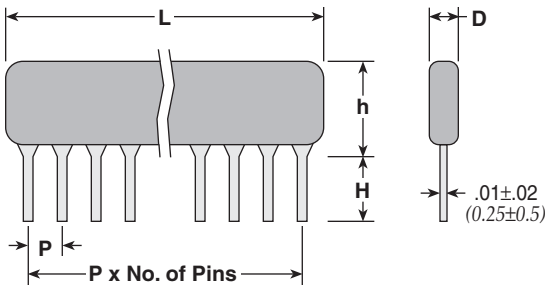


### features

- Custom design network
- Ultra-precision performance for precision analog circuits
- Tolerance to  $\pm 0.1\%$ , matching to  $0.05\%$
- T.C.R. to  $\pm 25\text{ppm}/^\circ\text{C}$ , tracking to  $2\text{ppm}/^\circ\text{C}$
- Marking: Black body color with laser marking
- Products with lead-free terminations meet EU RoHS requirements. EU RoHS regulation is not intended for Pb-glass contained in electrode, resistor element and glass.

### dimensions and construction



Type	Dimensions inches (mm)				
	L (max.)	D (max.)	P	H	h (max.)
MRPL03	.335 (8.5)	.098 (2.5)	.100 $\pm$ .008 (2.54 $\pm$ 0.2)	.118 $\pm$ .02 (3.0 $\pm$ 0.5)	.256 (6.5)
MRPA03					.335 (8.5)

### ordering information

New Part #	<b>MRP</b>	<b>L03</b>	<b>E</b>	<b>A</b>	<b>D</b>	<b>103/103</b>	<b>B</b>	<b>A</b>
	Type	Size	T.C.R. (ppm/ $^\circ$ C)	T.C.R. Tracking	Termination Material	Resistance Value	Tolerance	Tolerance Ratio
		L03 A03	E: $\pm 25$ C: $\pm 50$	A: 2 Y: 5 T: 10	D: SnAgCu	3 significant figures/ 3 significant figures	B: $\pm 0.1\%$ C: $\pm 0.25\%$ D: $\pm 0.5\%$ F: $\pm 1.0\%$	E: 0.025% A: 0.05% B: 0.1% C: 0.25% D: 0.5%

### custom circuit ordering information

New Part #	<b>MRP</b>	<b>KxxxxD</b>
	Type	Custom Code
		Factory will assign

### applications and ratings

#### Ratings

Type	Power Rating (mW)		Absolute T.C.R.	T.C.R. Tracking	Resistance Range*	Resistance Tolerance	Maximum Working Voltage	Maximum Overload Voltage	Rated Ambient Temperature	Operating Temperature Range
	Element	Package								
MRPL03	100	200	E: $\pm 25$ C: $\pm 50$	A: 2 (R1/R2 $\leq$ 10) Y: 5 T: 10	50-100k $\Omega$	B: $\pm 0.1\%$ C: $\pm 0.25\%$ D: $\pm 0.5\%$ F: $\pm 1\%$	100V	200V	+70 $^\circ$ C	-55 $^\circ$ C to +125 $^\circ$ C
MRPA03										

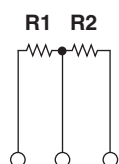
\* Resistance combination for R1, R2 is standardized to 200/20k, 1k/1k, 1k/2k, 1k/4k, 1k/9k, 1k/10k, 1k/20k, 10k/10k, 10k/100k, 50k/50k, 100k/100k  
Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use. 11/21/11

## applications and ratings (continued)

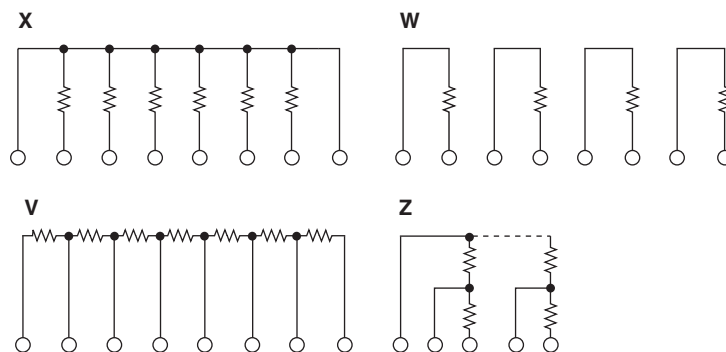
### Resistance Range

		Resistance Ratio Tolerance				
		E: 0.025%	A: 0.025%	B: 0.1%	C: 0.25%	D: 0.5%
Absolute Resistance Tolerance	B: $\pm 0.1\%$	50 $\Omega$ - 100k $\Omega$	50 $\Omega$ - 100k $\Omega$	50 $\Omega$ - 100k $\Omega$	—	—
	C: $\pm 0.25\%$	50 $\Omega$ - 100k $\Omega$	50 $\Omega$ - 100k $\Omega$	50 $\Omega$ - 100k $\Omega$	50 $\Omega$ - 100k $\Omega$	—
	D: $\pm 0.5\%$	50 $\Omega$ - 100k $\Omega$	50 $\Omega$ - 100k $\Omega$	50 $\Omega$ - 100k $\Omega$	50 $\Omega$ - 100k $\Omega$	50 $\Omega$ - 100k $\Omega$
	F: $\pm 1\%$	50 $\Omega$ - 100k $\Omega$	50 $\Omega$ - 100k $\Omega$	50 $\Omega$ - 100k $\Omega$	50 $\Omega$ - 100k $\Omega$	50 $\Omega$ - 100k $\Omega$
R1/R2 Relative Resistance Ratio		100 max.	100 max.	150 max.	150 max.	150 max.

### standard circuit schematic



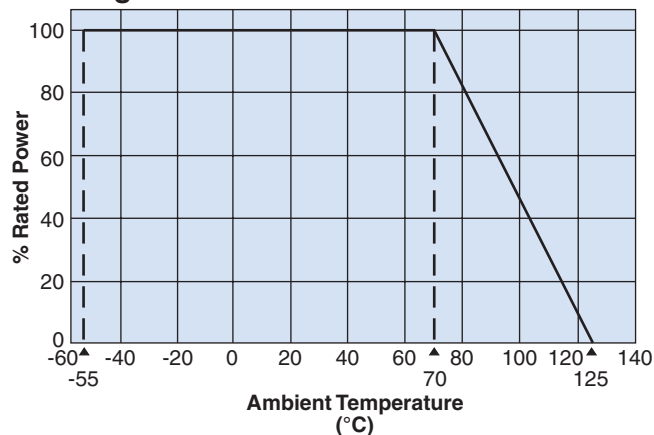
### custom circuit schematics



(Examples only. Contact factory for other custom layout requests.)

### environmental applications

#### Derating Curve



### Performance Characteristics

Parameter	Requirement	Test Method
Resistance	Within specified tolerance	25°C
T.C.R.	Within specified T.C.R.	+25°C/+65°C
Overload (Short Time)	$\pm 0.05\%$	Rated voltage x 2.5 or max. overload voltage, whichever is lower, 5 seconds
Resistance to Soldering Heat	$\pm 0.1\%$	+350°C $\pm$ 10°C, 3.5 $\pm$ 0.5 seconds
Rapid Change of Temperature	$\pm 0.1\%$	-55 $\pm$ 0/-5°C (30 min.), +125 $\pm$ 3/-0°C (30 min.) 5 cycles
Moisture Resistance	$\pm 0.1\%$	40°C $\pm$ 2°C, 90 - 95% RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
Endurance at 70°C	$\pm 0.1\%$	70°C $\pm$ 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
Resistance to Solvents	No abnormality in outer coating and markings	Soaking in 2-propanol of +20°C ~ +25°C for 180 seconds $\pm$ 10 seconds
Insulation Resistance	10,000M $\Omega$ or above	500V (d.c.) for 1 minute between terminals and coatings
Withstanding Voltage	$\pm 0.5\%$	500V (a.c.) for 1 minute between terminals and coatings