance	±20%
Temperature coefficient	±100ppm/°C
End resistance	0.1% or 3Ω
Contact resistance variation	1% or 3Ω
Dielectric strength	1000V
Operating temperature	-55°C to 155°C

H = 2.7 W = 5.0 D = 5.0 Supplied on 12mm embossed tape (reel = 500pcs)

PCB Layouts



Stocked in the following OHMIC Values:

TS53YL

500R = **114-1470** 2K = **114-1472** 10K = **114-1474** 50K = **114-1476** 200K = **114-1479**
1K = **114-1471** 5K = **114-1473** 20K = **114-1475** 100K = **114-1477**

TS53YJ

500R = **114-1481** 2K = **114-1483** 10K = **114-1485** 50K = **114-1487** 1M = **114-1489**
1K = **114-1482** 5K = **114-1484** 20K = **114-1486** 100K = **114-1488**

207321

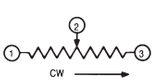
		Price Each				
Style	**Order Code**	1+	50+	100+	500+	+
TS53YL	**All Values** ●	3.40	3.09	2.84	2.05	– –
TS53YJ	**All Values** ●	3.40	3.09	2.84	2.05	– –

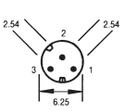
¼" (6.35mm) Single Turn Cermet Trimmers

0.5 Watt – 3329H Series

BOURNS® Reliable Electronic Solutions

H=4.6, Pin dia=0.5





- Top adjusting cermet trimmers
- Sealed to withstand industrial cleaning solvents and moulded with built-in 'stand-offs'

Power rating @ 85°C	0.5W	Contact resistance variation	3% or 3Ω whichever >
Resistance tolerance	±10%	Dielectric strength (sea level)	600V ac
Temperature coefficient	±100ppm/°C	Adjustment angle	240°
End resistance	2 Ω max	Operating temperature	-55°C to 150°C
Voltage rating	300V		

Stocked in the following OHMIC Values:

10R = **935-4050**	200R = **346-019**	2K = **346-044**	20K = **346-070**	100K = **935-4093**
20R = **935-4107**	200R = **935-4115**	2K = **935-4123**	20K = **935-4140**	200K = **346-100**
50R = **345-994**	500R = **346-020**	5K = **935-4182**	50K = **346-081**	200K = **935-4158**
50R = **935-4166**	500R = **935-4174**	10K = **346-068**	50K = **935-4190**	500K = **346-111**
100R = **346-007**	1K = **346-032**	10K = **935-4085**	100K = **346-093**	500K = **935-4204**
100R = **935-4069**	1K = **935-4077**			

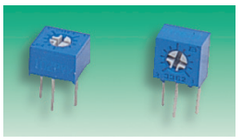
207394

	Price Each				
Order Code	1+	50+	100+	500+	+
All Values	3.72	3.43	3.21	2.65	– –

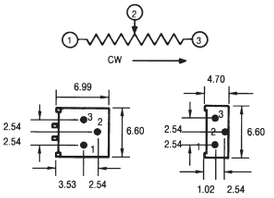
Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

0.5 Watt – 3362 Series

BOURNS® Reliable Electronic Solutions



3362P H=4.7, Pin Dia.=0.46 | 3362W H=6.99 Pin Dia.=0.46



Drilling Plans

- Sealed to withstand harsh environments and immersion cleaning processes
- Featuring built-in 'stand-offs'
- Multi-wire wiper to minimise contact resistance variation

Power rating @ 70°C	0.5W	Contact resistance variation	1%(100R=3Ω)
Voltage rating	300V	Dielectric strength (sea level)	900V ac
Resistance tolerance	±10%	Adjustment angle	240°
Temperature coefficient	±100ppm/°C	Operating temperature	-55°C to +125°C
End resistance	1% (100R=2Ω)		

Stocked in the following OHMIC Values:

3362P

100R = **935-4280** 2K = **935-4336** 20K = **935-4344** 100K = **935-4310** 500K = **935-4395**
500R = **935-4360** 5K = **935-4379** 50K = **935-4387** 200K = **935-4352** 1M = **935-4328**
1K = **935-4298** 10K = **935-4301**

3362W

100R = **935-4409** 2K = **935-4450** 20K = **935-4468** 100K = **935-4433** 500K = **935-4514**
500R = **935-4484** 5K = **935-4492** 50K = **935-4506** 200K = **935-4476** 1M = **935-4441**
1K = **935-4417** 10K = **935-4425**

207186

Style	Order Code	Price Each 5+	50+	100+	500+	+	+
3362P	All Values ●	1.90	1.70	1.54	1.32	– –	– –
3362W	All Values ●	1.90	1.70	1.54	1.32	– –	– –

0. 2 Watt – 416 Series – 6mm Square

tyco/Electronics CTEC

- Stable High Resolution Cermet Element
- Stocked Taped for Auto Insertion
- Dust and Splash Proof
- Space-Saving Device

NEW

Supplied on 12mm embossed tape (reel=1K pcs)

H=2.0, W=3.0, D=3.5
416M - Top adjust: 5mm x 5 mm
416PA - Top adjust: 2.5mm x 5mm

Resistance tolerance	±25%	Mechanical angle	260°
Operating temperature	-20°C+100°C	Voltage rating	100V DC max
Temperature coefficient	±250ppm/°C	Starting Torque	35 mNm max.

Mftrs. List No. 41PA+Value+P

100R = **886-6988** 2K = **886-7054** 20K = **886-7046** 200K = **886-7020**
200R = **886-7038** 5K = **886-7097** 50K = **886-7089** 500K = **886-7062**
500R = **886-7070** 10K = **886-6996** 100K = **886-6970** 1M = **886-7011**
1K = **886-7003**

Mftrs. List No. 416M+Value+P

100R = **886-7100** 2K = **886-7143** 20K = **886-7178** 200K = **886-7208**
200R = **886-7119** 5K = **886-7151** 50K = **886-7186** 500K = **886-7216**
500R = **886-7127** 10K = **886-7160** 100K = **886-7194** 1M = **886-7224**
1K = **886-7135**

Stocked in the following OHMIC Values:

386933

Order Code	Price Each 5+	25+	100+	500+	+
All Values ●	1.37	1.20	1.14	1.11	– –

7mm Single Turn Cermet Trimmers

0.5 Watt – T7 Series

VISHAY

- Miniature single turn cermet trimmers
- Clear scale reading on top
- Sealed to **IP64**

Dia.=7, H=6

Power rating @ 70°C	0.5W	End resistance	1Ω max
Voltage rating	250V	Contact resistance variation	3% or 3Ω
Resistance tolerance	±20%	Dielectric strength (sea level)	1000 V
Temperature coefficient	±100ppm/°C	Operating temperature	-55°C to + 125°C

Stocked in the following OHMIC Values:

T7 YA

100R = **114-1642** 1K = **114-1645** 10K = **114-1649** 100K = **114-1653** 470K = **114-1655**
220R = **114-1643** 2K2 = **114-1646** 22K = **114-1651** 220K = **114-1654** 1M = **114-1656**
470R = **114-1644** 4K7 = **114-1647** 47K = **114-1652**

T7 YB

100R = **114-1657** 1K = **114-1660** 10K = **114-1664** 100K = **114-1668** 470K = **114-1671**
220R = **114-1658** 2K2 = **114-1662** 22K = **114-1665** 220K = **114-1669** 1M = **114-1674**
470R = **114-1659** 4K7 = **114-1663** 47K = **114-1666**

234800

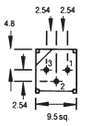
Style	Order Code	Price Each 1+	50+	100+	500+	+
T7 YA	All Values ●	1.64	1.51	1.39	1.17	– –
T7 YB	All Values ●	1.64	1.51	1.39	1.17	– –

⅜" (11.0mm) Single Turn Cermet Trimmers

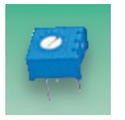
0.5 Watt – 3386 Series

BOURNS® Reliable Electronic Solutions

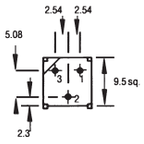
3386P
H = 4.8, Pin dia = 0.5



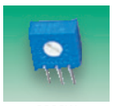
Drilling plan



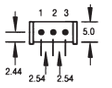
3386F
H = 4.8, Pin dia = 0.5



Drilling plan

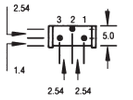


3386W
H = 9.5, Pin dia = 0.5



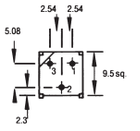
Drilling plan

3386X
H = 9.5, Pin dia = 0.5



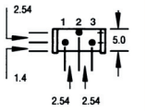
Drilling plan

3386FT
H = 10.41, Pin dia = 0.5

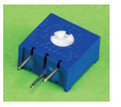


Drilling plan

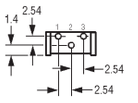
3386H
H = 9.5, Pin dia = 0.5



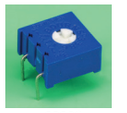
Drilling plan



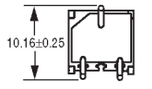
3386V
H = 4.8, Pin dia = 0.5



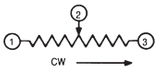
Drilling plan



3386G
H = 9.5, Pin dia = 0.5



Drilling plan



- Top and side adjusting cermet trimmers
- Sealed to withstand industrial cleaning solvents
- Moulded with built-in 'stand-offs'
- 3386G replaces VA05H
- 3386V replaces VA05V

Power rating @ 85°C	0.5W	Contact resistance variation	1% or 1Ω whichever>
Voltage rating	300V	Dielectric strength (sea level)	900V ac
Resistance tolerance	±10%	Mechanical rotation	310°
Temperature coefficient	±100ppm/°C	Operating temperature	-55°C to + 125°C
End resistance	2Ωmax		

Stocked in the following OHMIC Values:

3386P

100R = **935-5014** 1K = **935-5022** 10K = **935-5030** 100K = **935-5049** 500K = **935-5138**
200R = **935-5065** 2K = **935-5073** 20K = **935-5081** 200K = **935-5090** 1M = **935-5057**
500R = **935-5103** 5K = **935-5111** 50K = **935-5120**

3386F

100R = **935-4522** 1K = **935-4530** 5K = **935-4697** 50K = **935-4719** 500K = **935-4735**
200R = **935-4611** 1K = **935-4549** 10K = **935-4557** 100K = **935-4573** 1M = **935-4590**
500R = **935-4689** 2K = **935-4620** 20K = **935-4646** 200K = **935-4662**

338FT

10K = **935-4565** 1M = **935-4603** 20K = **935-4654** 5K = **935-4700** 500K = **935-4743**
100K = **935-4581** 2K = **935-4638** 200K = **935-4670** 50K = **935-4727**

3386W

100R = **935-5260** 1K = **935-5278** 10K = **935-5286** 100K = **935-5294** 500K = **935-5383**
200R = **935-5316** 2K = **935-5324** 20K = **935-5332** 200K = **935-5340** 1M = **935-5308**
500R = **935-5359** 5K = **935-5367** 50K = **935-5375**

3386X

100R = **935-5391** 1K = **935-5405** 10K = **935-5413** 100K = **935-5421** 500K = **935-5510**
200R = **935-5448** 2K = **935-5456** 20K = **935-5464** 200K = **935-5472** 1M = **935-5430**
500R = **935-5480** 5K = **935-5499** 50K = **935-5502**

3386H

100R = **935-4883** 1K = **935-4891** 10K = **935-4905** 100K = **935-4913** 500K = **935-5006**
200R = **935-4930** 2K = **935-4948** 20K = **935-4956** 200K = **935-4964** 1M = **935-4921**
500R = **935-4972** 5K = **935-4980** 50K = **935-4999**

3386G

100R = **935-4751** 1K = **935-4760** 10K = **935-4778** 100K = **935-4786** 500K = **935-4875**
200R = **935-4808** 2K = **935-4816** 20K = **935-4824** 200K = **935-4832** 1M = **935-4794**
500R = **935-4840** 5K = **935-4859** 50K = **935-4867**

3386V

100R = **935-5146** 200R = **935-5197** 500R = **935-5227** 1K = **935-5154** 2K = **935-5200**

RoHS ● Compliant ◄ Non-compliant ++ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

Farnell Page 1182 Date: 21-08-06 time: 19:20

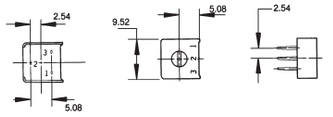
5K = **935-5235** 20K = **935-5219** 100K = **935-5170** 500K = **935-5251** 1M = **935-5189**
10K = **935-5162** 50K = **935-5243**

207395

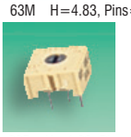
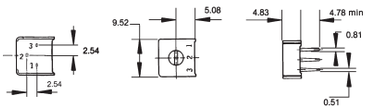
Style	Order Code	Price Each 1+	50+	100+	500+	+
3386P	All Values ●	1.61	1.39	1.29	1.10	– –
3386F	All Values ●	1.61	1.39	1.29	1.10	– –
3386W	All Values ●	1.61	1.39	1.29	1.10	– –
3386X	All Values ●	1.73	1.48	1.39	1.10	– –
3386FT	All Values ●	6.20	5.58	4.95	4.28	– –
3386H	All Values ●	1.61	1.39	1.29	1.10	– –
3386G	All Values ●	1.61	1.39	1.29	1.10	– –
3386V	All Values ●	1.73	1.48	1.39	1.10	– –

0.5 Watt – 63 Series

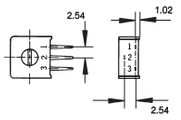
VISHAY
Vishay Spectrol



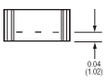
63M H=4.83, Pins=0.81 x 0.25

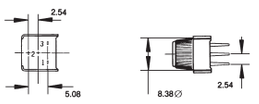
63P H=4.83, Pins=0.81 x 0.25



63X H=10.03, Pins=0.81 x 0.25

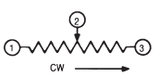


63S H=10.03, Pins=0.81 x 0.25



63MT-607 H=10.4, Pins=0.81 x 0.25

- Cermet element top and side adjusting
- Single turn sealed to withstand industrial cleaning solvents
- Manufactured to meet **MIL-R-22097** specification



Power rating @ 70°C	0.5W	Contact resistance variation	3% or 3Ω whichever is >
Voltage rating	400V	Dielectric strength (sea level)	1000V ac
Resistance tolerance	±10%	Mechanical rotation	270°
Temperature coefficient	±100ppm/°C	Operating temperature	-55°C to + 125°C
End resistance	2% or 2Ω whichever is >		

Stocked in the following OHMIC Values:

63M
100R = **960-7781** 1K = **960-7811** 10K = **960-7846** 100K = **960-7870** 500K = **960-7897**
200R = **960-7790** 2K = **960-7820** 20K = **960-7854** 200K = **960-7889** 1M = **960-7900**
500R = **960-7803** 5K = **960-7838** 50K = **960-7862**

63P
100R = **960-7919** 1K = **960-7943** 10K = **960-7978** 100K = **960-8001** 500K = **960-8028**
200R = **960-7927** 2K = **960-7951** 20K = **960-7986** 200K = **960-8010** 1M = **960-8036**
500R = **960-7935** 5K = **960-7960** 50K = **960-7994**

63X
100R = **960-8044** 1K = **960-8079** 10K = **960-8109** 100K = **960-8133** 500K = **960-8150**
200R = **960-8052** 2K = **960-8087** 20K = **960-8117** 200K = **960-8141** 1M = **960-8168**
500R = **960-8060** 5K = **960-8095** 50K = **960-8125**

63S
100R = **960-9750** 1K = **960-9784** 10K = **960-9814** 100K = **960-9849** 500K = **960-9865**
200R = **960-9768** 2K = **960-9792** 20K = **960-9822** 200K = **960-9857** 1M = **960-9873**
500R = **960-9776** 5K = **960-9806** 50K = **960-9830**

63MT-607
100R = **960-8176** 500R = **960-8192** 2K = **960-8214** 200K = **960-8273** 1M = **960-8290**
200R = **960-8184** 1K = **960-8206** 5K = **960-8249**

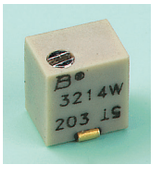
207253

Style	Order Code	Price Each 5+	25+	100+	250+	+
63M	All Values ●	1.70	1.45	1.17	1.07	– –
63P	All Values ●	1.64	1.42	1.13	0.94	– –
63X	All Values ●	1.81	1.58	1.32	0.91	– –
63S	All Values ●	1.70	1.45	1.17	1.07	– –
63MT-607	All Values ●	2.75	2.46	2.20	1.92	– –

Surface Mount Multi Turn Cermet Trimmers

0.25 Watt – 3214 Series – 4mm 5 Turn Sealed

BOURNS® Reliable Electronic Solutions

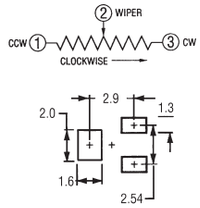


SMD

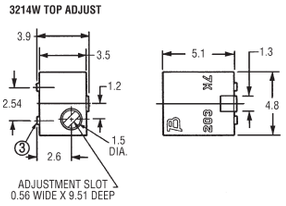
- 5-turn sealed 4mm surface mount trimmer.
- Top flush adjustment for pick and place.
- Standard trimmer footprint to EIA and EIAJ.

Supplied on 16mm embossed tape (reel=250pcs)

H=5.1, W=4.8, D=3.9



PCB layout



Voltage rating	300V	End resistance	1%
Resistance tolerance	±10%	Contact resistance variation	3%
Temperature coefficient	±100ppm/°C	Dielectric strength (sea level)	600V ac
		Operating temperature	-65°C to + 150°C

Stocked in the following OHMIC Values:

3214W
1K = **988-248** 5K = **988-261** 20K = **988-285** 100K = **988-303** 500K = **988-327**
2K = **988-250** 10K = **988-273** 50K = **988-297** 200K = **988-315** 1M = **988-339**

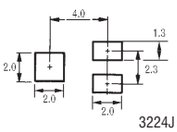
207269

Order Code	Price Each 1+	50+	100+	250+	+	+
All Values	4.57	4.10	3.65	3.43	– –	– –

0.25 Watt – 3224 Series – 4mm Square Sealed

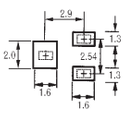
BOURNS® Reliable Electronic Solutions

SMD



3224J
H=3.7,
W=4.8,
D=5.0

3224W
H=5.3,
W=4.8,
D=3.9



PCB layouts

3224J supplied on 12mm embossed tape (reel=500pcs)
3224W supplied on 16mm embossed tape (reel=250pcs)

- Compact 11 turn cermet trimmer
- Sealed to withstand industrial cleaning solvents

Voltage rating	300V	End resistance	1%
Resistance tolerance	±10%	Contact resistance variation	3%
Temperature coefficient	±100ppm/°C	Dielectric strength (sea level)	600V ac
		Operating temperature	-65°C to + 150°C

Stocked in the following OHMIC Values:

3224J
1K = **514-809** 5K = **514-822** 20K = **514-846** 100K = **514-860**
2K = **514-810** 10K = **514-834** 50K = **514-858**

3224W
1K = **514-871** 5K = **514-974** 20K = **514-998** 100K = **515-012**
2K = **514-883** 10K = **514-986** 50K = **515-000**

207206

Style	Order Code	Price Each 1+	50+	100+	250+	+
3224J	All Values	6.72	6.11	5.67	4.91	– –
3224W	All Values	6.23	5.67	5.23	4.91	– –

Product Watch
obsolescence notification

- FREE to all account holders
- Notification of obsolete, end of line and end of stock items
- Replacement or upgrade recommendations

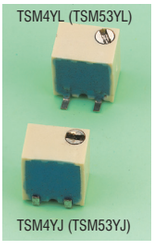
Advanced warning of obsolete components

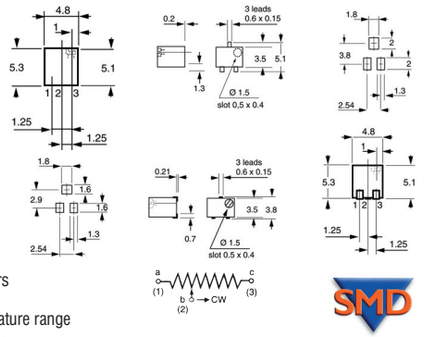
Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

C = CYAN M = Magenta Y = Yellow B = Black/SING

0.25 Watt - TSM4 Series - 4mm Square Sealed (Formerly TSM53 Series)

VISHAY





H = 5.3, W = 4.8, D = 3.5

- 13 turn cermet trimmers
- Fully sealed to **IP67**
- Wide operating temperature range

SMD

Voltage rating	200V	End resistance	1Ω
Resistance tolerance	±10%	Contact resistance variation	1% or 3Ω
Temperature coefficient	±100ppm/°C	Dielectric strength (sea level)	600V
		Operating temperature	-65°C to + 155°C

Stocked in the following OHMIC Values:

TSM4YL (TSM53YL)

100R = **114-1356** 1K = **114-1359** 10K = **114-1362** 100K = **114-1366** 500K = **114-1368**
200R = **114-1357** 2K = **114-1360** 20K = **114-1364** 200K = **114-1367** 1M = **114-1369**
500R = **114-1358** 5K = **114-1361** 50K = **114-1365**

TSM4YJ (TSM53YJ)

100K = **114-1342** 1K = **114-1345** 10K = **114-1348** 100K = **114-1352** 500K = **114-1354**
200R = **114-1343** 2K = **114-1346** 20K = **114-1349** 200K = **114-1353** 1M = **114-1355**
500R = **114-1344** 5K = **114-1347** 50K = **114-1350**

TSM4ZJ

100R = **879-2437** 1K = **879-2461** 10K = **879-2496** 100K = **879-2526** 500K = **879-2542**
200R = **879-2445** 2K = **879-2470** 20K = **879-2500** 200K = **879-2534** 1M = **879-2550**
500R = **879-2453** 5K = **879-2488** 50K = **879-2518**

TSM4ZL

100R = **879-2569** 1K = **879-2593** 10K = **879-2623** 100K = **879-2658** 500K = **879-2674**
200R = **879-2577** 2K = **879-2607** 20K = **879-2631** 200K = **879-2666** 1M = **879-2682**
500R = **879-2585** 5K = **879-2615** 50K = **879-2640**

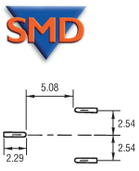
207319

		Price Each					
Style	Order Code	1+	50+	100+	250+	+	+
TSM4YL	All Values ●	4.98	4.63	4.28	3.37	– –	– –
TSM4YJ	All Values ●	4.98	4.63	4.28	3.37	– –	– –
TSM4ZJ	All Values ●	5.18	4.88	4.43	3.71	– –	– –
TSM4ZL	All Values ●	5.18	4.88	4.43	3.71	– –	– –

0.25 Watt – 3269 Series – 6.35mm Square

BOURNS Reliable Electronic Solutions

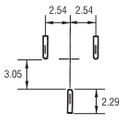
SMD



PCB layout

3269P H=5.08, W=6.35, D=6.35

3269W H=7.11, W=4.32, D=6.35



PCB layout

- 12 turn cermet trimmers
- Surface mount version of the 3266 Series leaded 6.35mm multi-turn cermet trimmer
- Sealed to withstand industrial cleaning solvents.

Voltage rating	300V	End resistance	1%
Resistance tolerance	±10%	Contact resistance variation	3%
Temperature coefficient	±100ppm/°C	Dielectric strength (sea level)	600V ac
		Operating temperature	-65°C to + 150°C

Stocked in the following OHMIC Values:

3269P

1K = **935-2902** 10K = **935-2910** 50K = **935-2945** 100K = **935-2929**
2K = **935-2937**

3269W

1K = **935-2953** 5K = **935-3003** 20K = **935-2996** 100K = **935-2970**
2K = **935-2988** 10K = **935-2961** 50K = **935-3011**

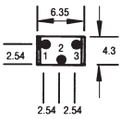
207207

		Price Each			
Style	Order Code	1+	50+	100+	500+
3269P	All Values ●	9.60	8.66	7.65	6.39
3269W	All Values ●	9.60	8.66	7.65	6.39

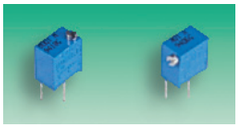
¼" (6.35mm) Multi Turn Cermet Trimmers

0.25 Watt – 3266 Series

BOURNS Reliable Electronic Solutions

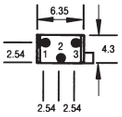


Drilling plans



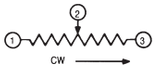
3266W H=6.9, Pin dia=0.5

3266X H=6.9, Pin dia=0.5



Drilling plans

- 12 turn trimmers
- Sealed to withstand industrial cleaning solvents
- Moulded with built-in 'stand-offs'



Power rating @ 70°C	0.25W	End resistance	5Ω max
Voltage rating	300V	Contact resistance variation	3% or 3Ω
Resistance tolerance	±10%	Dielectric strength (sea level)	600V ac
Temperature coefficient	±100ppm/°C	Operating temperature	-55°C to + 150°C

Stocked in the following OHMIC Values:

3266W

10R = **935-2627** 200R = **935-2694** 5K = **935-2759** 100K = **935-2660**
20R = **935-2686** 500R = **935-2740** 10K = **935-2651** 200K = **935-2724**
50R = **935-2732** 1K = **935-2643** 20K = **935-2716** 500K = **935-2775**
100R = **935-2635** 2K = **935-2708** 50K = **935-2767** 1M = **935-2678**

3266X

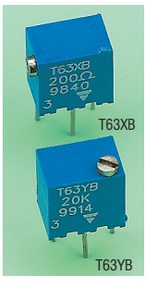
100R = **935-2783** 1K = **935-2791** 10K = **935-2805** 100K = **935-2813**
200R = **935-2821** 2K = **935-2830** 20K = **935-2848** 200K = **935-2856**
500R = **935-2864** 5K = **935-2872** 50K = **935-2880** 500K = **935-2899**

207396

		Price Each				
Style	Order Code	1+	50+	100+	500+	+
3266W	All Values ●	4.62	4.25	3.94	3.15	– –
3266X	All Values ●	4.29	3.94	3.62	3.15	– –

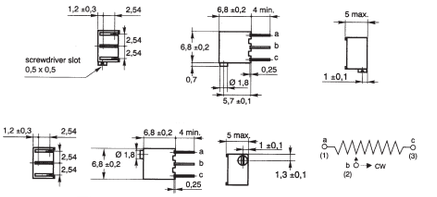
0.25 Watt – T63 Series

VISHAY



H=6.8 Pin dia.=0.45

Drilling plans



- 15 turn cermet trimmers
- Sealed to **IP67**
- Low contact resistance variation
- Wide operating temperature range

Power rating @ 70°C	0.25W	Resistance tolerance	±10%
End resistance	1R	Dielectric strength	1000V
Voltage rating	250V	Temperature coefficient	±100ppm/°C
Contact resistance variation	2% or 2Ω	Operating temperature	-55°C to +155°C

Available in the following OHMIC Values:

T63XB

100K = **114-1426** 1K = **114-1431** 10K = **114-1434** 100K = **114-1437** 500K = **114-1439**
200R = **114-1427** 2K = **114-1432** 20K = **114-1435** 200K = **114-1438** 1M = **114-1440**
500R = **114-1428** 5K = **114-1433** 50K = **114-1436**

T63YB

100R = **114-1441** 1K = **114-1445** 10K = **114-1448** 100K = **114-1451** 500K = **114-1453**
200R = **114-1443** 2K = **114-1446** 20K = **114-1449** 200K = **114-1452** 1M = **114-1455**
500R = **114-1444** 5K = **114-1447** 50K = **114-1450**

207310

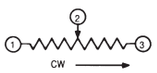
		Price Each				
Style	Order Code	1+	50+	100+	500+	+
T63XB	All Values ●	6.26	5.76	5.39	3.65	– –
T63YB	All Values ●	6.26	5.76	5.39	3.65	– –

5/16" (7.62mm) Multi Turn Cermet Trimmers

0.5 Watt – 3339P Series

BOURNS Reliable Electronic Solutions

H=6.35, Dia=7.62, Pin dia=0.43



Drilling plan

- 4 turn top adjusting cermet trimmer
- Precise wiper setting
- Single turn package
- Meets requirements of **MIL-R-22097**

Power rating @ 85°C	0.5W	End resistance	1% or 2R whichever >
Voltage rating	300V	Contact resistance variation	3% or 3Ω whichever >
Resistance tolerance	±10%	Dielectric strength (sea level)	600V ac
Temperature coefficient	±100ppm/°C	Operating temperature	-55°C to +150°C

RoHS ● Compliant ▲ Non-compliant ++ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

Stocked in the following OHMIC Values:

100R = **238-090**	500R = **935-4263**	2K = **238-120**	5K = **935-4271**	20K = **238-156**
100R = **935-4212**	1K = **238-119**	2K = **935-4247**	10K = **238-144**	20K = **935-4255**
500R = **238-107**	1K = **935-4220**	5K = **238-132**	10K = **935-4239**	

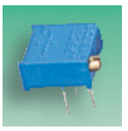
207190

	Price Each			
Order Code	1+	50+	100+	250+
All Values	12.55	11.40	9.86	7.94

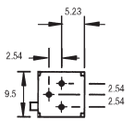
⅜" (11.0mm) Multi Turn Cermet Trimmers

0.5 Watt – 3296 Series

BOURNS® Reliable Electronic Solutions

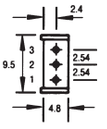


3296P
H=4.83, Pin dia=0.5



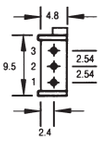
Drilling plans

3296W
H=11.5, Pin dia=0.5

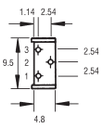


Drilling plans

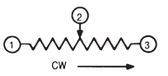
3296X
H=10.3, Pin dia=0.5



3296Y
H=11.5, Pin dia=0.5



- 25 turn trimmers
- Sealed to withstand industrial cleaning solvents
- Moulded with built-in 'stand-offs'



Power rating @ 70°C	0.5W	End resistance	2R max
Voltage rating	300V	Contact resistance variation	1% or 3Ω whichever >
Resistance tolerance	±10%	Dielectric strength (sea level)	900V ac
Temperature coefficient	±100ppm/°C	Operating temperature	-55°C to +150°C

Stocked in the following OHMIC Values:

3296P

100R = **237-450**	500R = **935-3119**	5K = **237-504**	20K = **935-3097**	200K = **935-3100**
100R = **935-3020**	1K = **237-486**	5K = **935-3127**	50K = **237-530**	500K = **237-565**
200R = **237-462**	1K = **935-3038**	10K = **237-516**	50K = **935-3135**	500K = **935-3143**
200R = **935-3070**	2K = **237-498**	10K = **935-3046**	100K = **935-3054**	1M = **237-577**
500R = **237-474**	2K = **935-3089**	20K = **237-528**	200K = **237-553**	1M = **935-3062**

3296W

10R = **476-171**	100R = **935-3160**	2K = **347-840**	50K = **347-887**	500K = **935-3313**
10R = **935-3151**	200R = **347-814**	2K = **935-3232**	50K = **935-3305**	1M = **935-3208**
20R = **476-183**	200R = **935-3224**	5K = **935-3291**	100K = **935-3194**	2M = **476-262**
20R = **935-3216**	500R = **347-826**	10K = **935-3186**	200K = **347-905**	2M = **935-3267**
50R = **476-195**	500R = **935-3283**	20K = **347-875**	200K = **935-3259**	5M = **476-274**
50R = **935-3275**	1K = **935-3178**	20K = **935-3240**	500K = **347-917**	5M = **935-3321**
100R = **347-802**				

3296X

10R = **476-201**	100R = **935-3348**	2K = **935-3410**	50K = **348-016**	500K = **348-041**
10R = **935-3330**	200R = **935-3402**	5K = **347-980**	50K = **935-3470**	500K = **935-3488**
20R = **476-213**	500R = **935-3453**	5K = **935-3461**	100K = **348-028**	1M = **348-053**
20R = **935-3399**	1K = **347-966**	10K = **935-3364**	100K = **935-3372**	1M = **935-3380**
50R = **476-225**	1K = **935-3356**	20K = **348-004**	200K = **348-030**	2M = **476-286**
50R = **935-3445**	2K = **347-978**	20K = **935-3429**	200K = **935-3437**	5M = **476-298**
100R = **347-930**				

3296Y

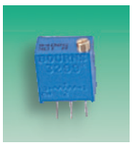
10R = **476-237**	200R = **348-077**	2K = **935-3577**	50K = **348-144**	500K = **935-3658**
10R = **935-3496**	200R = **935-3569**	5K = **348-119**	50K = **935-3640**	1M = **935-3542**
20R = **476-249**	500R = **348-089**	5K = **935-3631**	100K = **348-156**	2M = **476-304**
20R = **935-3550**	500R = **935-3623**	10K = **935-3526**	100K = **935-3534**	2M = **935-3607**
50R = **476-250**	1K = **348-090**	20K = **348-132**	200K = **348-168**	5M = **476-316**
50R = **935-3615**	1K = **935-3518**	20K = **935-3585**	200K = **935-3593**	5M = **935-3666**
100R = **935-3500**	2K = **348-107**			

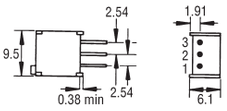
207398

		Price Each					
Style	**Order Code**	1+	50+	100+	500+	+	+
3296P	**All values**	4.00	3.65	3.18	2.58	– –	– –
3296W	**All values**	3.86	3.21	3.15	2.84	– –	– –
3296X	**All values**	3.86	3.21	3.15	2.84	– –	– –
3296Y	**All values**	2.99	2.51	2.47	2.41	– –	– –

0.5 Watt – 3299W Series

BOURNS® Reliable Electronic Solutions

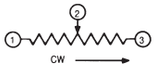




Drilling plan

H=10.3, Pin dia=0.51

- 25 turn low noise high performance cermet trimmers
- Sealed to withstand industrial cleaning solvents
- Moulded with built in 'stand-off's'.



Power rating @ 70°C	0.5W	End resistance	2R max.
Voltage rating	300V	Contact resistance variation	1% or 3Ω whichever >
Resistance tolerance	±10%	Dielectric strength (sea level)	900V ac
Temperature coefficient	±100ppm/°C	Operating temperature	-55°C to +125°C

Stocked in the following OHMIC Values:

3299W

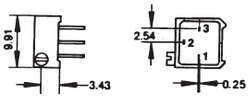
10R = **935-3674**	200R = **935-3747**	2K = **935-3755**	20K = **935-3763**	200K = **935-3771**
20R = **935-3739**	500R = **935-3798**	5K = **935-3801**	50K = **935-3810**	500K = **935-3828**
50R = **935-3780**	1K = **935-3690**	10K = **935-3704**	100K = **935-3712**	1M = **935-3720**
100R = **935-3682**				

207173

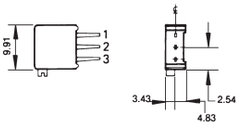
		Price Each					
Style	**Order Code**	1+	50+	100+	500+	+	+
3299W	**All Values** ●	3.83	3.43	3.06	2.61	– –	– –

0.5 Watt – 64 Series

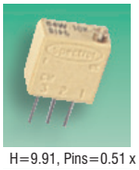
VISHAY Vishay Spectrol

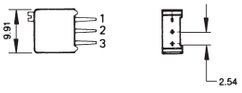


64P H=4.83, Pins=0.51 x 0.25

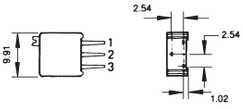


64X H=9.91, Pins=0.51 x 0.25

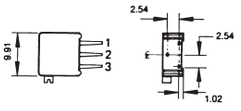




64W H=9.91, Pins=0.51 x 0.25



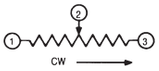
64Y H=9.91, Pins=0.51 x 0.25



Drilling plans

64Z H=9.91, Pins=0.51 x 0.25

- 24 turn trimmer top and side adjusting
- Sealed to withstand industrial cleaning solvents
- Manufactured to meet **MIL-R-22097** specification



Power rating @ 70°C	0.5W	Contact resistance variation	3Ω or 3% whichever >
Voltage rating	300V	Dielectric strength	1000V ac
Resistance tolerance	±10%	Resistance to solder heat	350°C for 3 seconds
Temperature coefficient	±100ppm/°C	Operating temperature	-55°C to +125°C
End resistance	2R or 1% whichever >		

Stocked in the following OHMIC Values:

64P

100R = **960-8303**	1K = **960-8338**	10K = **960-8362**	100K = **960-8397**	500K = **960-8419**
200R = **960-8311**	2K = **960-8346**	20K = **960-8370**	200K = **960-8400**	1M = **960-8427**
500R = **960-8320**	5K = **960-8354**	50K = **960-8389**		

64X

100R = **960-8435**	1K = **960-8460**	10K = **960-8494**	100K = **960-8524**	500K = **960-8540**
200R = **960-8443**	2K = **960-8478**	20K = **960-8508**	200K = **960-8532**	1M = **960-8680**
500R = **960-8451**	5K = **960-8486**	50K = **960-8516**		

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products,
prices are subject to change without notice.

Farnell Page 1185 Date: 21-08-06 time: 19:23

64W

100R = **960-8435** 1K = **960-8591** 10K = **960-8621** 100K = **960-8656** 500K = **960-8672**
200R = **960-8575** 2K = **960-8605** 20K = **960-8630** 200K = **960-8664** 1M = **960-8680**
500R = **960-8583** 5K = **960-8613** 50K = **960-8648**

64Y

100R = **960-8699** 1K = **960-9610** 10K = **960-8745** 50K = **960-8761** 200K = **960-8788**
200R = **960-8702** 2K = **960-8729** 20K = **960-8753** 100K = **960-8770** 1M = **960-8796**
500R = **960-8710** 5K = **960-8737**

64Z

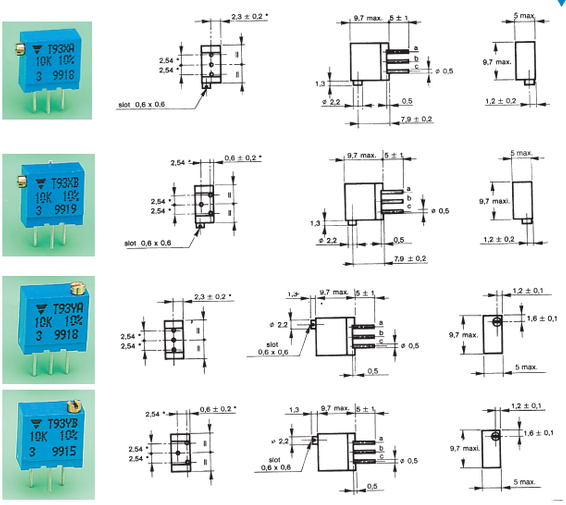
100R = **960-8800** 1K = **960-8834** 10K = **960-8869** 100K = **960-8893** 500K = **960-8915**
200R = **960-8818** 2K = **960-8842** 20K = **960-8877** 200K = **960-8907** 1M = **960-8923**
1K = **960-8826** 5K = **960-8850** 50K = **960-8885**

207300

		Price Each				
Style	Order Code	1+	50+	100+	500+	+
64P	All Values ●	3.74	2.77	2.31	1.99	– –
64X	All Values ●	3.63	2.87	2.36	1.83	– –
64W	All Values ●	3.63	2.87	2.36	1.83	– –
64Y	All Values ●	3.63	2.87	2.36	1.83	– –
64Z	All Values ●	3.74	2.77	2.31	1.99	– –

0.5 Watt - T93 Series

VISHAY



● 22 turn cermet trimmers ● Wide operating temperature range
● Sealed to **IP67**

Power rating @ 85°C	0.5W	End resistance	1R
Voltage rating	250V	Contact resistance variation	2% or 2Ω
Resistance tolerance	±10%	Dielectric strength	1000V
Temperature coefficient	±100ppm/°C	Operating temperature	-55°C to +155°C

Stocked in the following OHMIC Values

T93XA

100R = **114-1370** 1K = **114-1373** 10K = **114-1377** 50K = **114-1379** 200K = **114-1381**
200R = **114-1371** 2K = **114-1374** 20K = **114-1378** 100K = **114-1380** 500K = **114-1382**
500R = **114-1372** 5K = **114-1376**

T93XB

100R = **114-1383** 1K = **114-1386** 10K = **114-1390** 100K = **114-1393** 500K = **114-1395**
200R = **114-1384** 2K = **114-1388** 20K = **114-1391** 200K = **114-1394** 1M = **114-1396**
500R = **114-1385** 5K = **114-1389** 50K = **114-1392**

T93YA

100R = **114-1397** 1K = **114-1401** 10K = **114-1404** 100K = **114-1408** 500K = **114-1410**
200R = **114-1398** 2K = **114-1402** 20K = **114-1406** 200K = **114-1409** 1M = **114-1411**
500R = **114-1400** 5K = **114-1403** 50K = **114-1407**

T93YB

100R = **114-1412** 1K = **114-1415** 10K = **114-1419** 100K = **114-1422** 500K = **114-1424**
200R = **114-1413** 2K = **114-1416** 20K = **114-1420** 200K = **114-1423** 1M = **114-1425**
500R = **114-1414** 5K = **114-1418** 50K = **114-1421**

207318

		Price Each				
Style	Order Code	1+	50+	100+	500+	+
T93XA	All Values ●	3.83	3.02	2.52	1.54	– –
T93XB	All Values ●	3.83	3.02	2.52	1.54	– –
T93YA	All Values ●	3.83	3.02	2.52	1.54	– –
T93YB	All Values ●	3.83	3.02	2.52	1.54	– –

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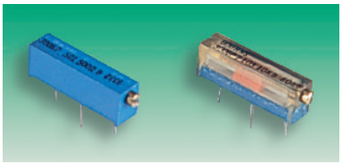
www.farnell-newarkinone.com.sg

The very latest NEW products

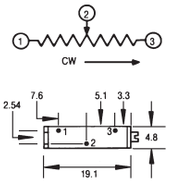
¾" (19.1mm) Multi Turn Cermet Trimmers

1.25 Watt – 3006 Series

BOURNS® Reliable Electronic Solutions



3006P (standard) 3006P-7 (transparent)
H=6.35, Pin dia=0.5



Drilling plan, top view

● 15 turn cermet trimmers
● Sealed to withstand industrial cleaning solvents
● Version with transparent housing allows visual wiper setting

Power rating @ 25°C	1.25W (0.75W @ 70°C)	End resistance	2 Ω max
Voltage rating	400V	Contact resistance variation	1% or 1Ω whichever >
Resistance tolerance	±10%	Dielectric strength (sea level)	1000V ac
Temperature coefficient	±100ppm/°C	Operating temperature	-55°C to +125°C

Stocked in the following OHMIC Values:

3006P (standard)

10R = **935-2260** 500R = **935-2376** 5K = **935-2384** 20K = **935-2341** 200K = **935-2350**
50R = **935-2368** 1K = **935-2287** 10K = **935-2295** 50K = **935-2392** 500K = **935-2406**
100R = **935-2279** 2K = **935-2333** 10K = **935-2295** 100K = **935-2309** 1M = **935-2317**
200R = **935-2325**

3006P-7 (transparent)

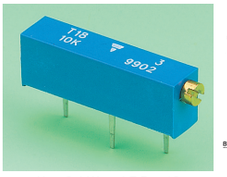
10R = **935-2414** 1K = **935-2422** 5K = **935-2503** 20K = **935-2473** 100K = **935-2449**
200R = **935-2457** 2K = **935-2465** 10K = **935-2430** 50K = **935-2511** 200K = **935-2481**
500R = **935-2490**

207399

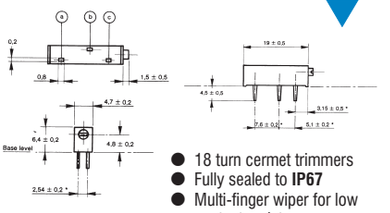
		Price Each					
Style	Order Code	1+	50+	100+	500+	+	+
3006P (standard)	All Values ●	2.91	2.65	2.30	1.70	– –	– –
3006P-7 (transparent)	All Values ●	2.41	2.12	1.92	1.56	– –	– –

0.75 Watt - T18 Series

VISHAY



H = 6.4 W = 4.7 D =19
Pin size = 0.8 x 0.2



● 18 turn cermet trimmers
● Fully sealed to **IP67**
● Multi-finger wiper for low contact resistance

Power rating @ 70°C	0.75W	End resistance	1R
Voltage rating	250V	Contact resistance variation	2% or 2Ω
Resistance tolerance	±10%	Dielectric strength	1000V
Temperature coefficient	±100ppm/°C	Operating temperature	-55°C to +125°C

Stocked in the following OHMIC Values:

100R = **114-1456** 1K = **114-1459** 10K = **114-1462** 100K = **114-1465** 500K = **114-1468**
200R = **114-1457** 2K = **114-1460** 20K = **114-1463** 200K = **114-1467** 1M = **114-1469**
500R = **114-1458** 5K = **114-1461** 50K = **114-1464**

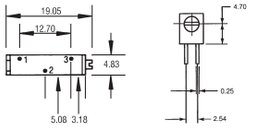
207320

	Price Each				
Order Code	1+	25+	50+	100+	+
All Values ●	2.28	2.21	2.18	1.53	– –

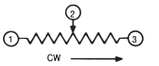
0.75 Watt – 43P Series

VISHAY Vishay Spectrol

43P (standard)
H=6.35, Pin dia=0.5



Drilling plan, top view



● 20 turn cermet trimmers completely sealed against dust and humidity
● Manufactured to meet **MIL-R-22097** specifications.

Power rating @ 25°C	0.75W	End resistance	2Ω max
Voltage rating	400V	Contact resistance variation	3% or 3Ω whichever >
Resistance tolerance	±10%	Dielectric strength	1000V ac
Temperature coefficient	±100ppm/°C	Operating temperature	-55°C to +125°C

Stocked in the following OHMIC Values:

43P (Standard)

20R = **960-8931** 200R = **960-8966** 2K = **960-8990** 20K = **960-9024** 200K = **960-9059**
50R = **960-8940** 500R = **960-8974** 5K = **960-9008** 50K = **960-9032** 500K = **960-9067**
100R = **960-8958** 1K = **960-8982** 10K = **960-9016** 100K = **960-9040** 1M = **960-9075**

207311

		Price Each				
Style	Order Code	1+	25+	50+	100+	+
43P (standard)	All Values ●	2.61	2.46	2.33	1.73	– –

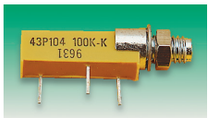
RoHS ● Compliant ◀ Non-compliant ++ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

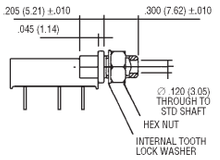
Farnell Page 1186 Date: 21-08-06 time: 19:23

0.75W–43P – Panel Mount

VISHAY
Vishay Spectrol



Panel cut out 4.6



- Panel mounting version of the popular 43P
- Pin outs and specification are the same as the 43P

Stocked in the following OHMIC Values

5K = **960-9679**	100K = **960-9717**	500R = **960-9644**	20K = **960-9695**	500K = **960-9733**
10K = **960-9687**	100R = **960-9628**	1K = **960-9652**	200K = **960-9725**	1M = **960-9741**
50K = **960-9709**	200R = **960-9636**	2K = **960-9660**		

Mftrs. List No. 43PT601 + value

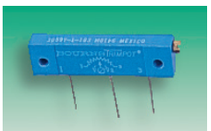
207264

	Price Each				
Order Code	1+	25+	50+	+	+
All Values ●	3.14	3.02	2.91	– –	– –

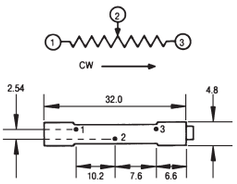
1 ¼" (32.0mm) Multi Turn Cermet Trimmers

1.0 Watt – 3059Y Series

BOURNS®
Reliable Electronic Solutions



H=8.0, Pin dia=0.8



Drilling plan, top view

2 x 3.4 holes, 25.4 Fixing centres

- 22 turn cermet trimmers
- To **MIL-R-22097** requirements.

Power rating @ 70°C	1.0W	End resistance	2Ω max
Voltage rating	400V	Contact resistance variation	1% or 1Ω whichever >
Resistance tolerance	±10%	Dielectric strength (sea level)	900V ac
Temperature coefficient	±100ppm/°C	Operating temperature	-55°C to +150°C

Stocked in the following OHMIC Values:

100R = **935-2520**	2K = **935-2562**	20K = **935-2570**	100K = **935-2554**
500R = **935-2589**	5K = **935-2597**	50K = **935-2600**	500K = **935-2619**
1K = **935-2538**	10K = **935-2546**		

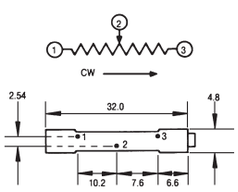
207400

	Price Each				
Order Code	1+	50+	100+	500+	+
All Values ●	14.48	13.32	12.10	9.04	– –

1.0 Watt - 70Y Series

VISHAY
Vishay Spectrol

H=8.0, Pin dia=0.8



Drilling plan, top view

- 20 turn cermet trimmers
- To **MIL-R-22097** requirements.

Power rating @ 85°C	1W	End resistance	2Ω max
Voltage rating	400V	Contact resistance variation	3% or 3Ω whichever >
Resistance tolerance	±10%	Dielectric strength (sea level)	1000V ac
Temperature coefficient	±100ppm/°C	Operating temperature	-55°C to +150°C

Stocked in the following OHMIC Values:

100R = **960-9083**	2K = **960-9113**	20K = **960-9148**	200K = **960-9172**
500R = **960-9091**	5K = **960-9121**	50K = **960-9156**	500K = **960-9180**
1K = **960-9105**	10K = **960-9130**	100K = **960-9164**	1M = **960-9199**

207415

	Price Each				
Order Code	1+	25+	100+	250+	+
All Values ●	11.32	10.87	9.32	8.19	– –

Trimming Tools

Single

Double ended tools suitable for adjusting most types of single and multi turn trimmers.

H91 for use with 3224 SMD trimmer

207342

		Price Each			
	Order Code	1+	50+	250+	500+
Spectrol	**145-507**	3.57	3.09	2.85	2.55
Bourns H90	**109-151**	4.62	4.26	3.66	3.24
Bourns H91	**869-144**	4.62	4.26	3.66	3.24

Single Turn Potentiometers

Cermet vs Conductive Plastic (CP) Elements

Cermet Elements generally have:
- Higher power rating than CP
- Higher temperature stability than CP
- Higher temperature stability than CP
- Can be produced in a wider range of ohmic values than CP

Plus:
- They are very resistant to high humidity conditions
- Tighter tolerances are available on nominal resistance

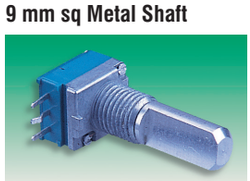
Conductive Plastic Elements generally have a:
- Longer Life than Cermet
- Lower Electrical noise than Cermet

Please refer to individual product specifications for further information.

387202

9 mm sq Metal Shaft

ALPS



- Compact size PCB mounting
- Ideal for volume, tone and balance control in audio equipment.

Body size = 9.5 x 9.5 D = 7.05 (dual D = 9.55)
Bush= M7 x 0.75 L = 20
642-915, 642-897 Round shaft with slot
642-903 Flatted shaft

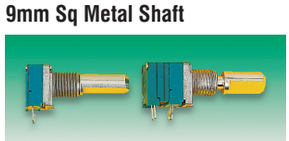
Power rating	0.05W	Resistance tolerance	±20%
Voltage rating	50V a.c.		RK09711110K = 119-1710

207231

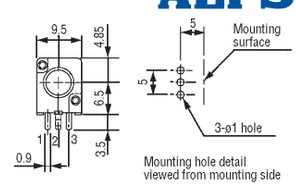
		Price Each			
	Order Code	1+	10+	25+	50+
Linear					
Flatted shaft 10K single	**119-1710**●	7.50	6.30	5.42	4.10

9mm Sq Metal Shaft

ALPS



Flatted Shaft=6 dia Bush=M7 x 0.75
Bush length=10 Shaft Length=25 (inc. bush)



Mounting hole detail viewed from mounting side

- Metal shaft bush mounting
- Available with up to 2 gangs, single to double units
- Low gang error for superior performance

Mftrs. List No: RK09711 Series

Power rating	0.05W		9.55 (Dual)
Voltage rating	50V a.c.	Mounting height	6.5
Resistance tolerance	±20%	Voltage rating	16V d.c. (switch)
Body length	7.05 (single)	Current rating	3A (switch)

A Taper Single Gang - Logarithmic
100K = **919-408** 250K = **919-410**

B Taper Single Gang - Linear
50K = **119-1751**

RD Taper Single Gang (Reverse Log)
5K = **919-524**

Single Gang with SPDT Switch A Taper - Logarithmic
20K = **119-1752**

Single Gang with SPDT Switch B Taper - Linear
10K = **119-1753**

	Price Each				
	1+	10+	50+	100+	+
All Values Taper A,B & RD	5.42	5.07	4.79	3.34	– –
All Values with Switch	12.28	11.56	10.93	7.53	– –

A Taper Dual Gang - Logarithmic
10K = **119-1754** 50K = **119-1756**

B Taper Dual Gang - Linear
10K = **119-1757** 20K = **119-1758**

207256

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

C = CYAN M = Magenta Y = Yellow B = Black/SING

	Price Each				
	1+	10+	50+	100+	+
All Values Taper A & B	5.64	5.26	4.98	3.43	– –

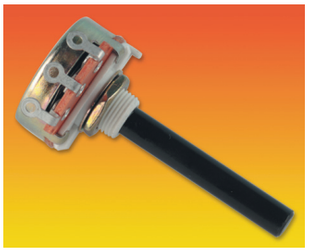
0.5 Watt - Linear, 0.2 Watt - Logarithmic MC24 Series – Carbon

multicomp

Low cost linear and logarithmic carbon potentiometers, with 6mm diameter plastic spindle, for panel mounting applications. Available in standard format or SPST switched version.

Power rating	0.5W (linear) 0.25W (logarithmic)	Resistance tolerance	±20%
		Mechanical rotation	300° nom.
Voltage rating	500V	Dielectric strength	500V ac peak

Standard



L=11.5 (body), 42 (spindle, inc. bush)
Dia=24 (body), 6 (spindle)
Mounting bush=⅜" x 0.75, L=6.5
Panel cut-out=8.2 dia

Stocked in the following OHMIC Values:

Linear (B Taper)

1K = **926-5287** 4K7 = **926-5309** 10K = **926-5481** 100K = **926-5341** 470K = **926-5368**
2K2 = **926-5295** 4K7 = **926-5473** 22K = **926-5325** 100K = **926-5490** 1M = **926-5376**
2K2 = **926-5465** 10K = **926-5317** 47K = **926-5333** 220K = **926-5350** 1M = **926-5503**

Logarithmic (A Taper)

1K = **926-5384** 4K7 = **926-5511** 22K = **926-5414** 220K = **926-5430** 1M = **926-5457**
4K7 = **926-5392** 10K = **926-5406** 100K = **926-5422** 470K = **926-5449** 1M = **926-5520**

311153

		Price Each				
Style	Order Code	1+	25+	100+	250+	+
Linear (B)	**All Values** ●	1.89	1.69	1.46	1.33	– –
Log (A)	**All Values** ●	2.41	2.21	1.76	1.56	– –

0.4 Watt (Linear), 0.2 Watt (Logarithmic) – 23 Series Carbon

tyco/Electronics Citec

Low cost high quality range of carbon logarithmic and linear potentiometers, having 5mm spacing between pins, suitable for panel mounting applications. The plastic spindle has a flat along its full length. Versions available with single carbon track, single track with DPST switch and double ganged carbon track.

Power rating @ 40°C	0.2W (logarithmic) 0.4W (linear)	Mechanical rotation	300° nom.
		Terminal resistance	5Ω max.
Voltage rating	500V	Dielectric strength	1000V ac peak
Resistance tolerance	±20%	Operating temperature	-10°C to +70°C
Electrical rotation	267° nom.		

Carbon Track

L=10.7 (body), 50.0 (spindle, inc. bush)
Dia=20.4 (body), 6.35 (spindle)
Mounting bush=7.4 x M9.5
Panel cut-out=9.6 dia

Stocked in the following OHMIC Values:

23 LIN

1K = **117-4082** 4K7 = **350-060** 22K = **350-084** 100K = **350-102** 470K = **350-126**
2K2 = **350-059** 10K = **350-072** 47K = **350-096** 220K = **350-114** 1M = **350-138**

23 LOG

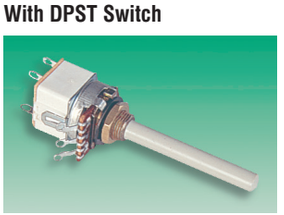
1K = **350-140** 4K7 = **350-163** 22K = **350-187** 100K = **350-205** 470K = **350-229**
2K2 = **117-4084** 10K = **350-175** 47K = **350-199** 220K = **350-217** 1M = **350-230**

207166

		Price Each				
Style	Order Code	1+	25+	100+	250+	+
23 LIN	**All Values** ●	2.08	1.86	1.63	1.53	– –
23 LOG	**All Values** ●	2.82	2.65	2.27	1.76	– –

With DPST Switch

tyco/Electronics Citec



L=23.0 (body), 51.0 (spindle, inc bush)
Dia=20.4 (body), 6.35 (spindle) Mounting bush=7.4 x M9.5 Spindle material=plastic

Switch rating	250V ac @ 4A
Electrical rotation	232°

Stocked in the following OHMIC Values:

Linear

2K2 = **776-221** 4K7 = **106-476** 10K = **106-477** 100K = **106-478** 1M = **106-479**

Logarithmic

4K7 = **106-480** 10K = **106-481** 1M = **117-3879**

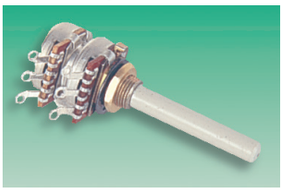
Mftrs. List No. Linear Track 23ESAxxxMMF50AF, Logarithmic Track 23ESBxxxMMF50AF where xxx = resistance and multipier

207414

		Price Each				
Style	Order Code	1+	25+	100+	250+	+
Linear	**All Values** ●	7.37	6.74	6.30	4.85	– –
Logarithmic	**All Values** ●	8.25	7.47	6.62	5.26	– –

Double Ganged

tyco/Electronics Citec



L=21.0 (body), 50.0 (spindle inc bush)
Dia=20.4 (body), 6.35 (spindle)
Mounting bush=7.4 x M9.5
Spindle material = plastic

Stocked in the following OHMIC Values:

Linear

4K7 = **117-3888** 10K = **117-3890** 47K = **117-3986** 100K = **117-3987**

Logarithmic

4K7 = **117-3891** 10K = **117-3892** 47K = **117-3988** 100K = **117-3989**

Mftrs List No. Linear Track 27ESAxxxMMF43NF, Logarithmic Track 27ESBxxxMMF43NF where xxx = resistance and multiplier

207185

		Price Each				
Style	Order Code	1+	25+	100+	250+	+
Linear	**All Values** ●	5.92	5.47	5.08	4.17	– –
Logarithmic	**All Values** ●	7.12	6.55	6.05	4.60	– –

0.2 Watt (Linear), 0.1 Watt (Logarithmic) PC-16 Series Carbon

PIHER

Body: H = 18, W = 16, D = 8 (single), 13.6 (single switched), 16 (dual gang)
Spindle: L = 45 (inc bush), dia = 6 Bush = M10 x 0.75

- PCB mounting carbon plastic potentiometers
- Plastic 6mm diameter spindle
- Linear or logarithmic track
- Single, single switched or dual gang options
- PCB mounting bracket for single gang type

Power rating @ 50°C	0.2W (linear) 0.1W (logarithmic)	Voltage rating	250V
		Mechanical rotation	300° ± 5°
Resistance tolerance	±20%	Operating temperature	-25°C to 70°C

Stocked in the following OHMIC Values:

Single Gang - Linear

100R = **445-2707** 22K = **445-2744** 220K = **445-2770**
1K = **445-2719** 47K = **445-2756** 470K = **445-2781**
4K7 = **445-2720** 100K = **445-2768** 1M = **445-2793**
10K = **445-2732**

Single Gang - Logarithmic

4K7 = **445-2800** 47K = **445-2823** 470K = **445-2847**
10K = **445-2811** 100K = **445-2835**

Single Gang Switched - Linear

4K7 = **445-2859** 47K = **445-2872** 470K = **445-2896**
10K = **445-2860** 100K = **445-2884**

Single Gang Switched - Logarithmic

4K7 = **445-2902** 47K = **445-2926** 470K = **445-2940**
10K = **445-2914** 100K = **445-2938**

Dual Gang - Linear

4K7 = **445-2951** 47K = **445-2975** 470K = **445-2999**
10K = **445-2963** 100K = **445-2987**

Dual Gang - Logarithmic

4K7 = **445-3001** 47K = **445-3025** 470K = **445-3049**
10K = **445-3013** 100K = **445-3037**

RoHS ● Compliant ◄ Non-compliant ‡ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

Farnell Page 1188 Date: 21-08-06 time: 19:25

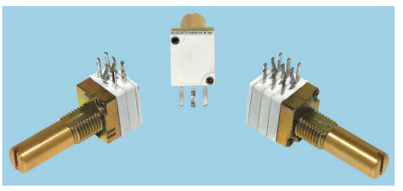
311971

	Order Code	Price Each 1+	10+	50+	200+
Single gang - linear	All Values	2.60	2.21	2.05	1.43
Single gang - logarithmic	All Values	3.74	3.22	2.93	2.25
Single gang switched - llinear	All Values	6.05	5.14	4.49	4.00
Single gang switched - logarithmic	All Values	6.12	5.31	4.72	4.30
Dual gang - linear	All Values	5.50	4.23	3.55	3.32
Dual gang - logarithmic	All Values	6.44	5.86	5.47	5.08
Mounting bracket	445-3050	0.74	0.67	0.55	0.45

P9A Series

0.1W (Linear) & 0.05W (Logarithmic)

VISHAY Vishay Spectrol



Body H = 12.5, W, = 12.5, D = 7.1 (Single Gang), 9.6 (Dual Gang)
Shaft L = 20, Dia = 6, Bush (metal) = M7 x 0.75
Pin thickness = 3

NEW

- Panel & PCB mounting conductive plastic potentiometers
- Single or Dual gang versions
- Ultra compact
- Ideal for professional audio applications

Dielectric Strength - sea level	350VAC	Temperature coefficient	±1000ppm/°C
Electrical rotation	270° ±10°	Power rating	0.1W (Linear) @ 70°C
End Resistance	2R		0.05W (Log) @ 70°C
Mechanical rotation	300°±5°		0.05W (Dual Linear) per module
Operating temperature	-55°C to +125°C		0.025W (Dual Log) per module
Resistance tolerance	±20%		

Stocked in the following OHMIC Values:

Single Linear
1K = **879-1287** 10K = **879-1295** 50K = **879-1309**

Single Logarithmic
1K = **879-1317** 10K = **879-1325** 50K = **879-1333**

Dual Linear
1K = **879-1341** 10K = **879-1350** 50K = **879-1368**

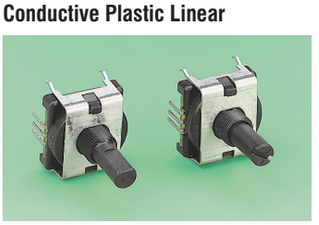
Dual Logarithmic
1K = **879-1376** 10K = **879-1384** 50K = **879-1392**

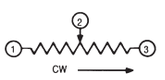
385824

Style	Order Code	Price Each 1+	10+	50+	100+
Single Linear	All Values ●	10.12	9.63	8.92	8.37
Single Log	All Values ●	10.12	9.63	8.92	8.37
Dual Linear	All Values ●	16.18	15.17	14.42	13.67
Dual Log	All Values ●	16.18	15.17	14.42	13.67

0.25 Watt - 174 Series PCB Mounted Conductive Plastic Linear

VISHAY Vishay Spectrol





Body
H = 21, W = 21, D = 8.7
Shaft = ¾" (inc bush) x ¼" dia.,
Bush = 6.35 x M9

- Low profile flat-pak conductive plastic potentiometers
- Flatted or slotted plastic shafts

Power rating @ 70°C	0.25W	Mechanical rotation	300°±5°
Resistance tolerance	±20%	Dielectric strength	±750V ac
Electrical rotation	270°±5°	Operating temperature	-40°C to +120°C

Stocked in the following OHMIC Values:

Flatted shaft
10K = **307-0920** 50K = **307-0931** 100K = **307-0943**

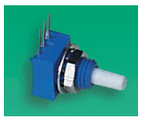
Slotted shaft
10K = **307-0955** 50K = **307-0967** 100K = **307-0979**

207330

Style	Order Code	Price Each 1+	10+	50+	100+	+
Flatted shaft	All Values	8.39	7.56	6.65	4.32	– –
Style	Order Code	1+	10+	50+	100+	+
Slotted shaft	All Values	7.81	7.36	6.31	5.01	– –

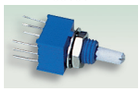
0.25 Watt – 3310 Series

BOURNS® Reliable Electronic Solutions



3310C

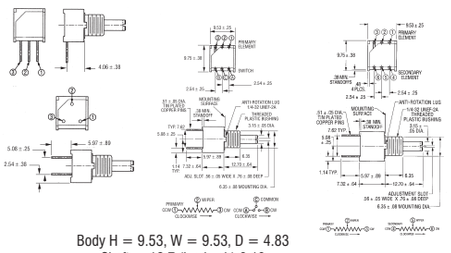
3310Y



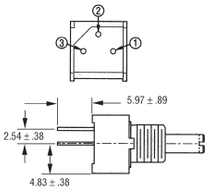
3310H-003

3310H-001

3310P



Body H = 9.53, W = 9.53, D = 4.83
Shaft = 12.7 (inc bush) 3.18
Bush = ¼-32 UNEF-2A



- Linear potentiometer for PCB mounting
- Compact size saving valuable board space
- Withstands industrial washing.

Power rating @ 70°C	0.25W	End resistance	2Ω
Voltage rating	200V	Contact resistance Variation	1% or 1Ω
Resistance tolerance	±20%	Dielectric strength (sealed)	900V
Temperature coefficient	1000ppm/°C	Operating temperature	-55°C to +125°C

Stocked in the following OHMIC Values:

3310C
1K = **935-3836** 5K = **935-3895** 20K = **935-3879** 100K = **935-3852** 500K = **935-3917**
2K = **935-3860** 10K = **935-3844** 50K = **935-3909** 200K = **935-3887**

3310Y Single gang vertical
1K = **115-6139** 5K = **115-6141** 20K = **935-3992** 100K = **935-3984** 500K = **115-6142**
2K = **115-6140** 10K = **935-3976** 50K = **935-4000**

3310H-001 Dual gang vertical
1K = **115-6143** 10K = **935-3925** 20K = **115-6144** 100K = **935-3933** 1M = **935-3941**

3310H-003 Single gang with switch vertical
10K = **935-3950** 100K = **935-3968**

3310P
1K = **115-6132** 10K = **115-6134** 50K = **115-6136** 100K = **115-6137** 500K = **115-6138**
5K = **115-6133**

207210

Style	Order Code	Price Each 1+	100+	500+	1K+
3310C	All Values ●	3.66	3.09	2.77	2.53
3310P	All Values ●	4.10	3.48	3.16	2.77
3310Y	All Values ●	3.66	3.09	2.77	2.53
3310H-001	All Values ●	6.77	6.00	– –	– –
3310H-003	All Values ●	6.81	5.45	4.95	4.70

0.5 Watt - 192 Series Panel Mounted

Conductive Plastic Linear

VISHAY Vishay Spectrol

- Panel mounting miniature conductive plastic potentiometers
- Plastic or metal shafts

Body L = 12.3, Dia. = 12.7
Shaft = 7/8" (inc bush) x 1/8" dia.
Mounting bush = 1/4" x 32 NEF-2A

Specifications

Power rating @ 70°C	0.5W	Mechanical rotation	295°±5°
Resistance tolerance	±10%	Dielectric strength (sealed)	750V ac
Voltage rating	350V dc	Operating temperature	-40°C to +120°C

Stocked in the following OHMIC Values:

Plastic shaft
1K = **114-4757** 10K = **114-4759** 100K = **114-4761**
5K = **114-4758** 50K = **114-4760** 500K = **114-4762**

Metal shaft
1K = **114-4750** 10K = **114-4752** 100K = **114-4755**
5K = **114-4751** 50K = **114-4754** 500K = **114-4756**

207374

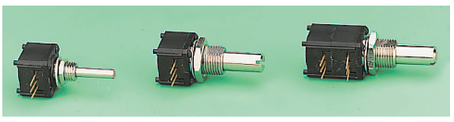
Style	Order Code	Price Each 1+	10+	50+	100+
Plastic shaft	All Values ●	14.16	13.09	11.49	6.74
Metal shaft	All Values	23.85	21.42	19.18	10.52

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products,
prices are subject to change without notice.

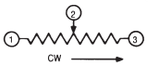
C = CYAN M = Magenta Y = Yellow B = Black/SING

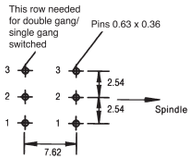
0.5 Watt - 148 Series - PCB Mounted Conductive Plastic Linear, Single, Double Gang & Single Switched

VISHAY Vishay Spectrol



Body H = 12.7, W, = 12.7, D = 11.9 (Double Gang & Single Switched = 20)
Shaft = ¾" (inc bush) x ⅛" dia., Bush = ¼" x 32 UNEF
Shaft = ⅞" (inc bush) x ¼" dia., Bush = ⅜" x 32 UNEF





- Panel and PCB mounting conductive plastic potentiometers
- Choice of shaft sizes
- Double gang or single gang switched versions

Power rating @ 70°C	0.5W	Mechanical rotation	295° ± 5°
Resistance toloerance	±10%	Dielectric strength	750V ac
Temperature coefficient	±1000ppm/°C	Operating temperature	-40°C to +120°C
Electrical rotation	265° ± 5°(without switch) 240° ± 5°(with switch)		

Stocked in the following OHMIC Values:

148-SXN ⅛" dia. shaft single gang
1K = **307-0700** 5K = **307-0712** 10K = **307-0724** 20K = **307-0736** 50K = **307-0748**

148-SXG ¼" dia. shaft single gang
1K = **307-0750** 5K = **307-0761** 10K = **307-0773** 20K = **307-0785** 50K = **307-0797**

148-DXG ¼" dia. shaft double gang
1K = **307-0803** 5K = **307-0815** 10K = **307-0827**

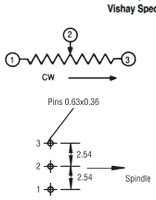
148-SSG ¼" dia. shaft single gang switched
1K = **307-0839** 5K = **307-0840** 10K = **307-0852**

207331

Style	Order Code	Price Each 1+	25+	100+	250+	+
⅛" single gang	All Values	6.09	– –	– –	– –	– –
¼" single gang	All Values	6.09	– –	– –	– –	– –
¼" double gang	All Values	10.37	– –	– –	– –	– –
¼" single gang switched	All Values	11.25	– –	– –	– –	– –

0.5W – 248 Series PCB Mounted Conductive Plastic

VISHAY Vishay Spectrol



Body H=12.7, W=12.7, D=7.6
Spindle= ¾" (inc. bush) x ⅛" dia., Bush= ¼" x 32 UNEF
Spindle= ⅞" (inc. bush) x ¼" dia., Bush= ⅜" x 32 UNEF

- Panel and PCB mounting conductive plastic
- Space saving short body
- Metal or plastic shafts, ⅛" (3.17mm) or ¼" (6.35mm) diameter.

Power rating @ 70°C	0.5W	Mechanical rotation	295° ± 5°
Resistance toloerance	±20%	Dielectric strength	750V ac
Temperature coefficient	±1000ppm/°C	Operating temperature	-55°C to +125°C
Electrical rotation	265° ± 5°		

Stocked in the following OHMIC Values:

248-8-08 ⅛" dia. metal shaft linear
500R = **960-9393** 2K5 = **960-9415** 10K = **960-9431** 50K = **960-9458**
1K = **960-9407** 5K = **960-9423** 25K = **960-9440** 100K = **960-9466**

248J-8-08 ⅛" dia. metal shaft logarithmic
10K = **960-9474** 50K = **960-9482** 100K = **960-9490**

248J-7-10 ¼" dia. Plastic shaft linear
500R = **960-9504** 2K5 = **960-9520** 10K = **960-9547** 50K = **960-9563**
1K = **960-9512** 5K = **960-9539** 25K = **960-9555** 100K = **960-9571**
2K5 = **614-397**

248J-7-10 ¼" dia plastic shaft logarithmic
10K = **960-9580** 50K = **960-9598** 100K = **960-9601**

Mftrs. List No. 248-8-08 + value, 248J-8-8-08 + value, 248-7-10 + value, 248J-7-10 + value

207225

Style	Order Code	Price Each 1+	25+	50+	100+	+
⅛" Linear	All Values ●	5.83	5.26	4.98	4.35	– –
⅛" Logarithmic	All Values ●	6.32	5.61	5.36	4.63	– –
¼" Linear	All Values ●	5.83	5.26	4.98	4.35	– –
¼" Logarithmic	All Values ●	6.33	5.61	5.36	4.63	– –

0.75 Watt – PC Series – PCB Mounted Conductive Plastic Linear

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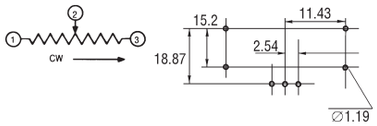


Drilling plan

H=8.31, W=23.4, D=22.2,
Spindle = ¾" (inc bush) x ¼" dia
Bush=6.35 x M9

- Slimline conductive plastic potentiometers
- With or without central reference position

Power rating @ 70°C	0.75W	Linearity	±5%
Voltage rating	350V (or limited by power dissipation whichever<)	Terminal resistance	5Ω
Resistance toloerance	±20%	Dielectric strength (sea level)	1000V ac
Electrical rotation	270° ±5°	Operating temperature	+1°C to + 125°C
Mechanical rotation	300° ±5°		

Stocked in the following OHMIC Values:

Standard 1K = **935-8285** 5K = **935-8307** 10K = **935-8293**
Central Referance position 1K = **935-8315** 5K = **935-8331** 10K = **935-8323**

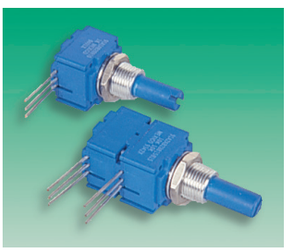
Mftrs. List No. PCW1JB24KAB + Value (Standard), PCW1JB24KCB + Value (Central reference position)

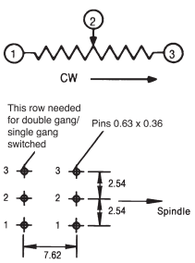
207181

Style	Order Code	Price Each 1+	25+	50+	100+
Standard	All Values ●	9.63	8.85	7.88	6.14
Central reference position	All Values ●	10.15	9.29	8.32	6.52

1W (Linear), 0.5W (Logarithmic) – 91 Series PCB Mounted Conductive Plastic Single & Double Gang

BOURNS Reliable Electronic Solutions





Drilling plan

H=17.5, W=15.9, D=12.7
(Double gang=22.8)
Spindle=22.2 (inc bush x 6.35 dia)
Bush= ⅜ x 32UNEF

Power rating @ 70°C	Linear 1W Logarithmic 0.5W	Contact resistance variation	1% or 3Ω whichever>
Voltage rating	350V ac (or limited by power dissipation whichever<)	Dielectric strength (sea level)	1000V ac
		Electrical rotation	240°
Resistance tolerance	±20%	Mechanical rotation	300° ± 5°
Temperature coefficient	±1000ppm/°C	Operating temperature	+1°C to +125°C
Terminal resistance	2Ω		

Stocked in the following OHMIC Values:

Linear
2K5 = **935-7742** 5K = **935-7750** 25K = **935-7777** 100K = **935-7793**
1K = **935-7734** 10K = **935-7769** 50K = **935-7785** 250K = **935-7807**

Logarithmic
1K = **935-7815** 10K = **935-7823** 100K = **935-7831**

Double Gang
10K Linear = **935-7840** 10K Logarithmic = **935-7858**

Mftrs. List No. Single Gang: 91A1A-B28-B + Value (Linear), 91A1A-B28-D – Value (logarithmic)
Double Gang: 91A2A-B28-B + Value (Linear), 91A2A-B28-D – Value (logarithmic)

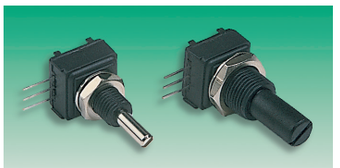
207402

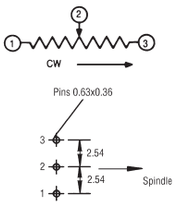
Style	Order Code	Price Each 1+	10+	50+	100+	+
Linear	All Values ●	8.25	7.92	7.92	5.68	– –
Logarithmic	All Values ●	14.02	11.56	9.39	6.77	– –
Double Gang	All Values ●	24.04	20.03	16.29	11.72	– –

RoHS ● Compliant ◄ Non-compliant ++ Limited stock - RoHS replacement available

1W – 249 Series – PCB Mounted Cermet
Linear

VISHAY
Vishay Spectrol





Body H=12.7, W=12.7, D=7.6
Spindle= ¾" (inc. bush) x ⅛" dia. Bush= ¼" x 32 UNEF
Spindle= ⅞" (inc. bush) x ¼" dia. Bush= ⅜" x 32 UNEF

- Panel and PCB mounting cermet
- 1 watt rating with space saving design
- Metal or plastic shafts, ⅛" (3.17mm) or ¼" (6.35mm) diameter.

Power rating @ 70°C	1W	Mechanical rotation	295°±5°
Resistance tolerance	±10%	Dielectric strength	750V ac
Temperature coefficient	±100ppm/°C	Operating temperature	-55°C to +125°C
Electrical rotation	265°±5°		

Stocked in the following OHMIC Values:

249-8-08 ⅛dia. metal shaft
500R = **960-9202** 2K5 = **960-9229** 10K = **960-9245** 50K = **960-9261** 500K = **960-9288**
1K = **960-9210** 5K = **960-9237** 25K = **960-9253** 100K = **960-9270**

249-7-10 ¼ dia. plastic shaft
500R = **960-9296** 2K5 = **960-9318** 10K = **960-9342** 50K = **960-9369** 500K = **960-9385**
1K = **960-9300** 5K = **960-9326** 25K = **960-9350** 100K = **960-9377**

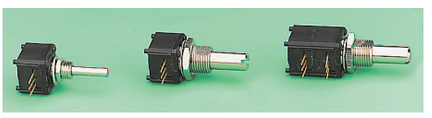
Mftrs. List No. 249-8-08 + value, 249-7-10 + value

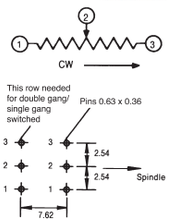
207226

Order Code	Price Each 1+	25+	50+	100+	+
All Values ●	5.92	5.47	5.11	4.75	– –

1W – 149 Series – PCB Mounting Cermet Linear
Single, Double Gang & Single Switched

VISHAY
Vishay Spectrol





Body H = 12.7, W, = 12.7, D = 11.9
(Double Gang & Single Switched = 20)
Shaft = ¾" (inc bush) x ⅛" dia., Bush = ¼" x 32 UNEF
Shaft = ⅞" (inc bush) x ¼" dia., Bush = ⅜" x 32 UNEF

- Linear cermet PCB or wire terminating
- Square design with metal shafts
- Double gang or single switched versions

Power rating @ 80°C	1W		
Resistance tolerance	±10%	Mechanical rotation	295° ±5°
Temperature coefficient	±150ppm/°C	Dielectric strength	750V
Electrical rotation	265° ±5° (without switch) 240° ±5° (with switch)	Operating temperature	-55°Cto +150°C

Stocked in the following OHMIC Values:

149-SXN ⅛" shaft single gang
250R = **329-7858** 2K5 = **329-7883** 25K = **329-7913** 250K = **329-7949**
500R = **329-7860** 5K = **329-7895** 50K = **329-7925** 500K = **329-7950**
1K = **329-7871** 10K = **329-7901** 100K = **329-7937** 1M = **329-7962**

149-SXG ¼" shaft single gang
100R = **329-7974** 2K5 = **329-8012** 25K = **329-8048** 250K = **329-8073**
250R = **329-7986** 5K = **329-8024** 50K = **329-8050** 500K = **329-8085**
500R = **329-7998** 10K = **329-8036** 100K = **329-8061** 1M = **329-8097**
1K = **329-8000**

149-DXG ¼" dia. shaft double gang
1K = **307-0864** 5K = **307-0876** 10K = **307-0888**

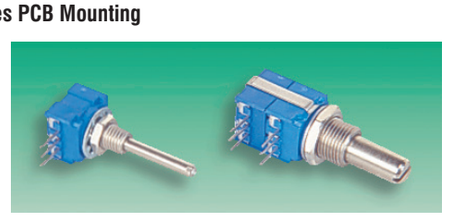
149-SSG ¼" dia. shaft single gang switch
1K = **307-0890** 5K = **307-0906** 10K = **307-0918**

227221

Style	Order Code	Price Each 1+	10+	50+	100+	+
⅛" SXN	All Values	7.21	– –	– –	– –	– –
¼" SXG	All Values	11.14	10.14	8.91	7.25	– –
¼" double gang	All Values	23.75	19.66	15.94	11.66	– –
¼" single gang switched	All Values	25.75	21.33	17.32	12.63	– –

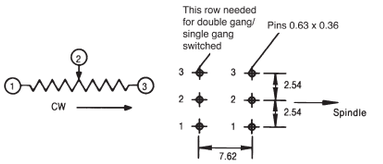
1Watt (Cermet Linear), 0.5 Watt (Double Gang Conductive Plastic Linear) – 50 Series PCB Mounting

BOURNS®
Reliable Electronic Solutions



Body H = 13.25, W = 12.5, D = 8.9 (219-125 = 16.5)

Bush 107-661, 107-662 = 8 x 6 dia: spindle = 25 (inc bush) x 3 dia
107-663, 107-664, 219-125 = ⅜" x ⅜" dia: spindle = ⅞" (inc bush) x ¼" dia



Drilling plan

- Linear cermet PCB mounting
- Choice of bush and shaft size
- Double gang version in conductive plastic

Power rating @ 70°C	1W (219-125 = 0.5W)	Mechanical rotation	295°±5°
Voltage rating	350V ac (or limited by power dissipation whichever <)	Linearity	5%
		Terminal resistance	2Ω
Resistance tolerance	±10%	Contact resistance variation	4% (219-125=2%)
Temperature coefficient	±150ppm/°C (219-125 =±1000ppm/°C)	Dielectric strength (sea level)	1000V ac
		Operating temperature	+1°C to +125°C
Electrical rotation	270°±5°		

Stocked in the following OHMIC Values:

8 x 6 Bush
1K = **935-7688** 10K = **935-7661**
51AAD-B28-A15L = 935-7661
51SAD-U25-A10L = 935-7688

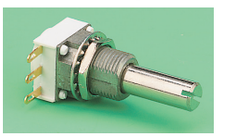
⅜ x ⅜" Bush
10K = **935-7696** 10K (double gang) = **935-7670**
51ABD-B28-B15/B15L = 935-7670
51SAD-U25-A15L = 935-7696

207182

Bush Style	Order Code	Price Each 1+	25+	50+	100+
8 x 6	All Values ●	16.74	15.25	12.95	9.83

P11 Series Single and Double Gang

VISHAY



Body H = 13, W = 12.5,
D = 11.1 (single), 16.18 (double gang)

Shaft (inc bush) = 25 x 6 dia. (cermet),
50 x 6 dia. (conductive plastic)
Bush = M10 x 9.5

- P11 linear or logarithmic cermet
- PA11 logarithmic conductive plastic
- Solder lug terminations

Power rating @ 70°C	1W (Linear) 0.5W (Logarithmic)	Electrical rotation	270°±5°
		Mechanical rotation	300°±5°
Resistance tolerance	±10%(Cermet) ±20%(Cond. Plastic)	End resistance	2R
		Contact resistance variation (linear)	2% or +3Ω whichever>
Temperature coefficient	±100ppm/°C (Cermet) ±500ppm/°C (Cond.Plastic)	Dielectric strength	1500Vrms
		Operating temperature	-55°C to +125°C

Stocked in the following OHMIC Values:

P11 Cermet - Single Gang Linear
100R = **114-1595** 1K = **114-1597** 10K = **114-1599** 100K = **114-1602** 1M = **114-1605**
500R = **114-1596** 5K = **114-1598** 50K = **114-1601** 500K = **114-1604**

P11 Cermet - Double Gang Linear
5K = **114-1606** 10K = **114-1607**

P11 Cermet - Single Gang Logarithmic
1K = **114-1608** 5K = **114-1609** 10K = **114-1610** 50K = **114-1611**

PA11 Conductive Plastic - Double Gang Logarithmic
10K = **114-1613**

207316

Style	Order Code	Price Each 1+	10+	50+	100+	+
P11 Cermet						
Single Gang Linear	All Values ●	11.04	10.33	9.86	6.99	– –
Double Gang Linear	All Values ●	16.38	15.37	14.68	9.81	– –
Single Gang Logarithmic	All Values ●	13.27	12.38	11.84	8.38	– –
PA11 Conductive Plastic						
Double Gang Logarithmic	Values 10K ●	44.16	41.39	39.47	26.18	– –

16 mm Metal Shaft

ALPS

- Audio potentiometer for use in TV, radio and general applications
- Three styles; linear with flatted shaft, logarithmic with slotted shaft, dual logarithmic centre dent and slotted shaft.

Dia = 16, Bush = M7 x 0.75, M9 x 0.75 (Dual)

Power rating @ 70°C	0.1W (Log) 0.1W (Linear)	Voltage rating Resistance tolerance	150V a.c. ±20%	Mftrs. List No RK16312150K = 119-1716 RK16311110K = 119-1721

207239

Logarithmic	Order Code	Price Each 1+	10+	25+	50+
50K Centre dent slotted shaft	119-1716●	10.52	8.88	7.56	5.64
Linear					
10K Flatted shaft	119-1721●	6.35	5.36	4.60	3.31

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

27 mm sq - Dual Logarithmic

ALPS

Bush=M8 x 0.75

- High quality audio potentiometers for volume control in amplifiers and associated audio equipment
- Available with d.c. motor for remote control applications.

Mftrs. List No: RK27111220K = 119-1722
RK27111250K = 119-1723

Power rating	0.05W
Voltage rating	30V a.c.
Resistance tolerance	±20%
Motor tolerance	4 to 6V d.c.
Motor current at end slip	150mA @ 4.5V d.c.

207238

Logarithmic	Order Code	Price Each 1+	10+	25+	50+
20K dual	119-1722●	51.43	43.19	37.17	28.38
50K dual with centre detent	119-1723●	51.43	43.19	37.17	28.38

1Watt – P16 Series Cermet

VISHAY

Integrated Potentiometer and Knob

- Compact linear cermet potentiometer, uniquely integrated into the knob
- Single turn potentiometer
- Hermetically sealed and fitted with a panel seal to **IP67**
- Supplied with nut and washer

L=23.0 (overall)
Dia=16.0 (knob)
Panel cut-out=10.1 dia with 8mm double flat

Power rating @ 40°C	1W	Limiting element voltage	750V RMS
Voltage rating	350V ac	Dielectric strength	2500V RMS
Resistance tolerance	±20%	Operating temperature	-55°C to +85°C (plastic knob)
Electrical rotation	270° ±10°		-55°C to +125°C (metal knob)
Mechanical rotation	300°± 5°		

Stocked in the following OHMIC Values:

P16 NP (plastic knob)			P16 N (metal knob)		
470R	=	114-1614	22K	=	114-1683
1K	=	114-1617	47K	=	114-1684
2K2	=	114-1618	470R	=	114-1676
4K7	=	114-1619	1K	=	114-1686
10K	=	114-1620	2K2	=	114-1687
22K	=	114-1621	4K7	=	114-1688
47K	=	114-1622	10K	=	114-1682
100K	=	114-1623	1M	=	114-1689
220K	=	114-1625			
470K	=	114-1626			
1M	=	114-1627			

Mftrs. List No. P16N or P16NP + Value

207385

Plastic Knob (P16NP)	Price Each 1+	10+	25+	100+
All Values ●	12.19	11.62	10.96	8.82
Metal Knob (P16N)	**1+**	**10+**	**25+**	**100+**
All Values ●	17.85	16.07	14.58	13.29

1 Watt – 6639 Series Conductive Plastic

BOURNS® Reliable Electronic Solutions

- High quality conductive plastic potentiometers
- Essentially infinite resolution and excellent rotational life

L=11.3 (body), 22.2 (spindle, inc bush)
Dia.=22.2 (body), 6.35 (spindle) Mounting bush= ⅜"x32 UNEF

Power rating @ 70°C	1W	Mechanical rotation	360° continuous
Voltage rating	300V ac (or limited by power dissipation whichever <)	Rotational life	10000000 cycles
		Output smoothness	0.1% max.
Resistance tolerance	±15%	Insulation resistance	500MΩ
Linearity	±2%	Operating temperature	-65°C to +125°C
Electrical rotation	340° ±3°		

Stocked in the following OHMIC Values:

1K = **935-7700** 5K = **935-7726** 10K = **935-7718**

Mftrs. List No. 66395-001+Value

207183

Order Code	Price Each 1+	10+	25+	50+	+
All Values ●	34.10	31.44	29.70	23.03	– –

1 Watt – 357-Blue Series Conductive Plastic

VISHAY Vishay Spectrol

- Single turn conductive plastic potentiometers
- Continuous 360° rotation or 340° with stops
- Glass filled thermoplastic housing

L = 8.77 (body), 22.22 (spindle inc bush)
Dia = 22.22 (body), 6.34 (spindle)
Mounting bush = 3/8" x 32 UNEF

Power rating @ 70°C	1W	Electrical rotation	340° ±3°
Linearity	±1%	Mechanical rotation	360° continuous
Output smoothness	0.1% max		340° with stops
Rotational life	5000000 cycles	Shaft material	Stainless steel
Resistance tolerance	±15%		

Stocked in the following OHMIC Values:

Continuous rotation

1K = **114-4763** 5K = **114-4768** 20K = **114-4767**
2K = **114-4766** 10K = **114-4764** 50K = **114-4769**

With Rotation stops

1K = **114-4770** 5K = **114-4774** 20K = **114-4773**
2K = **114-4772** 10K = **114-4771** 50K = **114-4775**

333661

Rotation	Order Code	Price Each 1+	5+	10+	25+	+
Continuous	All Values ●	27.90	22.04	17.94	15.58	– –
With stops	All Values ●	29.26	24.18	21.35	17.84	– –

1.5 Watt - Cermet (PRV6), 0.75 Watt

VISHAY

NEW

- Mechanical Life 50,000 cycles
- IP67 Fully Sealed & Panel Sealed
- Linear & Logerithmic

Electrical travel	270°	End resistance	1Ω
Mechanical travel	300°	Contact resistance variation	2% or 3Ω
Resistance tolerance	±10%	Dielectric strength (sea level)	1750V
Temperature coefficient	±100ppm/°C (PRV6)	Operating temperature	-55°C to +125°C

(Delivered with nut & crinkled washer)

Stocked in the following OHMIC Values:

Linear

1K = **879-5690** 5K = **879-5703** 10K = **879-5711** 50K = **879-5720** 100K = **879-5738**

Logarithmic

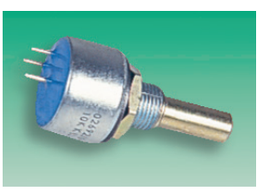
1K = **879-5746** 5K = **879-5754** 10K = **879-5762** 50K = **879-5770**

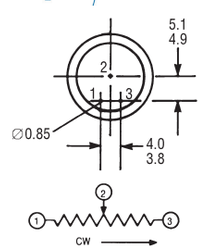
386031

Style	Order Code	Price Each 1+	5+	10+	25+	+
Linear	All Values ●	13.87	12.66	11.88	11.33	– –
Logarithmic	All Values ●	13.87	12.66	11.88	11.33	– –

2 Watt – MCU Series Cermet

tyco/Electronics CTEC





L = 12.7 (body), 25 (spindle, inc bush)
Dia = 19 (body), 6.35 (spindle)
Mounting bush = ⅜" x 32 UNEF

Power rating @ 70°C	2W	Terminal resistance	<3Ω
Voltage rating	315V dc	Insulation resistance	>1000MΩ
Resistance tolerance	±10%	Operating temperature	-55°C to +125°C
Mechanical rotation	270°		

Stocked in the following OHMIC Values:

10R	=	117-4096	220R	=	117-4100	4K7 = 117-4105	100K = 117-4109
22R	=	117-4097	470R	=	117-4102	10K = 117-4106	220K = 117-4110
47R	=	117-4098	1K	=	117-4103	22K = 117-4107	470K = 117-4111
100R	=	117-4099	2K2	=	117-4104	47K = 117-4108	1M = 117-4112

Mftrs List No. MCU + Value

207387

Order Code	Price Each 1+	25+	50+	100+	+
All Values ●	15.20	13.70	12.92	9.70	– –

3 Watt - PE30 Series Cermet

VISHAY

- High power rating
- Low temperature coefficient

L = 11.5 (body), Spindle L = 25 slotted (inc bush)
Dia. = 19.7 (body), 6.0 (spindle)

RoHS ● Compliant ◄ Non-compliant ‡ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

Power rating @ 70°C	3W	Mechanical rotation	300° ±5°
Resistance tolerance	±10%	Terminal resistance variation	3% or 3Ω whichever>
Temperature coefficient	±100ppm/°C	Dielectric strength	2500V
Electrical rotation	270°±10°	Operating temperature	-55°C to +125°C

Stock in the following OHMIC Values:

PE30 AM - Spindle length = 25mm (from mounting surface) slotted

100R = **114-1579**	2K2 = **114-1585**	22K = **114-1588**	220K = **114-1591**
220R = **114-1580**	4K7 = **114-1586**	47K = **114-1589**	470K = **114-1592**
470R = **114-1581**	10K = **114-1587**	100K = **114-1590**	1M = **114-1593**
1K = **114-1584**			

PE30 AL - Spindle length = 50mm (from mounting surface) plain round

100R = **114-1628**	2K2 = **114-1632**	22K = **114-1635**	220K = **114-1639**
470R = **114-1630**	4K7 = **114-1633**	47K = **114-1637**	470K = **114-1640**
1K = **114-1631**	10K = **114-1634**	100K = **114-1638**	1M = **114-1641**

Mftrs. List No.PE30AM + Value, PE30AL + Value

207323

Order Code	Price Each 1+	10+	25+	50+	+
All Values ●	32.75	30.82	29.62	24.48	– –

1 Watt – CLR1106 Series Wirewound

TT electronics colvern

L = 17.5 (body)
Spindle L (inc bush) = 15.9 slotted
(CLR1106/9S), 19.1 slotted (CLR1106/11S)
Dia = 23.1 (body), 6.35 (spindle)
Mounting bush = ⅜" x 32 UNEF

Power rating @ 20°C	1W	Mechanical rotation	290° ±10°
Voltage rating	250V dc	Terminal resistance	0.2Ωor 0.01% whichever>
Resistance tolerance	±10%	Isolation voltage	1000Vdc
Electrical rotation	265°±15°	Operating temperature	-25°C to +70°C

Stocked in the following OHMIC Values:

CLR1106 9S

50R = **351-003**	500R = **351-039**	2K5 = **351-064**	25K = **351-090**
100R = **351-015**	1K = **351-040**	5K = **351-076**	50K = **351-106**
250R = **351-027**	2K = **351-052**	10K = **351-088**	

CLR1106 11S

100R = **351-118**	1K = **351-143**	5K = **351-179**	25K = **351-192**
250R = **351-120**	2K = **351-155**	10K = **351-180**	50K = **351-209**
500R = **351-131**	2K5 = **351-167**		

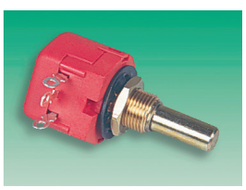
Mftrs List No. CLR1106/9S + Value CLR1106/11S + Value

207391

Style	Order Code	Price Each 1+	25+	50+	100+	+
CLR1106 9S	**All Values**	32.89	30.43	28.13	18.84	– –
CLR1106 11S	**All Values**	32.89	30.43	28.13	18.84	– –

1 Watt – ABW1 Series Wirewound

TT electronics ab



L = 17.45 (body), Spindle = 25.4 (inc bush)
Dia = 23.0 (body), 6.30 (spindle)
Mounting bush = ⅜" x 32 TPI

Power rating @ 40°C	1W	Mechanical rotation	285°±5°
Voltage rating	300V dc	Terminal resistance	0.2Ror 0.01% whichever≥Ω
Resistance tolerance	±10%	Insulation resistance	1000MR
Spindle length	25.4mm from face	Isolation voltage	1000Vac
Electrical rotation	265° ±5°	Operating temperature	-40°C to +90°C

Stocked in the following OHMIC Values:

50R = **121-9016**	250R = **121-9019**	1K = **121-9021**	5K = **121-9023**	25K = **121-9025**
100R = **121-9018**	500R = **121-9020**	2K5 = **121-9022**	10K = **121-9024**	50K = **121-9026**

Mftrs List No. ABW1 + Value

207422

Order Code	Price Each 1+	25+	50+	100+
Values 50R to 10K ●	13.45	12.13	11.47	9.17
Values 25K to 50K ●	13.45	12.13	11.47	9.17

2 Watt–140 Series Wirewound

VISHAY Vishay Spectrol

- Compact wirewound potentiometer
- Robust design gold plated terminals
- Stainless Steel shaft with anodised aluminium housing

L = 7.75 (body), 17.78 (spindle inc bush)
Dia. = 12.7 (body). 3.17 (spindle)
Mounting Bush = ¼" x 32 UNEF-2A

Power rating	2W @ 40°C ambient derated linearly to zero @125°C		
Temperature range	-55°C to +125°C	Dielectric strength	1000 Volts RMS @ 60Hz
Mechanical rotation	330°+5°	Rotational life	500000 shaft revolutions

224000

Value	Order Code	Price Each 1+	5+	10+	20+
1K	**121-3254**	101.08	96.45	91.89	84.26
5K	**121-3255**	91.66	87.48	83.32	76.39
10K	**121-3256**	91.66	87.48	83.32	76.39
20K	**121-3259**	91.66	87.48	83.32	76.39

2.75 Watt – 132 Series Wirewound

VISHAY Vishay Spectrol

- Single turn wirewound potentiometer
- Moulded glass filled thermoplastic case
- Stainless Steel non magnetic shaft

Body Dia. = 33.3 Panel Cut out = 10.3
Bush Length = 9.5 Shaft Length = 12.7 Dia. = 6.34
Antirotation Hole Offset = 14.2

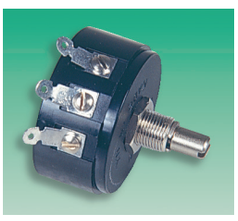
Power rating	2.75W @ 40°C ambient derated linearly to zero @125°C		
Temperature range	-55°C to +125°C	Dielectric strength	1000 Volts RMS @ 60Hz
Mechanical rotation	336° +2°	Rotational life	500000 shaft revolutions

224001

Value	Order Code	Price Each 1+	5+	10+	20+
1K	**121-3251**	57.58	55.72	55.72	42.78
5K	**121-3252**	57.58	55.72	55.72	42.78
10K	**121-3253**	63.57	61.52	61.52	46.75

3 Watt – RW Series Wirewound

tyco Electronics CTEC



L=19.5 (body), Dia = 40 (body),
6.35 (spindle)
Mounting bush = ⅜" x 32 UNEF

Power rating @ 20°C	3W
Voltage rating	500V dc
Resistance tolerance	±10%
Electrical rotation	275°±5°
Mechanical rotation	295° ±10°
Terminal resistance	100Ω
Isolation voltage	630V ac
Operating temperature	-40°C to +70°C

Stocked in the following OHMIC Values:

Spindle – 6.3 x 19 mm (inc bush) slotted

50R = **117-4194**	500R = **117-4196**	2K = **117-4199**	5K = **117-4201**	25K = **117-4205**
100R = **117-4195**	1K = **117-4197**	2K5 = **117-4200**	10K = **117-4203**	50K = **117-4207**

Spindle – 6.3 x 38 mm (inc bush) slotted

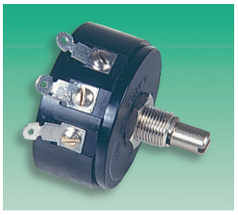
2K = **117-4208**	5K = **117-4209**	10K = **117-4210**

312085

Order Code	Price Each 1+	25+	50+	100+	+
All Values ●	44.82	41.40	38.86	29.78	– –

3 Watt – CLR4001 Series Wirewound

TT electronics colvern



L=19.2 (body),
Spindle L (inc bush) = 19.1 slotted
(CLR4001/11S), 38.1 (CLR4001/22)
Dia = 40 (body), 6.35 (spindle)
Mounting bush = ⅜" x 32 UNEF

Power rating @ 20°C	3W	Mechanical rotation	295°± 5°
Voltage rating	500V	Terminal resistance variation	0.2Ω or 0.01% whichever >
Resistance tolerance	±10%	Isolation voltage	750V dc
Electrical rotation	275°± 5°	Operating temperature	-40°C to +70°C

Stocked in the following OHMIC Values:

CLR4001/11S

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Due to the volatile nature of certain products,
prices are subject to change without notice.

50R = **121-0913** 500R = **121-0917** 2K = **121-0921** 5K = **121-0923** 25K = **121-0925**
100R = **121-0914** 1K = **121-0918** 2K5 = **121-0922** 10K = **121-0924** 50K = **121-0926**
250R = **121-0916**

CLR4001/22

1K = **121-0927** 2K5 = **121-0929** 10K = **121-0931** 50K = **121-0933** 100K = **121-0934**
2K = **121-0928** 5K = **121-0930**

Mftrs. List No. CLR4001/11S + Value CLR4001/22 + Value

207392

Style	Order Code	Price Each 1+	25+	50+	100+	+
CLR4001/11S	**Values 50R to 10K** ●	45.77	42.77	41.92	33.62	– –
CLR4001/11S	**Values 25K to 50K** ●	45.77	42.77	41.92	33.62	– –
CLR4001/22	**Values 1K to 10K** ●	45.77	42.77	41.92	33.62	– –
CLR4001/22	**Values 50K to 100K** ●	45.77	42.77	41.92	33.62	– –

Rheostats

Rheostats – Power Wirewound — OHMITE

Shaft length = 8.7 Bush length=9.5 Panel cut out=9.5
Dia RHS 39.6 Depth behind panel RHS 34.9 Anti rotation hole offset 12.7
RJS 58.6 RJS 34.9

- High power rheostats, wirewound element on ceramic core
- Robust design, metal graphite contact bush
- Applications include test equipment and laboratory use

Wattage rating in free air derate up to 50% depending on ventilation

224002

RHS 25 Watt	Order Code	Price Each 1+	10+	25+	+
50R	**105-0163**	52.71	51.69	50.36	– –
1K	**105-0254**	54.97	53.94	– –	– –
10K	**105-0333**	60.08	– –	– –	– –
RJS 50 Watt					
6R	**105-0412**	69.47	– –	– –	– –
16R	**105-0448**	69.84	– –	– –	– –
1K	**105-0552**	65.89	– –	– –	– –
2K5	**105-0576**	67.43	– –	– –	– –
Accessories					
Knob	**105-0310**▲	14.88	– –	– –	– –
Dial Plate	**105-1325**▲	3.07	– –	– –	– –

12 to 500 Watt - RT Series — VISHAY

- Ceramic core vitreous enamel coated wirewound rheostats
- High power rating up to 500 Watts
- Compact size per rating
- Wide temperature range
- Dial and knob supplied separately

12 Watt	Body L = 18,	Dia. = 22,	Shaft L = 22, (inc bush),	Dia. = 3.0
25 Watt	Body L = 28,	Dia. = 38,	Shaft L = 22, (inc bush),	Dia. = 6.0
55 Watt	Body L = 39,	Dia. = 60,	Shaft L = 25, (inc bush),	Dia. = 6.0
100 Watt	Body L = 56,	Dia. = 85,	Shaft L = 25, (inc bush),	Dia. = 6.0
250 Watt	Body L = 75,	Dia. = 143,	Shaft L = 50, (inc bush),	Dia. = 10
500 Watt	Body L = 108,	Dia. = 143,	Shaft L = 50, (inc bush),	Dia. = 10

Power rating measured at	25°C	Dielectric strength	
Resistance tolerance	±10%	12, 25 & 55W	1000Vrms
Mechanical rotation	300° ±5°	100W	1500V rms
Operating temperature	-55°C to +320°C	250W	2000V rms
		500W	3500V rms

207325

Value	Order Code	Price Each 1+	5+	10+	25+	+
12 Watt						
100R	**114-1308**●	95.47	86.78	79.54	71.19	– –
150R	**114-1309**●	74.21	71.70	– –	– –	– –
220R	**114-1310**●	95.47	86.78	79.54	70.65	– –
470R	**114-1311**●	95.47	86.78	79.54	69.22	– –
12 Watt						
1K	**114-1312**●	95.47	86.78	79.54	70.73	– –
20JF Knob	**121-3369**●	34.47	31.74	31.68	25.20	– –
CG45 Dial	**310-1459**	19.29	17.40	17.37	13.80	– –
25 Watt						
2R2	**114-1313**●	72.80	65.65	65.52	63.13	– –
4R7	**114-1315**●	72.80	65.65	65.52	64.64	– –
10R	**114-1316**●	73.97	66.78	66.59	56.31	– –
15R	**114-1317**●	73.97	66.78	66.59	57.10	– –
22R	**114-1318**●	73.97	66.78	66.59	55.35	– –
47R	**114-1319**●	73.97	66.78	66.59	55.79	– –
100R	**114-1320**●	66.66	60.13	60.01	57.96	– –
150R	**114-1321**●	62.17	59.15	– –	– –	– –
220R	**114-1322**●	66.66	60.13	60.01	57.93	– –
470R	**114-1323**●	66.66	60.13	60.01	57.97	– –
1K	**114-1324**●	66.66	66.02	– –	– –	– –
1K5	**114-1325**●	66.66	60.13	60.01	58.35	– –
2K2	**114-1327**●	66.66	60.22	– –	– –	– –
4K7	**114-1328**●	66.66	60.13	60.01	59.52	– –
29JF Knob	**121-3363**●	27.90	– –	– –	– –	– –
CG57 Dial	**121-3366**●	14.67	13.20	12.93	12.69	– –
55 Watt						
10R	**114-1329**●	117.34	107.97	– –	– –	– –
22R	**114-1330**●	102.97	91.93	– –	– –	– –
100R	**114-1331**●	102.97	94.72	– –	– –	– –
330R	**114-1332**●	93.88	– –	– –	– –	– –
1K	**114-1333**●	102.97	95.37	– –	– –	– –
2K2	**114-1334**●	102.97	95.37	– –	– –	– –
4K7	**114-1335**●	116.49	105.88	– –	– –	– –
10K	**114-1336**●	116.49	105.74	– –	– –	– –
41JF Knob	**121-3364**●	29.13	26.34	26.25	24.55	– –
CG78 Dial	**121-3367**●	17.16	15.45	15.15	14.66	– –
100 Watt						
22R	**114-1337**●	204.25	187.81	– –	– –	– –
100R	**114-1339**●	176.24	162.19	– –	– –	– –
1K	**114-1341**●	176.24	156.58	– –	– –	– –
41JF Knob	**121-3364**●	29.13	26.34	26.25	24.55	– –
CG78 Dial	**121-3367**●	17.16	15.45	15.15	14.66	– –

High Power Rheostat — tyco Electronics CGS

H = 153. W = 94, L = 450

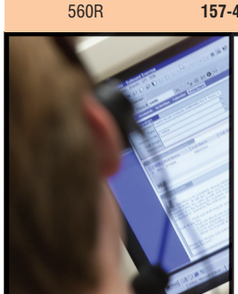
- High power variable rheostat for laboratory use
- Pressed steel cover with ceramic adjustment handle
- 4mm socket connections to wire wound element

Resistance (Ω)	Max. Cont Power (W)	Max Current (A)	Internal Element Size	Mftrs List No.	Order Code
5.6	811	10	400 x 60	BFA 10 5R6	157-454
22	760	5	400 x 60	BFA 5 22R	157-466
33	675	4	400 x 60	BFA 4 33R	157-478
120	580	2	400 x 60	BFA 2 120R	157-480
560	560	1	400 x 40	BFA 1 560R	157-491

Wire material CuNi44 Resistance tolerance ±10%

207275

Resistance	Order Code	Price Each 1+	5+
5R6	**157-454**●	369.60	332.48
22R	**157-466**●	369.60	332.48
33R	**157-478**●	332.48	– –
120R	**157-480**●	332.48	– –
560R	**157-491**●	361.20	332.48



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www.farnell-newarkinone.com.sg

● Compliant ◀ Non-compliant ‡ Limited stock - RoHS replacement available

RoHS

C = CYAN M = Magenta Y = Yellow B = Black/SING

Multi Turn Potentiometers

1Watt, 3 Turn – 533-Blue Series

VISHAY Vishay Spectrol

- Three turn precision wirewound potentiometers
- Glass filled thermoplastic housing
- Gold plated terminals

L = 19.1, (body), 20.6 (spindle, inc bush)
Dia = 22.2, (body) 6.35 (spindle)
Mounting bush = ⅜"x32 UNEF

Power rating @ 70°C	1W
Resistance tolerance	±5%
Effective rotation	1080°(+10%)
Mechanical rotation	1080°(+10%)
Temperature coefficient	±20ppm/°C
Linearity	±0.25%
Terminal resistance	1Ω
Dielectric strength	1000V ac
Operating temperature	-55°C to +125°C

Stocked in the following OHMIC Values:

Value	Resolution	Order Code
1K	0.06%	**114-4776**
5K	0.04%	**114-4779**
10K	0.03%	**114-4778**

333662

Order Code	Price Each 1+	5+	10+	25+	+
All Values ●	30.08	29.03	27.90	25.36	– –

1.5 Watt, 5 Turn – 535-Blue Series

VISHAY Vishay Spectrol

- Five turn precision wirewound potentiometers
- Glass filled thermoplastic housing
- Gold plated terminals

L = 19.1, (body), 20.6 (spindle, inc bush)
Dia = 22.2, (body) 6.35 (spindle)
Mounting bush = ⅜" x 32 UNEF

Power rating @ 70°C	1.5W
Resistance tolerance	±5%
Effective rotation	1800°(±10°)
Mechanical rotation	1800°(±10°)
Temperature coefficient	±20ppm/°C
Linearity	±0.25%
Terminal resistance	1Ω
Dielectric strength	1000V ac
Operating temperature	-55°C to +125°C

Stocked in the following OHMIC Values:

Value	Resolution	Order Code	Value	Resolution	Order Code
1K	0.04%	**114-4780**	10K	0.03%	**114-4781**
5K	0.03%	**114-4782**	50K	0.02%	**114-4783**

333663

Order Code	Price Each 1+	5+	10+	25+	+
All Values ●	30.89	30.53	29.39	25.94	– –

2 Watt, 10 Turn – 3590S Series

BOURNS Reliable Electronic Solutions

L = 18.6 (body), 20.6 (spindle, inc bush)
Dia = 22.2 (body), 6.35 (spindle)
Mounting bush = ⅜" x 32 UNEF

Power rating @ 40°C	2W	Electrical rotation	(3600° + 10° -10°)
Voltage rating	450V ac (or limited by power dissipation whichever <)	Mechanical rotation	(3600° +10° -0°)
		Linearity	±0.25%
		Terminal resistance	0.1% or 1Ω whichever>
Resistance tolerance	±5%	Dielectric strength (sea level)	1500V ac
Temperature coefficient	50ppm/°C max	Operating temperature	-55°C to +125 °C

Stocked in the following OHMIC Values:

Rotational life (no load) 1 million revolutions

Ohmic Value	Resolution	Order Code	Ohmic Value	Resolution	Order Code	Ohmic Value	Resolution	Order Code
500R	0.033%	**935-5596**	20K	0.019%	**935-5588**	50K	0.013%	**935-5618**
5K	0.025%	**935-5600**						

Mftrs. List No. 3590S + Value

207416

Order Code	Price Each 1+	10+	25+	50+	+	+
Values 200R to 20K ●	30.43	28.79	26.43	19.40	– –	– –
Value 50K ●	36.76	34.84	32.00	23.44	– –	– –

3 Watt, 10 Turn – 3540S Series

BOURNS Reliable Electronic Solutions

L = 19.0 (body), 20.6 (spindle, inc bush)
Dia = 22.2 (body), 6.35 (spindle)
Mounting bush = ⅜" x 32 UNEF

Power rating @ 40°C	3W (2W @ 70°C)	Electrical rotation	(3600°+10°–0°)
Voltage rating	447V ac (or limited by power dissipation whichever <)	Mechanical rotation	(3600°+10°–0°)
		Linearity	±0.25%
		Terminal resistance	1Ror 1Ω whichever >
Resistance tolerance	±5%	Dielectric strength (sea level)	1000V ac
Temperature coefficient	±50ppm/°Cmax	Operating temperature	-55°C to +125°C

Rotational life (no load) 1 million revolutions

Stocked in the following OHMIC Values:

Ohmic Value	Resolution	Order Code	Ohmic Value	Resolution	Order Code	Ohmic Value	Resolution	Order Code
100R	0.055%	**935-5529**	500R	0.031%	**935-5561**	5K	0.021%	**935-5570**
200R	0.042%	**935-5553**	1K	0.027%	**935-5537**	100K	0.008%	**935-5545**

Mftrs. List No. 3540S + Value

207401

Order Code	Price Each 1+	10+	25+	50+	+	+
Values 100R to 20K ●	41.11	38.52	35.37	25.92	– –	– –
Value 100K ●	51.37	48.10	44.19	32.38	– –	– –

2 Watt, 10 Turn – 534-Blue Series

VISHAY Vishay Spectrol

Metric

Imperial

- 10 turn precision wirewound potentiometers
- Glass filled thermoplastic housing
- Gold plated terminals

L = 19.1, (body), 20.6 (spindle, inc bush)
Dia = 22.2, (body) 6.0 or 6.35 (spindle)
Mounting bush = ⅜" x 32 UNEF imperial
M9 x 0.75 metric

Power rating @ 70°C	2W	Linearity	±0.2%
Resistance tolerance	±5%	Terminal resistance	1Ω
Effective rotation	3600°(+10%)	Dielectric strength	1000V ac
Mechanical rotation	3600°(+10%)	Operating temperature	-55°C to + 125°C
Temperature coefficient	±20ppm/°C		

Stocked in the following OHMIC Values:

Imperial – ¼" dia. shaft

Ohmic value	Resolution	Order Code	Ohmic value	Resolution	Order Code
100R	0.06%	**114-4784**	5K	0.02%	**114-4793**
200R	0.04%	**114-4787**	10K	0.02%	**114-4786**
500R	0.03%	**114-4792**	20K	0.02%	**114-4791**
1K	0.03%	**114-4785**	50K	0.01%	**114-4794**
2K	0.02%	**114-4788**	100K	0.01%	**114-4795**

Metric – 6mm dia. shaft

Ohmic value	Resolution	Order Code	Ohmic value	Resolution	Order Code
100R	0.06%	**114-4796**	5K	0.02%	**114-4803**
200R	0.04%	**114-4799**	10K	0.02%	**114-4798**
500R	0.03%	**114-4802**	20K	0.02%	**114-4801**
1K	0.03%	**114-4797**	50K	0.01%	**114-4804**
2K	0.02%	**114-4800**	100K	0.01%	**114-4805**

333665.343091

Order Code	Price Each 1+	5+	10+	25+	+
Imperial – ¼" dia. shaft					
Values 100R to 20K ●	22.95	22.65	20.83	19.20	– –
Value 50K ●	24.54	23.01	21.55	20.08	– –
Value 100K ●	32.91	31.61	30.40	26.37	– –
Metric – 6mm dia. shaft					
Values 100R to 20K ●	24.61	23.99	22.00	20.44	– –
Value 50K ●	29.46	29.03	27.08	24.48	– –
Value 100K ●	35.22	34.21	29.78	27.83	– –

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products,
prices are subject to change without notice.

3 Watt, 10 Turn – 534 Series, Helical

VISHAY

Power rating @ 40°C	3W (2W @ 70°C)
Resistance tolerance	±5%
Effective rotation	3600°(+10°–0°)
Mechanical rotation	3600°(+10°–0°
Temperature coefficient	±20ppm/°C
Linearity	±0.25%
Terminal resistance	1Ω
Dielectric strength	1000V ac
Operating temperature	-55°C to + 125°C

L = 19.1, (body), 20.6 (spindle, inc bush)
Dia = 22.2, (body) 6.0 or 6.35 (spindle)
Mounting bush = ⅜" x 32 UNEF

Stocked in the following OHMIC Values:

¼" dia. shaft

Ohmic value	Resolution	Order Code	Ohmic value	Resolution	Order Code
100R	0.06%	**351-738**	5K	0.016%	**351-787**
200R	0.037%	**351-740**	10K	0.017%	**351-799**
500R	0.031%	**351-751**	20K	0.015%	**351-805**
1K	0.025%	**351-763**	50K	0.009%	**351-817**
2K	0.021%	**351-775**	100K	0.007%	**351-829**

Mftrs. List No. 534 + Value

6mm dia. shaft

Ohmic value	Resolution	Order Code	Ohmic value	Resolution	Order Code
100R	0.06%	**390-3333**	5K	0.016%	**390-3382**
200R	0.037%	**390-3345**	10K	0.017%	**390-3394**
500R	0.031%	**390-3357**	20K	0.015%	**390-3400**
1K	0.025%	**390-3369**	50K	0.009%	**390-3412**
2K	0.021%	**390-3370**	100K	0.007%	**390-3424**

Mftrs. List No. 534-8872 + Value

207377

Order Code	Price Each 1+	5+	10+	25+	+
¼" dia. shaft					
Values 100R to 20K	17.93	17.04	16.18	15.37	– –
Value 50K	18.43	17.50	16.63	16.29	– –
Value 100K	19.64	18.66	18.60	– –	– –
6mm dia. shaft					
Values 100R to 20K	23.81	22.74	21.29	17.51	– –
Value 50K	28.50	27.53	26.21	20.92	– –
Value 100K	34.07	32.44	28.82	24.00	– –

8 Watt, 10 Turn – 860 Series

VISHAY
Vishay Spectrol

- 10 turn wirewound potentiometer
- Moulded glass filled thermoplastic case
- Stainless steel non-magnetic shaft

L=50.8 (body), 20.62 (spindle inc bush)
Dia.=46.02 (body). 6.34 (spindle)
Mounting Bush= ⅜" x 32 UNEF-2A

Power rating	8W @ 40°C ambient derated linearly to zero @ 125°C	Dielectric strength	1000 Volts RMS @ 60 Hz
		Rotational life	500000 shaft revolutions
Temperature range	-55°C to +125°C	Mechanical rotation	3600°+ 4°C -0°C
Tolerance	±3%		

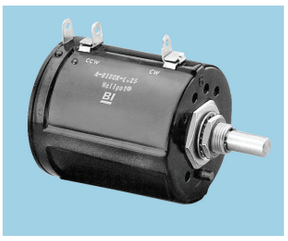
224003

Value	Order Code	Price Each 1+	5+	10+	20+
100R	**157-685▲**	117.53	113.18	109.15	102.77
500R	**157-697▲**	117.53	113.18	109.15	101.56
1K	**157-703▲**	142.25	136.99	132.11	121.28
2K	**157-715▲**	117.53	113.18	109.15	101.09
5K	**157-727▲**	117.53	113.18	109.15	101.79
10K	**157-739▲**	142.25	136.99	132.11	121.28
50K	**157-740▲**	142.25	136.99	132.11	121.28
100K	**157-752▲**	295.79	– –	– –	– –

AR Series

10 Turn Wirewound – Precision Potentiometer

BI Technologies Electronics



NEW

- Precision wirewound Potentiometer
- 3 gangs (max)
- Resistance range from 10 ohms to 500K Ohms
- Wide range of standard values
- Rotational Load: Life 2 mil. shaft rev. + 900 hrs. at rated wattage at 40°C

Power Rating	5W
Resistance Tolerance (min)	±1%
Dielectric Strength	1000V rms
Temperature range	-65°C to 85°C (Static) -40°C to 85°C (Dynamic)

Resistance (Ω)	Mftrs. List No.	Order Code	Resistance (Ω)	Mftrs. List No.	Order Code
500R	AR500L.25LF	**943-1810**	50kR	AR50KL.25LF	**943-1888**
1kR	AR1KL.25LF	**943-1837**	100kR	AR100KL.25LF	**943-1896**
2kR	AR2KL.25LF	**943-1845**	200kR	AR200KL.25LF	**943-1900**
5kR	AR5KL.25LF	**943-1853**	300kR	AR300KL.25LF	**943-1918**
10kR	AR10KL.25LF	**943-1861**	500kR	AR500KL.25LF	**943-1926**
20kR	AR20KL.25LF	**943-1870**			

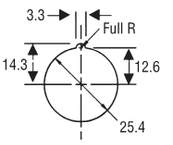
411614

Order Code	Price Each 1+	5+	10+	25+	+
All Values ●	124.86	112.56	99.90	93.61	– –

1.5 Watt, 10 Turn – 3610S Series Digital Knob Potentiometer

BOURNS® Reliable Electronic Solutions

Knob dia = 19.5, Bezel dia = 31.5
Depth behind panel = 16.3



Panel cut-out

- Integral digital display knob and potentiometer
- Snap-in panel mounting.

Power rating @ 25°C	1.5W
Voltage rating	385V ac (or limited by power dissipation whichever <)
Resistance tolerance	±5%
Temperature coefficient	±50ppm/°C
Display accuracy (voltage ratio)	±5%
Terminal resistance	1Ω or 0.1% whichever >
Dielectric strength (sea level)	1000V ac
Electrical rotation	3600°nominal
Mechanical rotation	3600°(+20°–0°)
Operating temperature	-25°C to +85°C

Stocked in the following OHMIC Values:
1K = **351-830** 5K = **351-842** 10K = **351-854**

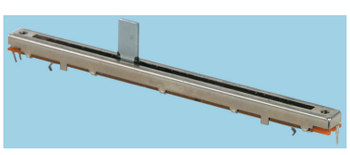
207403

Order Code	Price Each 1+	10+	25+
All Values	153.40	138.35	121.65

Slider Potentiometers

Thin & Standard Slide Potentiometers

Panasonic



NEW

- Slide potentiometers available in three lengths
- Low profile PCB mounting for volume, tone and balance control in audio equipment and graphic equalizers
- Light operating force and excellent operation
- Thin & Standard type faders available for audio mixers
- Low noise, high operating life, high operating attenuation

Series	Operating life	Operating force	Resistance tolerance
EVA(B)	50000 (cycles min)	0.1N to 1.0N	±20%
EWA	30000 (cycles min)	0.1N to 1.5N	±20%
TAPER A	**TAPER B**	**TAPER D**	**TAPER Y**
Logarithmic taper	Linear taper	Non-linear curve	Non-linear curve

Knobs available for sliders including other styles. Short styles: 766-732; Long styles: 892-129

● Compliant
◄ Non-compliant
++ Limited stock - RoHS replacement available

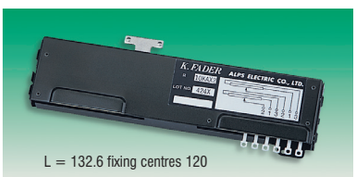
RoHS

386789/405630

Travel (mm)	Value	Taper	Order Code	Price Each 1+	10+	25+	50+
Single (EVA Series)							
100	10kR	Y	**879-5924●**	20.60	19.27	17.90	14.55
100	10kR	A	**879-5932●**	20.60	19.27	17.90	14.55
100	10kR	D	**879-5940●**	20.60	19.27	17.90	14.55
100	10kR	B	**879-5959●**	20.60	19.27	17.90	14.55
60	10kR	Y	**879-5991●**	18.98	17.74	16.47	12.21
60	10kR	A	**879-6009●**	18.98	17.74	16.47	12.21
60	10kR	D	**879-6017●**	18.98	17.74	16.47	12.21
60	10kR	B	**879-6025●**	18.98	17.74	16.47	12.21
100	10kR	Y	**879-6076●**	18.33	17.25	16.21	12.69
100	10kR	A	**879-6084●**	18.33	17.25	16.21	12.69
100	10kR	D	**879-6092●**	18.33	17.25	16.21	12.69
100	10kR	B	**879-6106●**	18.33	17.25	16.21	12.69
45	10kR	Y	**879-6114●**	14.61	13.77	12.92	10.12
45	10kR	A	**879-6122●**	14.61	13.77	12.92	10.12
45	10kR	D	**879-6130●**	14.61	13.77	12.92	10.12
45	10kR	B	**879-6149●**	14.61	13.77	12.92	10.12
Dual (EVB Series)							
100	10kR	Y	**879-5967●**	21.29	20.02	18.75	15.20
100	10kR	A	**879-5975●**	21.29	20.02	18.75	15.20
100	10kR	D	**879-5983●**	21.29	20.02	18.75	15.20
60	10kR	Y	**879-6033●**	19.27	18.00	16.73	12.40
60	10kR	A	**879-6041●**	19.27	18.00	16.73	12.40
60	10kR	D	**879-6068●**	19.27	18.00	16.73	12.40
Single (EWA Series)							
60	10kR	A	**879-6157●**	9.67	7.78	6.51	5.05
60	10kR	D	**879-6165●**	9.67	7.78	6.51	5.05
60	10kR	B	**879-6173●**	9.67	7.78	6.51	5.05
60	10kR	A	**879-6181●**	9.67	7.78	6.51	5.05
60	10kR	D	**879-6190●**	9.67	7.78	6.51	5.05
45	10kR	A	**879-6203●**	11.13	9.28	8.79	7.00
45	10kR	D	**879-6211●**	11.13	9.28	8.79	7.00
45	10kR	B	**879-6220●**	11.13	9.28	8.79	7.00
45	10kR	A	**879-6238●**	11.13	9.28	8.79	7.00
45	10kR	D	**879-6246●**	11.13	9.28	8.79	7.00

K Faders Master Controls

ALPS



L = 132.6 fixing centres 120

- Fader control for studio mixers, high precision characteristics
- Lever supported by two columns to minimise lever wobble
- Applications include volume control in high grade audio equipment and faders in studio mixers
- Fixing by M3 screws.

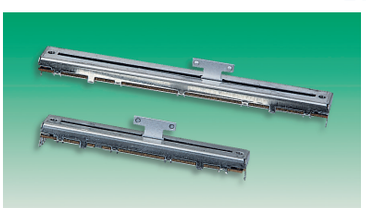
Rated power	0.25W	Resistance value	10K
Rated voltage	350V ac	Resistance tolerance	±20%

207232

Value	Order Code	Price Each 1+	10+	25+	50+
Single 10K	**119-1704●**	28.08	22.96	19.06	17.20

N Faders Master Controls

ALPS



- Slider potentiometer, hard wire terminations
- Choice of lever travel single or dual
- Applications include fader for studio mixers.

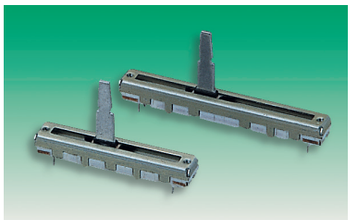
Resistance Ω	Lever Travel	Fixing Centres	Width	Mftrs. List No.	Order Code
Single					
10K	60	80	16	RS60N11	**119-1712**
10K	100	120	16	RSAON11	**119-1711**

207233

Logarithmic	Order Code	Price Each 1+	10+	25+	50+
Single					
10K 60mm Travel	**119-1712●**	14.28	11.66	9.67	8.44
10K 100mm Travel	**119-1711●**	15.73	12.85	10.65	9.58

Standard Slide Potentiometers

ALPS



- Slide potentiometers available in three lengths
- Low profile PCB mounting for volume, tone and balance control in audio equipment and graphic equalizers.

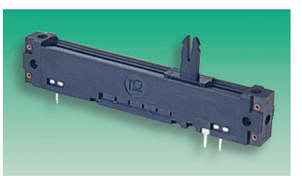
Travel (mm)	Mounting hole Pitch	Width	Rated Power (W)	Rated Voltage (a.c.)
30	41	8	0.1	150
45	51	8	0.125	150
60	71	8	0.1	150

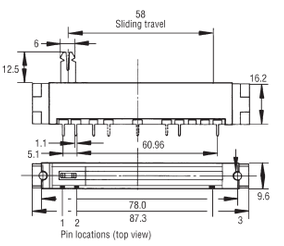
Resistance tolerance ±20%

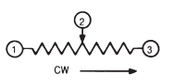
207230

Travel	Value	Order Code	Price Each 1+	10+	25+	50+
Logarithmic						
30	10K	**119-1726●**	4.28	3.50	2.96	2.74
45	10K	**119-1727●**	5.01	4.10	3.46	3.21
60	10K	**119-1728●**	7.05	5.76	4.88	4.59
Linear						
30	50K	**119-1729●**	4.29	3.50	2.96	2.77
45	50K	**119-1730●**	5.01	4.10	3.46	3.21
60	50K	**119-1732●**	7.05	5.76	4.88	4.54

0.2 Watt (Logarithmic), 0.4 Watt (Linear) – Carbon







- Low cost high quality carbon slider potentiometers in both logarithmic and linear values
- PCB or panel mounting
- M3 screw fixing
- For slider knobs see Order Codes 150-484 and 150-485

Power rating @ 40°C	0.2W (logarithmic) 0.4W (linear)	Resistance tolerance	±20%
		Insulation voltage	500V ac
Voltage rating	500V dc	Weight	12g

Stocked in the following OHMIC Values:

Logarithmic

100K = **150-469**

Linear

4K7 = **150-476**

207171

Style	Order Code	Price Each 1+	25+	50+	100+	+
Logarithmic	**All Values**	3.83	2.71	2.39	1.54	– –
Linear	**All Values**	3.83	2.71	2.39	1.54	– –

Servo Mount Potentiometers

ECO Series – 78CS Model, Conductive Plastic

0.3 Watt – ±1% Linearity

VISHAY

- High quality conductive plastic precision servo mount potentiometer
- Long life - more than 20 million cycles
- Each potentiometer supplied with mounting kit (three clamps, nuts and instructions)

L = 13.1, Dia = 22.2 (body),
L = 11.1, Dia = 3.17 (shaft)

Power rating @ 70°C	0.3W	Mechanical rotation	360° (continuous)
Dielectric strength	≥500V rms, 50Hz	Output smoothness	≤0.05%
Resistance tolerance	±20%	Insulation resistance	1000MΩ
Electrical rotation	340° ±5°	Operating temperature	-55°C to + 125°C

Stocked in the following OHMIC Values:

1K = **121-3261** 5K = **121-3262** 10K = **121-3263**

234801

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products,
prices are subject to change without notice.

Order Code	Price Each 1+	10+	25+	50+
All Values ●	77.80	73.71	68.95	65.37

ECO Series – 78ES Model, Conductive Plastic

0.3 Watt – ±0.5% Linearity

VISHAY

- High quality conductive plastic precision servo mount potentiometer
- Extra long life - more than 30 million cycles
- Low starting torque - ≯0.2 Ncm (shaft guide: 2 ball bearings)
- Each potentiometer supplied with mounting kit (three clamps, nuts and instructions)

L = 13.1, Dia = 22.2 (body),
L = 11.1, Dia = 3.17 (shaft)

Power rating @ 70°C	0.3W	Mechanical rotation	360° (continuous)
Dielectric strength	≥500V rms, 50Hz	Output smoothness	≤0.05%
Resistance tolerance	±10%	Insulation resistance	1000MΩ
Electrical rotation	340° ± 5°	Operating temperature	-55°C to + 125°C

Stocked in the following OHMIC Values:

1K = **121-3264** 5K = **121-3265** 10K = **121-3266**

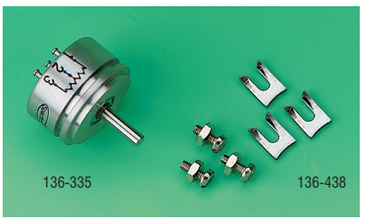
234802

Order Code	Price Each 1+	25+	100+	500+
All Values ●	3.61	1.63	1.20	0.98

1 Watt – 157 Series, Conductive Plastic

±2% and ±0.5% Linearity

VISHAY Vishay Spectrol



L = 13.1, (body), 11.13 (spindle) Dia = 22.22, (body) 19.05 (recess), 3.17 (spindle)

- High quality conductive plastic precision servo mount potentiometer
- Optional standard ±2% or ±0.5% linearity
- Each potentiometer supplied with mounting kit (three clamps, nuts and instructions)
- Mounting kit also available separately

Power rating @ 40°C	1W	Mechanical rotation	360° continuous
Dielectric strength	1000V ac	Rotational life	2000000 cycles
Resistance tolerance	±20%	Output smoothness	0.1% max.
Linearity (independent)	±2% (standard)	Insulation resistance	1000MΩ
	±0.5% (special)	Operating temperature	-55°C to + 125°C
Temperature coefficient	±600ppm/°C		

Stocked in the following OHMIC Values:

Standard 157-21 ±2% linearity

1K = **121-3240** 2K = **121-3241** 5K = **121-3242** 10K = **121-3243**

Standard 157-22 ±0.5% linearity

1K = **121-3244** 2K = **121-3245** 5K = **121-3247** 10K = **121-3248** 20K = **121-3249**

Mftrs. List No. 1527-21 + Value, 157-22 + Value

207292

	Order Code	Price Each 1+	10+	25+	50+	+
157-21 ±2% lin.	All Values ●	61.16	57.76	– –	– –	– –
152-9002 ±0.5% lin.	All Values ●	95.22	86.88	79.85	70.93	– –
Mounting kit	121-3250●	5.45	4.79	4.66	3.46	– –

1 Watt – 6539S Series, Conductive Plastic

BOURNS® Reliable Electronic Solutions

- High quality conductive plastic servo mount potentiometer
- Essentially infinite resolution, excellent rotational life

L = 12.7 (body), 9.53 (spindle)
Dia = 22.2 (body), 19.05 (recess), 3.17 (spindle)

Power rating @ 70°C	1W	Mechanical rotation	360° continuous
Voltage rating	300V ac (or limited by power dissipation whichever <)	Rotational life	10000000 cycles
		Output smoothness	0.1% max
		Insulation resistance	500MΩ
Resistance tolerance	±15%	Operating temperature	-65°C to + 125°C
Linearity	340° ±3%		

Stocked in the following OHMIC Values:

1K = **238-065** 2K = **653-032** 5K = **238-077** 10K = **238-089** 50K = **653-056**

207191

	Order Code	Price Each 1+	10+	25+	50+
Potentiometer	All Values	77.74	72.10	66.94	61.99

Analogue Output Potentiometers

601-1045 Smart-Pot Sensor

VISHAY Vishay Spectrol

H = 44, W = 33, D = 20 (body)
Shaft = 22 (incl. bush) x 6.35 dia.
Mounting bush = 3/8" x 32 UNEF-2A
Lead assembly length = 30

- Patented Smart position sensor
- Provides 360° absolute analogue electrical output
- High reliability and long life
- Reverse polarity protection on board
- Sealed to **IP54**
- Connector lead assembly available
- Designed for CCTVs, medical instruments, robotic arms control, CNC machinery, rotational control systems, pick n' place machines and angular feedback

Supply voltage	5V dc ±0.5V dc	Independent linearity	±1° typical
Supply current	20mA max	Mechanical rotation	Continuous
Temperature coefficient	±1° max	Rotational life	5 million revolutions
Angular response	50µs	Output connection	Molex 7880 header
Voltage output	>90%Vs	Operating temperature	-40°C to + 70°C

207375

	Order Code	Price Each 1+	10+	50+	100+
Smart sensor	328-2661	81.43	72.03	66.87	60.42
Connector lead assembly	121-3370●	9.78	9.72	9.48	8.56

Digital Output Potentiometers

Absolute Contacting Encoder – ACE

BOURNS® Reliable Electronic Solutions

- Low cost panel or PCB mounting
- Absolute contacting encoder giving 8 bit parallel grey code output of each of 128 rotary positions
- May be interfaced directly with a microprocessor
- Removes the need for the pulse counting/direction discrimination software required for incremental encoders
- Technical support for output code truth table

H=27.9, W=22.2,
L=8.8 (body above PCB)
Spindle and bush=19, Bush=M9

Output	8 bit grey code	Rotational life	50000 shaft revolutions
Positions per revolution	128	Mechanical rotation	Continuous
Contact rating	10mA @ 10V or 0.1W	Operating temperature	-25°C to + 125°C
Dielectric strength	1000V AC minimum	Max operating speed	120 rpm
Insulation resistance	≥1000MΩ		

Mftrs. List No: EAW0J-B24-AE0128

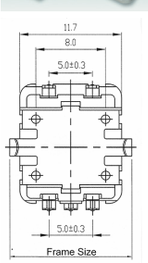
207267

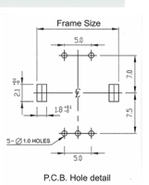
Order Code	Price Each 1+	25+	50+	100+
700-5258▲‡	19.22	14.97	12.21	10.35
935-8234●	19.22	14.97	12.21	10.35

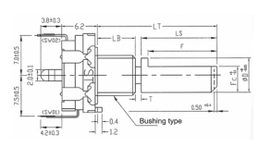
CI-11 Incremental Encoder

PIHER

- Low cost incremental encoder
- 2-bit in quadrature code
- 30 detent continuous rotation
- Available with or without switch







Contact rating	10mA
Contact resistance	100mΩ
Pulses per revolution	15
Rotational life	20000 cycles
Operating temperature	-40°C to +85°C

311968/406087

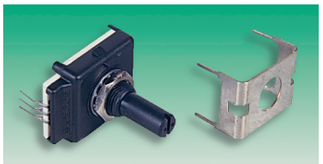
Style	Order Code	Price Each 1+	25+	100+	200+
Without Switch	445-2458	7.39	5.86	4.88	4.20
With Switch	445-2446	8.30	6.77	5.83	5.14

● Compliant
◄ Non-compliant
‡ Limited stock - RoHS replacement available

RoHS

EC Series Digital Contacting Encoder

BOURNS Reliable Electronic Solutions



Body D=27.6, W=22.2, H=7.4
Shaft=19.0 (inc bush) x 6.32 dia,
Bush=M9 x 0.75

- Low cost digital contacting encoders, long operating life and high operating temperature characteristics
- 2 bit gray code output is produced, channel A leads channel B by 90° (clockwise)
- Optional snap-on PCB mounting bracket

Contact rating	10mA @ 10V, or 0.1W	Maximum operating speed	120 rpm
Voltage rating	350V ac (or limited by power dissipation whichever <)	Rotational life	200000 revs
		Mechanical rotation	Continuous
		Insulation resistance	>1000MR
Dielectric strength	1000V ac	Operating temperature	+1°C to + 125°C

Cycles Per Revolution	Detents	Mftrs List No.	Order Code
6	24	ECW0J-B24-AC0006	**109-111**
24	24	ECW1J-B24-AC0024	**120-0080**

207187/406088

	Order Code	Price Each 1+	25+	50+	100+
Encoder, 6 cycles	**109-111**	10.05	7.80	6.39	5.40
Encoder, 24 cycles	**120-0080**●	10.05	7.80	6.39	5.40
PCB mounting bracket	**219-113**	0.84	0.66	0.57	0.56

120EN Series Rotary Optical Encoder

VISHAY Vishay Spectrol

Ribbon Cable Horizontal PCB Vertical PCB
Shaft=22 (incl. bush), dia.=6.35
Mounting bush=3/8" x 32 NEF
Ribbon cable length=190

- Manually or motor operated rotary optical encoder
- 2 channel quadrature output, channel A leads channel B by 90° electrically, CCW rotation
- Stainless steel spindle, nickel plated bush
- Ribbon cable, horizontal or vertical PCB mounting versions

Supply voltage	5V dc ±0.25V dc	Maximum rotational speed	300 rpm
Supply current	30mA max.	Rotational life	10 million revolutions
Mechanical rotation	Continuous	Operating temperature	-40°C to +65°C
Resolution	128 pulses per revolution		

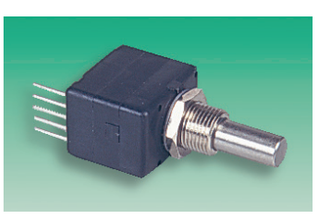
Connections			PCB	Pin 1	5V dc
Ribbon cable	Red	5V dc		Pin 2	Output A
	Green	Ground		Pin 3	Ground
	Yellow	Output A		Pin 4	Output B
	Orange	Output B			

207364

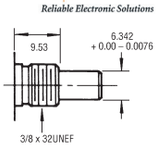
Style	Mftrs. List No.	Order Code	Price Each 1+	10+	50+	100+
Ribbon cable	120EN-128-CBL	**114-4747**●	90.20	74.46	59.16	49.68
Horizontal PCB	120EN-128-B66	**114-4748**●	86.55	71.52	56.82	53.52
Vertical PCB	120EN-128-C24	**114-4749**●	85.46	70.53	56.07	47.01

EN Series Rotary Optical Encoder

BOURNS Reliable Electronic Solutions

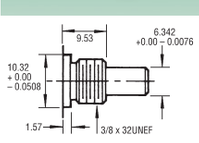


Body
H=21.21,
W=15.88,
D=18.50,
Spindle L=22.23

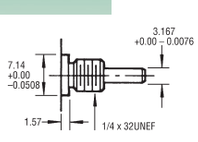


107-100

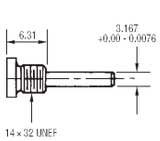
Bushing styles



107-101 (Ball bearing)



107-102 (Ball bearing)



452-348

- Suitable for digital systems where both magnitude and direction of adjustment must be provided
- 2 bit gray code output produced, channel A leads channel B by 90° (clockwise)
- Ideal as a digital panel control or as position sensing devices in applications where long life, high resolution and precise linearity are critical.

Supply voltage	5V dc ±0.25V dc	Connections	1	Ground
Supply current	26mA max		2	NC
Mechanical rotation	Continuous		3	Output A
Resolution				
(107-100, 107-102, 452-348)	128 pulses per revolution		4	+Vcc
(107-101)	256 pulses per revolution		5	Ouput B
Operating temperature	-40°C to +85°C			

Mftrs. List No. ENA1J-B28-L00128 = 107-100, ENS1J-B28-L00256 = 107-101,
ENA1J-B28-L00128L = 935-8242, ENT1J-D28-L00128L = 935-8277,
ENT1J-D28-L00128 = 107-102, ENC1J-D28-L00128 = 452-348,
ENS1J-B28-L00256L = 935-8269, ENC1J-D28-L00128L = 935-8250,

207180

Order Code	Price Each 1+	25+	50+	100+
107-100▲‡	101.97	79.41	64.86	55.32
935-8242▲	101.97	79.41	64.86	55.32
107-101▲‡	182.58	142.17	116.13	99.02
935-8269▲	182.58	142.17	116.13	99.02
107-102▲‡	156.84	122.13	99.75	85.07
935-8277▲	156.84	122.13	99.75	85.07
452-348▲‡	101.97	79.41	64.86	55.32
935-8250▲	101.97	79.41	64.86	55.32

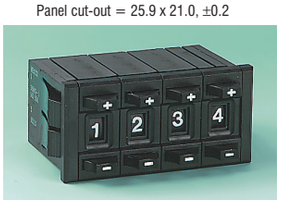
Digital Push Button Potentiometers

2 Watt – 3682/3683/3684 Series

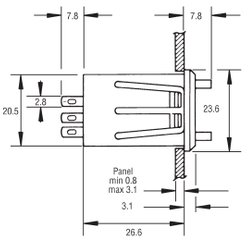
BOURNS Reliable Electronic Solutions

Panel cut-out = 25.9 x 21.0, ±0.2

Panel cut-out = 36.0 x 21.0, ±0.2



Panel cut-out = 46.2 x 21.0, ±0.2



- Digital push-button potentiometer enabling precise setting of resistance value
- Snap-in panel mounting.

Power rating @ 25°C	2W	Absolute minimum resistance	0.3Ω or 0.2% whichever >
Voltage rating	500V ac (or limited by power dissipation whichever <)	Dielectric strength (sea level)	1000V ac
		Insulation resistance @ 500V dc	MR>1000MΩ
Resistance tolerance	±3%	No. of operations	75000 min
Temperature coefficient	±100ppm/°C	Readout marking	10 positions
Dial reading to O/P ratio	±0.5% full scale	Operating temperature	-25°C to +85°C
Repeatability of dial reading	0.1% of full scale		

Stocked in the following OHMIC values:

3682 - Two button
1K = **120-0088** 5K = **120-0089** 10K = **120-0090** 100K = **120-0091**
Mftrs. List No. = 3682 + value

3683 - Three button
1K = **120-0081** 5K = **120-0083** 10K = **120-0084** 100K = **120-0085**
Mftrs. List No. = 3683 + value

3684 - Four button
10K = **120-0092**
Mftrs. List No. = 3684 + value

207426

	Order Code	Price Each 1+	10+	25+	50+
2 button	**All Values** ●	100.71	91.99	83.10	81.44
3 button	**All Values** ●	100.71	91.99	83.10	81.44
4 button	**120-0092**	100.71	91.99	83.10	81.44

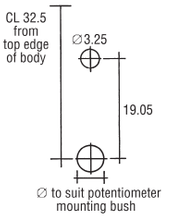
Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products,
prices are subject to change without notice.

Counting Dials

10 Turn Digital

VISHAY Vishay Spectrol

H=44.5, W=25.4, D=22



Panel cut-out

- 10 turn digital counter dial
- Three black dials with white markings
- Supplied with key for tightening the locking set screws

Operating temperature -20°C to +50°C

Mftrs. List No.	Finish	Protective Window	Order Code
15-1-11	Satin chrome	No	121-9775
15-1-13	Black chrome	No	121-9779
15-1-31	Satin chrome	Yes	121-9780
15-1-33	Black chrome	Yes	121-9781

207384

Finish	Order Code	Price Each 1+	10+	25+	50+	+
Without window						
Satin	**121-9775●**	52.32	48.27	45.93	37.60	– –
Black	**121-9779●**	50.62	45.57	41.66	39.22	– –
With window						
Satin	**121-9780●**	50.78	45.99	43.71	40.33	– –
Black	**121-9781●**	51.05	46.73	43.92	42.33	– –

10 Turn

BOURNS Reliable Electronic Solutions

- 10 turn digital counting dial
- Accurate to 1/500th per revolution
- White markings on a black background
- Recessed mounting reducing front panel projection
- Supplied with lock nut and allen key

Body dia=28 max, D=33, Shaft dia=6.35
Projection from front panel=17
Panel cut-out max=28.9 dia, Panel thickness=3.5

Operating temperature -10°C to +60°C

207169

Mftrs. List No.	Order Code	Price Each 1+	10+	25+	50+	+
CT-26-6A.	**107-3849●**	62.13	57.63	55.74	45.15	– –

7/8" (22mm) Dia – 10 Turn

TT electronics BI Technologies Limited

NEW

- Precision 10 turn analogue counting dial
- Dial finish has white numerals in black matte
- Black markings on aluminium finish
- Housing finish is a satin chrome

Body dia = 46.0, D = 24.6

416093

Order Code	Mftrs. List No.	Price Each 1+	5+	10+	50+	+
943-1942●	**2696**	41.24	37.79	33.95	32.58	– –

Product Watch obsolescence notification

- FREE to all account holders
- Notification of obsolete, end of line and end of stock items
- Replacement or upgrade recommendations

Advanced warning of obsolete components

7/8" (22mm) Dia – 15 Turn

TT electronics BI Technologies Limited

NEW

- Precision 15 turn analogue counting dial
- Housing comes in a satin chrome finish
- The dial comes in black numerals on satin chrome
- Positive action locking machanism

Body dia = 46.0, D = 24.6

416094

Order Code	Mftrs. List No.	Price Each 1+	5+	10+	50+	+
943-1950●	**RB**	41.24	39.91	39.13	38.08	– –

7/8" (22mm) Dia – 20 TURN

2606 Series

TT electronics BI Technologies Limited

NEW

- Precision 20 turn analogue counting dial
- Locking Mechanism is a positive action with detent
- Knob material is a black plastic
- Black numerals on satin chrome

Body dia = 46.0, D = 24.6

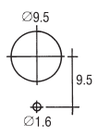
411615

Order Code	Mftrs. List No.	Price Each 1+	5+	10+	50+	+
943-1934●	2606	60.32	56.31	52.44	47.07	– –

10 Turn

VISHAY Vishay Spectrol

Body dia=25.4, D=22



Panel cut-out
Shaft dia.=0.25"

- 10 turn analogue counting dial
- Available in satin chrome or black chrome finish
- Suitable for potentiometers with 0.375" dia. 32 TPI UNF-2A bush
- Supplied with allen key

Operating temperature -20°C to +85°C

Mftrs. List No.	Finish	Order code
11-1-11	Satin chrome, black markings	114-4732
11-1-21	Black chrome, white markings	114-4811
11-1-41	Satin chrome, white markings	114-4812

207382

Finish	Order Code	Price Each 1+	10+	25+	50+	+
Chrome/Black	**114-4732●**	38.49	35.55	33.78	26.46	– –
Black/White	**114-4811●**	36.71	34.87	33.13	28.92	– –
Chrome/White	**114-4812●**	33.37	30.48	28.98	26.37	– –

15 Turn

BOURNS Reliable Electronic Solutions

- Full metal precision counting dial
- Excellent legibility black marking on chrome background
- High quality cast and hard chrome housing
- High force click brake
- Replaces the popular H-507-6

Body dia=22.2, D=24, Shaft dia=6.35

Mftrs. List No. H22-6A

● Compliant
◄ Non-compliant
++ Limited stock - RoHS replacement available

RoHS

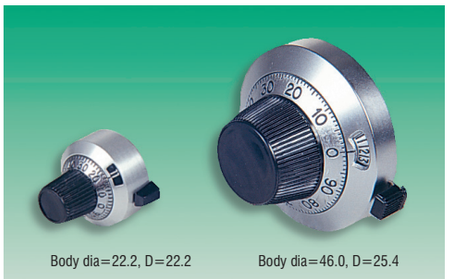
C = CYAN M = Magenta Y = Yellow B = Black/SING

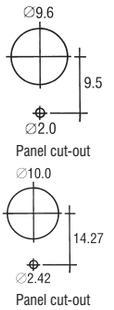
207265

Order Code	Price Each 1+	25+	50+	100+
868-887	29.82	27.90	26.58	20.46

15 Turn

VISHAY
Vishay Spectrol





- 15 turn analogue counting dial
- Available in satin chrome or black chrome finish
- Suitable for potentiometer with 0.375" dia. 32 TPI UNF-2A bush
- Supplied with allen key

Operating temperature -20°C to +85°C

Dia.	Mftrs. List No.	Finish	Order Code
22.2	16-1-11	Satin chrome, black markings	**114-4733**
22.2	16-1-21	Black chrome, white markings	**114-4813**
46	21-1-11	Satin chrome, black markings	**114-4734**

207383

Finish	Order Code	Price Each 1+	10+	25+	50+	+
Chrome/Black	**114-4733**●	20.46	18.78	18.09	– –	– –
Black/White	**114-4813**●	22.35	20.16	18.65	– –	– –
Chrome/Black	**114-4734**●	46.65	40.50	36.93	31.34	– –

Accessories

Potentiometer 'Hexseal'

- 'Hexseal' rotary shaft seals
- Resistant to salt spray, ozone and most acids
- Manufactured in grey silicone rubber with brass nut
- Conforms to **MIL-B-5423/09**

Operating temperature -70°C to +205°C

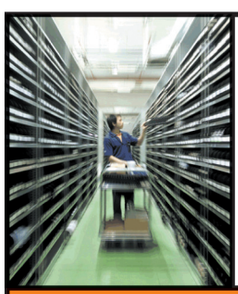
207381

Shaft Dia	Thread	Order Code	Price Each 1+	25+	100+
¼" (6.35mm)	3/8-32	**146-839**●	8.35	7.65	6.96

RoHS Directive

Worried about the part number lottery?
Count on us for traceability
-visit www.rohs.info

Don't risk anyone else for RoHS



In stock and ready to despatch, 300,000 products in our Asia, US and Europe warehouses.

300,000 products at your fingertips

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