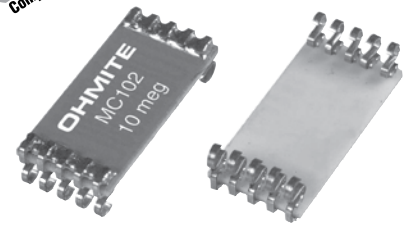


Macrochip Series

High Voltage/High Resistance Precision Thick Film Surface Mount



Ohmite's MacroChip resistors bring precision high voltage capabilities to surface mount applications. Designed with thick film on alumina substrate technology, the resistors can be provided in precision tolerances, high voltage ratings, and high resistance values. The planar package design is low profile for easy use with instrumentation, medical equipment, voltage regulators, and power supplies.

FEATURES

- Non-inductive design (less than 50 nanohenries)
- Low voltage coefficient
- Surface mount
- Pd Ag terminations
- J-bend terminals for applications involving shock and vibration

APPLICATIONS

- Medical instrumentation
- Power Supplies
- Avionics
- Light Magnification Systems

SERIES SPECIFICATIONS

Series	Resistance Range (Ohms)	Power @25°C	Voltage Rating	Standard Temp. Coefficient 85°-125°C	50PPM/°C	100PPM/°C
MC101	100Ω to 1,000M	0.75W	2.0KV	100Ω-100M	101M-1,000M	
MC102	200Ω to 5,000M	1.50W	5.0KV	200Ω-250M	251M-5,000M	
MC103	250Ω to 5,000M	2.00W	7.5KV	250Ω-100M	101M-5,000M	
MC104	1K to 5,000M	2.50W	10.0KV	500Ω-450M	451M-5,000M	
MC202	500Ω to 5,000M	2.50W	5.0KV	500Ω-200M	201M-5,000M	
MC204	1K to 5,000M	3.25W	10.0KV	1K-375M	376M-5,000M	

Contact Ohmite for custom configurations.

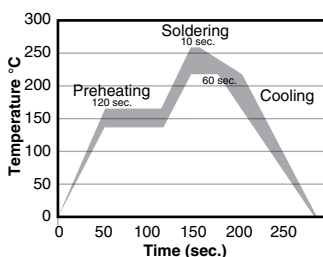
CHARACTERISTICS

Resistor	Thick film on Alumina
Resistance Range	100 Ohms to 5,000M
Power Rating	0.75W to 3.25W
Voltage Rating	2.0KV to 10.0KV
Tolerance	0.5% to 20%
Operating Temperature	-55°C to +180°C
TCR and VCR	See chart below
Solder	Silver solder is recommended for Macrochip resistors. Leaching of the silver in the termination will occur if non-silver solder is used. 60/40 tin-lead solders are not recommended for use with the Macrochip product.

PERFORMANCE DATA

Characteristic	Test Method	Specification
Humidity	MIL-STD-202, Method 103B, Condition B	±0.25%
Dielectric Withstanding Voltage	MIL-STD-202, Method 301, 750V	±0.25%
Insulation Resistance	MIL-STD-202, Method 302, Condition A or B	>10,000M or greater dry
Thermal Shock	MIL-STD-202, Method 107G, Condition B, B-1, or F	±0.20%
Load Life	MIL-STD-202, Method 108A, Condition D	±1.0%
Resistance to Solvents	MIL-STD-202, Method 215G	No degradation of coating or marking
Shock (Specified Pulse)	MIL-STD-202, Method 213B, Condition I	±0.25%
Vibration, High Frequency	MIL-STD-202, Method 204D, Condition D	±0.020%
Power Conditioning	MIL-R-49462A, Par 4.8	±0.50%

Recommended Solder Profile



Preheating: 145°C ±15°, max. 120 sec.

Soldering: min. 220°C, max. 60 sec.

Max. Temp.: 260°C ±5°, 10 sec.

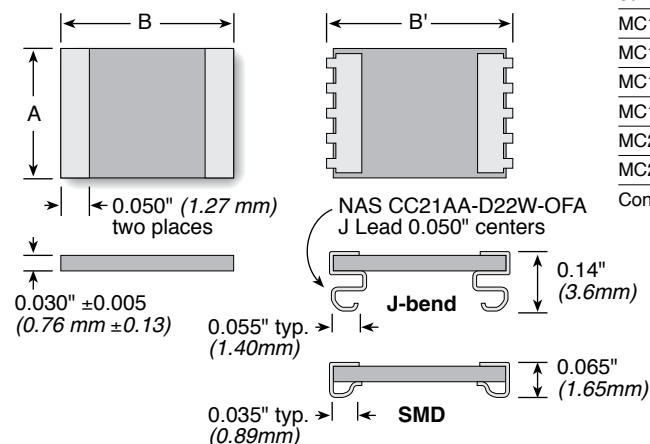
Macrochip Series

High Voltage/High Resistance Precision Thick Film Surface Mount

DIMENSIONS

(in./mm)

With Terminal Options:

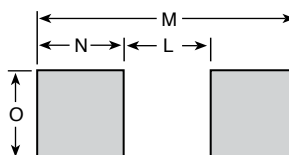


Series	Power	A ±.01"	B ±.01"	B' max. (J-bend)	Qty./Reel	
					w/J-bend	w/o J-bend
MC101	0.75W	0.25" (6.35)	0.25" (6.35)	0.29" (7.37)	1000	2500
MC102	1.50W	0.25" (6.35)	0.50" (12.70)	0.54" (13.72)	1000	2500
MC103	2.00W	0.25" (6.35)	0.75" (19.05)	0.79" (20.07)	1000	2500
MC104	2.50W	0.25" (6.35)	1.00" (25.40)	1.04" (26.42)		
MC202	2.50W	0.50" (12.70)	0.50" (12.70)			
MC204	3.25W	0.50" (12.70)	1.00" (25.40)			

Contact Ohmite for custom configurations.

Land Pattern

Land pattern dimensions are for reference only.



Size	M	N	O	L
MC101	0.280	0.080	0.278	0.120
MC102	0.530	0.080	0.278	0.370
MC103	0.780	0.080	0.278	0.620
MC104	1.030	0.080	0.278	0.870
MC202	0.530	0.080	0.556	0.370
MC204	1.030	0.080	0.556	0.870

TEMP./VOLTAGE COEFFICIENTS OF RESISTANCE

Resistor Series	0°C-85°C 25 PPM/°C	Temp. Coeff. of Resistance*		Voltage Coeff. of Resistance**	
		85°C-125°C 50 PPM/°C	100 PPM/°C	< 2PPM/Volt	< 5PPM/Volt
MC101	100 to 800M	100Ω to 100M	101M to 1,000M	100Ω to 270M	271M to 1,000M
MC102	200 to 1,500M	200Ω to 250M	251M to 5,000M	200Ω to 640M	641M to 5,000M
MC103	250 to 800M	250Ω to 440M	441M to 5,000M	250Ω to 1,100M	1,101M to 5,000M
MC104	500 to 2,500M	500Ω to 450M	451M to 5,000M	500Ω to 1,100M	1,101M to 5,000M
MC202	500 to 1,500M	500Ω to 200M	201M to 5,000M	500Ω to 520M	521M to 5,000M
MC204	1K to 1,750M	1K to 375M	376M to 5,000M	1K to 950M	951M to 5,000M

*TCR of 25ppm for temperature range of 0°C-85°C. TCR of 50ppm and 100ppm for -55°C to 125°C.

Consult factory for TCR values operating higher than 125°C.

**VC's of <2PPM/Volt are available. Contact Ohmite with your requirement.

ORDERING INFORMATION

Macro Chip Series	Style	Terminal	Ohms	Tolerance
MC	101	5 = J-bend	First 3 digits are significant; 4th digit is multiplier (# of zeroes to follow). Examples: 10R2 = 10.2 ohms 10R0 = 100 ohms 1503 = 150,000 ohms	D = 0.5% F = 1% G = 2% J = 5% K = 10% M = 15% P = 20%
102	102	6 = SMD		
104	104	8 = No term.		
202	202			
204	204			

Standard Part Numbers

Series: MC10282		Tolerance: 5%		Watts: 1W	
Ohms	Part Number	Ohms	Part Number	Ohms	Part Number
1K	MC102821001JE	50K	MC102825002JE	1.25M	MC102821254JE
2.5K	MC102822501JE	75K	MC102827502JE	1.5M	MC102821504JE
5K	MC102825001JE	100K	MC102821003JE	1.75M	MC102821754JE
7.5K	MC102827501JE	125K	MC102821253JE	2M	MC102822004JE
10K	MC102821002JE	150K	MC102821503JE	2.5M	MC102822504JE
12.5K	MC102821252JE	200K	MC102822003JE	5M	MC102825004JE
15K	MC102821502JE	250K	MC102822503JE	10M	MC102821005JE
17.5K	MC102821752JE	500K	MC102825003JE	25M	MC102822505JE
20K	MC102822002JE	750K	MC102827503JE	50M	MC102825005JE
25K	MC102822502JE	1M	MC102821004JE		

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Ohmite:

MC102821001J	MC102821001JE	MC102822501J	MC102822501JE	MC102825001J	MC102825001JE
MC102827501J	MC102827501JE	MC102821002J	MC102821002JE	MC102821252J	MC102821252JE
MC102821502J	MC102821502JE	MC102821752J	MC102821752JE	MC102822002J	MC102822002JE
MC102822502J	MC102822502JE	MC102825002J	MC102825002JE	MC102827502J	MC102827502JE
MC102821003J	MC102821003JE	MC102821253J	MC102821253JE	MC102821503J	MC102821503JE
MC102822003J	MC102822003JE	MC102822503J	MC102822503JE	MC102825003J	MC102825003JE
MC102827503J	MC102827503JE	MC102821004J	MC102821004JE	MC102821254J	MC102821254JE
MC102821504J	MC102821504JE	MC102821754J	MC102821754JE	MC102822004J	MC102822004JE
MC102822504J	MC102822504JE	MC102825004J	MC102825004JE	MC102821005J	MC102821005JE
MC102822505J	MC102822505JE	MC102825005J	MC102825005JE	MC102822505FE	MC102521006JER
MC102521003JE	MC102521004JE	MC102521005JE	MC102521006JE	MC102521503JE	MC102521504JE
MC102525003JE	MC102525004JE	MC102525005JE	MC102527503JE	MC102823005J	MC102525004JER
MC102522504JE	MC102522505JE	MC102521505JE	MC102522506JE	MC102521007JE	MC102521506JE