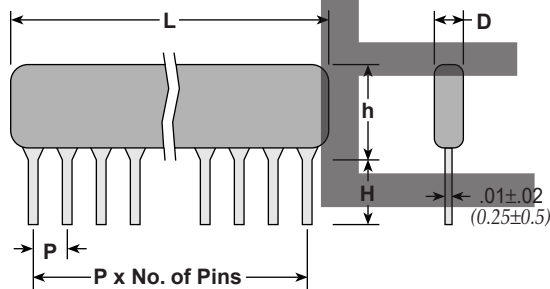


### features

- 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  $2\text{ppm}/^\circ\text{C}$
- 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.

leaded resistors

### 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

<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

<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 (R2/R1 $\leq$ 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.

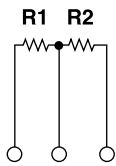
**applications and ratings (continued)**

**Resistance Range**

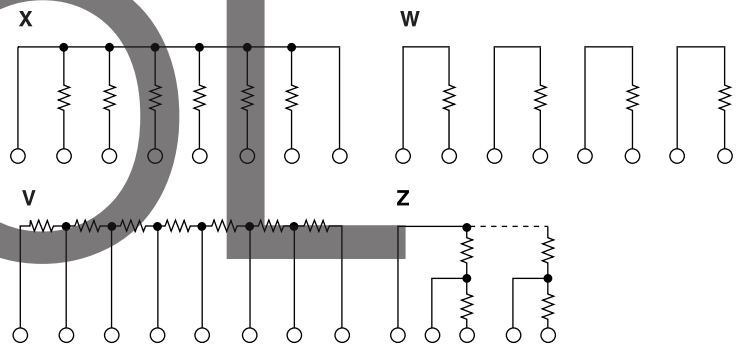
		Resistance Ratio Tolerance				
		E: 0.025%	A: 0.05%	B: 0.1%	C: 0.25%	D: 0.5%
Absolute Resistance Tolerance	B: ±0.1%	50Ω - 100kΩ	50Ω - 100kΩ	50Ω - 100kΩ	—	—
	C: ±0.25%	50Ω - 100kΩ	50Ω - 100kΩ	50Ω - 100kΩ	50Ω - 100kΩ	—
	D: ±0.5%	50Ω - 100kΩ	50Ω - 100kΩ	50Ω - 100kΩ	50Ω - 100kΩ	50Ω - 100kΩ
	F: ±1%	50Ω - 100kΩ	50Ω - 100kΩ	50Ω - 100kΩ	50Ω - 100kΩ	50Ω - 100kΩ
R1/R2 Relative Resistance Ratio		100 max.	100 max.	150 max.	150 max.	150 max.

leaded resistors

**standard circuit schematic**



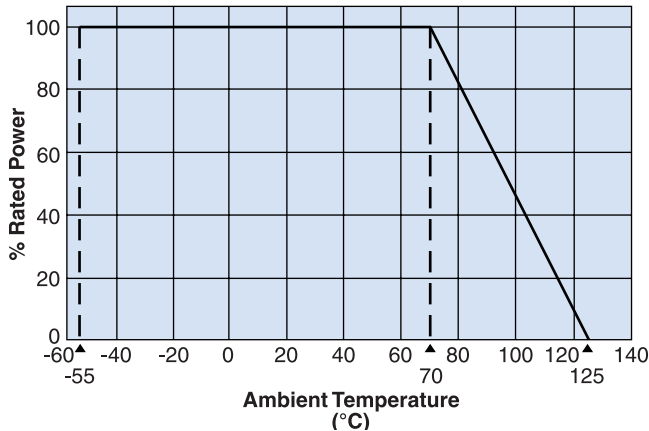
**custom circuit schematics**



(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)	±0.05%	Rated voltage x 2.5 or max. overload voltage, whichever is lower, 5 seconds
Resistance to Soldering Heat	±0.1%	+350°C ± 10°C, 3.5 seconds ± 0.5 seconds
Rapid Change of Temperature	±0.1%	-55 +0/-5°C (30 min.), +125 +3/-0°C (30 min.) 5 cycles
Moisture Resistance	±0.1%	40°C ± 2°C, 90 - 95% RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
Endurance at 70°C	±0.1%	70°C ± 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 ± 10 seconds
Insulation Resistance	10,000MΩ or above	500V (d.c.) for 1 minute between terminals and coatings
Withstanding Voltage	±0.5%	500V (a.c.) for 1 minute between terminals and coatings

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1/07/25