

# Thick Film Chip Resistors



RoHS  
Compliant



## Features:

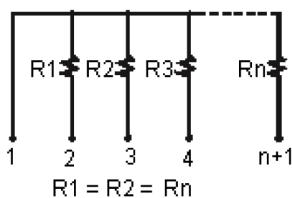
- High reliability with RU02 paste
- Miniature, high density packaging
- Combination of different ohmic values are available

## Specifications:

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

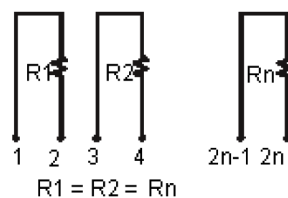
### Single Common

A

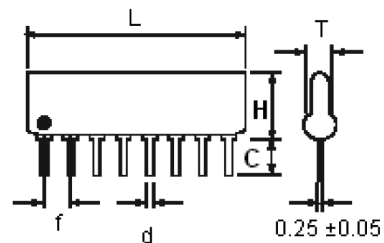


### Isolated

B

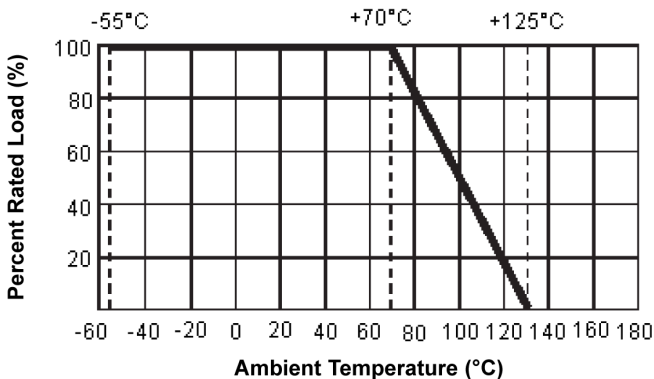


### Dimension



Dimensions : Millimetres

### Derating Curve



Dual Value (R1 / R2) (Ω)	
160 / 240	330 / 390
180 / 390	330 / 470
220 / 270	1.5K / 3.3K
220 / 330	3K / 6.2K



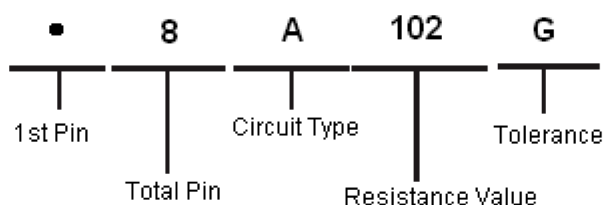
# Thick Film Chip Resistors



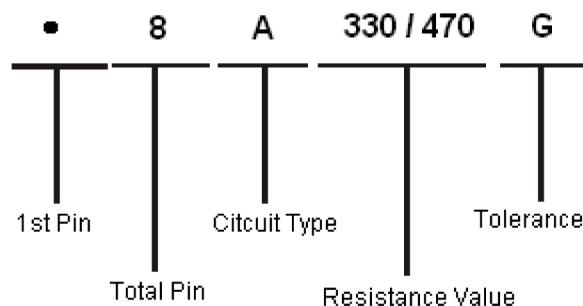
Type	L (Maximum)	H (Maximum)	T (Maximum)	C $\begin{matrix} +0.5 \\ -0.3 \end{matrix}$	d $\pm 0.1$	f $\pm 0.2$
5 pins	12.7	5.08	2.5	3.3	0.5	2.54
6 pins	15.3					
8 pins	20.4					
9 pins	22.9					
10 pins	25.4					

Dimensions : Millimetres

### 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	0.2W	-550°C to +125°C	100V	150V	200V	±2%	R-Type 100Ω to 10kΩ
Other	0.125W					±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



# Thick Film Chip Resistors



## Part Number Table

Description	Part Number
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
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

# Thick Film Chip Resistors



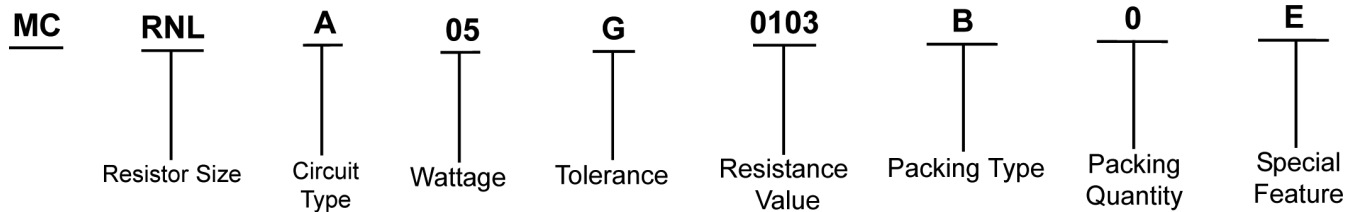
## Part Number Table

Description	Part Number
Resistor, Network, 10k, 2%, 1/8W	MCRNLA10G0103B0E
Resistor, Network, 22k, 2%, 1/8W	MCRNLA10G0223B0E
Resistor, Network, 47k, 2%, 1/8W	MCRNLA10G0473B0E
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

# Thick Film Chip Resistors



## Part Number Explanation:



- Resistor Size** : RNL = Resistors Network Low Profile
- Circuit Type** : A = Single Common, B = Isolated
- Wattage** : 05 = 5 pins  
06 = 6 pins  
08 = 8 pins  
09 = 9 pins  
10 = 10 pins
- Tolerance** : G =  $\pm 2\%$
- Resistance Value** : E-24 series:  
1st digit is "0"  
2nd and 3rd digits are significant figures of the resistance  
4th indicates the number of zeros  
"J" to 0.1, "K" to 0.01, "L" to 0.001  
Ex. 012J to 1 $\Omega$ 2, 226K to 2 $\Omega$ 26
- Packing Type** : B = Bulk / Box
- Packing Quantity** : 0 = NIL
- Special Feature** : E = Lead (Pb) Free Plating Type

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