

Thick Film Chip Resistors

MCRNL Series



Features:

- High reliability with RUO2 paste
- Miniature, high density packaging
- Combination of different ohmic values are available

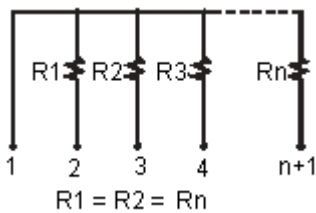


Specifications:

Temperature coefficient	: 50 Ω to 1 MΩ : ±200 PPM/°C < 50 Ω and > 1 MΩ : ±250 PPM/°C
Maximum short time overload	: ± (0.5% + 0.1 Ω)
Minimum insulation resistance	: 10,000 Mega Ohm
Dielectric withstanding voltage	: No evidence of flashover, mechanical damage, arcing or insulation breakdown
Maximum terminal strength	: ± (0.5% + 0.1 Ω)
Maximum resistance to soldering heat	: ± (0.5% + 0.1 Ω)
Minimum solderability	: 95% coverage
Maximum thermal shock	: ± (0.5% + 0.1 Ω)
Maximum temperature cycling	: ± (0.5% + 0.1 Ω)
Maximum load life in humidity	: ± (3% + 0.1 Ω)
Maximum load life	: ± (3% + 0.1 Ω)

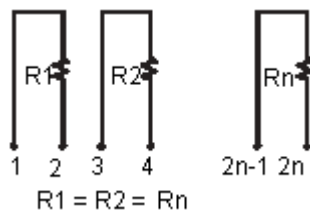
Single Common

A

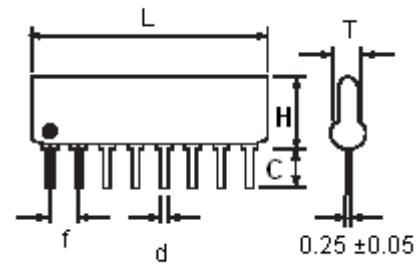


Isolated

B

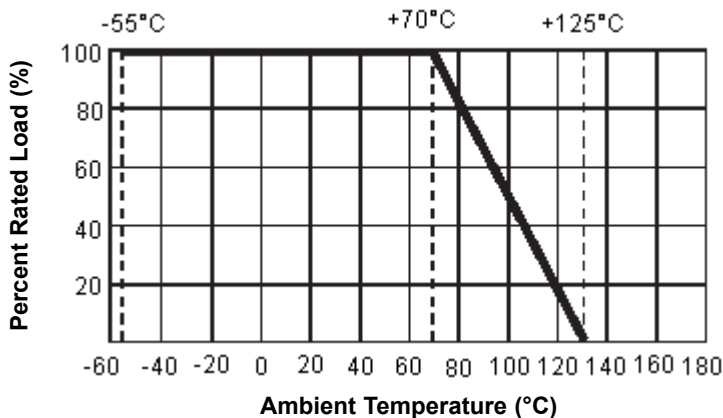


Dimension



Dimensions : Millimetres

Derating Curve



Dual Value (R1 / R2) (Ohm)

160 / 240	330 / 390
180 / 390	330 / 470
220 / 270	1.5 K / 3.3 K
220 / 330	3 K / 6.2 K

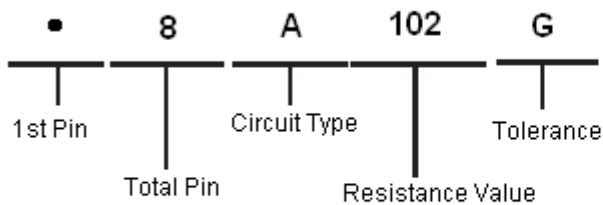
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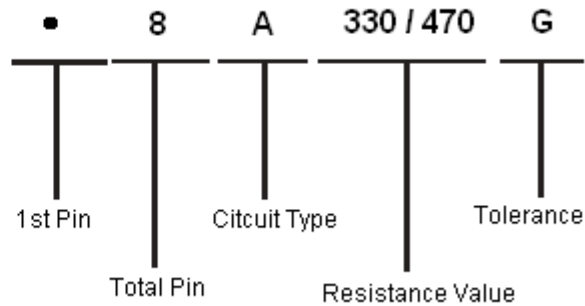
MCRNL Series

Type	L (Maximum)	H (Maximum)	T (Maximum)	C $\begin{matrix} +0.3 \\ -0.2 \end{matrix}$	d ± 0.1	f ± 0.2
5 pins	12.7	5.08	2.5	3.2	0.5	2.54
6 pins	15.3					
8 pins	20.4					
9 pins	22.9					
10 pins	25.4					

Marking (Single Value)



Marking (Dual Value)



Type	Power Rating at 70°C	Operating Temperature Range	Maximum Working Voltage	Maximum Overload Voltage	Dielectric Withstanding Voltage	Tolerance %	Resistance Range
B Type	0.2 W	-550 to +125°C	100 V	150 V	200 V	±2%	R-Type 100Ω to 10KΩ
Other	0.125 W					±5%	Others: 10Ω to 1MΩ

Part Number Table

Description	Part Number
Resistor, Network, 10K, 2%, 1/8W	MCRNLA05G0103B0E
Resistor, Network, 100R, 2%, 1/8W	MCRNLA06G0101B0E
Resistor, Network, 220R, 2%, 1/8W	MCRNLA06G0221B0E
Resistor, Network, 1K, 2%, 1/8W	MCRNLA06G0102B0E
Resistor, Network, 4K7, 2%, 1/8W	MCRNLA06G0472B0E
Resistor, Network, 10K, 2%, 1/8W	MCRNLA06G0103B0E
Resistor, Network, 22K, 2%, 1/8W	MCRNLA06G0223B0E
Resistor, Network, 100K, 2%, 1/8W	MCRNLA06G0104B0E

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Part Number Table

Description	Part Number
Resistor, Network, 470K, 2%, 1/8W	MCRNLA06G0474B0E
Resistor, Network, 470R, 2%, 1/8W	MCRNLA08G0471B0E
Resistor, Network, 1K, 2%, 1/8W	MCRNLA08G0102B0E
Resistor, Network, 3.3K, 2%, 1/8W	MCRNLA08G0332B0E
Resistor, Network, 4.7K, 2%, 1/8W	MCRNLA08G0472B0E
Resistor, Network, 10K, 2%, 1/8W	MCRNLA08G0103B0E
Resistor, Network, 47K, 2%, 1/8W	MCRNLA08G0473B0E
Resistor, Network, 220K, 2%, 1/8W	MCRNLA08G0224B0E
Resistor, Network, 470K, 2%, 1/8W	MCRNLA08G0474B0E
Resistor, Network, 100R, 2%, 1/8W	MCRNLA09G0101B0E
Resistor, Network, 150R, 2%, 1/8W	MCRNLA09G0151B0E
Resistor, Network, 270R, 2%, 1/8W	MCRNLA09G0271B0E
Resistor, Network, 1K, 2%, 1/8W	MCRNLA09G0102B0E
Resistor, Network, 1K5, 2%, 1/8W	MCRNLA09G0152B0E
Resistor, Network, 4.7K, 2%, 1/8W	MCRNLA09G0472B0E
Resistor, Network, 10K, 2%, 1/8W	MCRNLA09G0103B0E
Resistor, Network, 15K, 2%, 1/8W	MCRNLA09G0153B0E
Resistor, Network, 220K, 2%, 1/8W	MCRNLA09G0224B0E
Resistor, Network, 470K, 2%, 1/8W	MCRNLA09G0474B0E
Resistor, Network, 1M, 2%, 1/8W	MCRNLA09G0105B0E
Resistor, Network, 100R, 2%, 1/8W	MCRNLA10G0101B0E
Resistor, Network, 150R, 2%, 1/8W	MCRNLA10G0151B0E
Resistor, Network, 470R, 2%, 1/8W	MCRNLA10G0471B0E
Resistor, Network, 1K, 2%, 1/8W	MCRNLA10G0102B0E
Resistor, Network, 2.2K, 2%, 1/8W	MCRNLA10G0222B0E
Resistor, Network, 3K3, 2%, 1/8W	MCRNLA10G0332B0E
Resistor, Network, 4.7K, 2%, 1/8W	MCRNLA10G0472B0E
Resistor, Network, 10K, 2%, 1/8W	MCRNLA10G0103B0E
Resistor, Network, 22K, 2%, 1/8W	MCRNLA10G0223B0E

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Resistor, Network, 100K, 2%, 1/8W	MCRNLA10G0104B0E
Resistor, Network, 1M, 2%, 1/8W	MCRNLA10G0105B0E
Resistor, Network, 1K, 2%, 1/5W	MCRNLB06G0102B0E
Resistor, Network, 2K2, 2%, 1/5W	MCRNLB06G0222B0E
Resistor, Network, 10K, 2%, 1/5W	MCRNLB06G0103B0E
Resistor, Network, 100K, 2%, 1/5W	MCRNLB06G0104B0E
Resistor, Network, 10R, 2%, 1/5W	MCRNLB08G0100B0E
Resistor, Network, 82R, 2%, 1/5W	MCRNLB08G0820B0E
Resistor, Network, 150R, 2%, 1/5W	MCRNLB08G0151B0E
Resistor, Network, 100R, 2%, 1/5W	MCRNLB08G0101B0E
Resistor, Network, 220R, 2%, 1/5W	MCRNLB08G0221B0E
Resistor, Network, 270R, 2%, 1/5W	MCRNLB08G0271B0E
Resistor, Network, 330R, 2%, 1/5W	MCRNLB08G0331B0E
Resistor, Network, 470R, 2%, 1/5W	MCRNLB08G0471B0E
Resistor, Network, 680R, 2%, 1/5W	MCRNLB08G0681B0E
Resistor, Network, 1K5, 2%, 1/5W	MCRNLB08G0152B0E
Resistor, Network, 2K2, 2%, 1/5W	MCRNLB08G0222B0E
Resistor, Network, 3K3, 2%, 1/5W	MCRNLB08G0332B0E
Resistor, Network, 4K7, 2%, 1/5W	MCRNLB08G0472B0E
Resistor, Network, 22K, 2%, 1/5W	MCRNLB08G0223B0E
Resistor, Network, 47K, 2%, 1/5W	MCRNLB08G0473B0E
Resistor, Network, 100K, 2%, 1/5W	MCRNLB08G0104B0E
Resistor, Network, 470K, 2%, 1/5W	MCRNLB08G0474B0E
Resistor, Network, 1M, 2%, 1/5W	MCRNLB08G0105B0E
Resistor, Network, 33R, 2%, 1/5W	MCRNLB10G0330B0E
Resistor, Network, 220R, 2%, 1/5W	MCRNLB10G0221B0E
Resistor, Network, 1K, 2%, 1/5W	MCRNLB10G0102B0E
Resistor, Network, 4K7, 2%, 1/5W	MCRNLB10G0472B0E