

# 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.

## APPLICATIONS

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

## SPECIFICATIONS

### Material

**Resistor:** Thick film on Alumina

### Electrical

**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:**

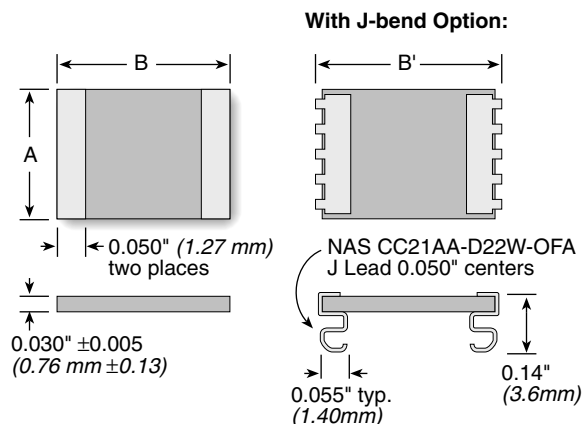
-55°C to +180°C

**TCR and VCR:** see Slim Mox, page 70

**Note:** 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.

## FEATURES

- Non-inductive design
- Low voltage coefficient
- Surface mount
- Pd Ag terminations
- J-bend terminals for applications involving shock and vibration

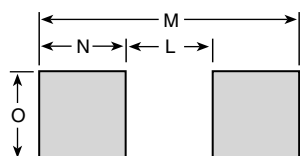


Ohmite Series	Resistance Range (Ohms)	Power @25°C	Voltage Rating	Dimensions (in./mm)			Standard Temperature Coefficient		Qty./Reel	
				A ±.01"	B ±.01"	B' max. (J-bend)	50PPM/°C	100PPM/°C	w/J-bend	w/o J-bend
MC101	100Ω to 1,000M	0.75W	2.0KV	0.25" (6.35)	0.25" (6.35)	0.29" (7.37)	100Ω-100M	101M-1,000M	1000	2500
MC102	200Ω to 5,000M	1.50W	5.0KV	0.25" (6.35)	0.50" (12.70)	0.54" (13.72)	200Ω-250M	251M-5,000M	1000	2500
MC103	250Ω to 5,000M	2.00W	7.5KV	0.25" (6.35)	0.75" (19.05)	0.79" (20.07)	250Ω-100M	101M-5,000M	1000	2500
MC104	1K to 5,000M	2.50W	10.0KV	0.25" (6.35)	1.00" (25.40)	1.04" (26.42)	500Ω-450M	451M-5,000M		
MC202	500Ω to 5,000M	2.50W	5.0KV	0.50" (12.70)	0.50" (12.70)		500Ω-200M	201M-5,000M		
MC204	1K to 5,000M	3.25W	10.0KV	0.50" (12.70)	1.00" (25.40)		1K-375M	376M-5,000M		

Contact Ohmite for custom configurations.

## LAND PATTERN (in.)

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

## 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	±0.20%
Power Conditioning	MIL-R-49462A, Par 4.8	±0.50%

## ORDERING INFORMATION

Coating  
2 = Blue silicone E = RoHS compliant

**MC102821006JE**

Macro Chip Series	Style	Terminal	Ohms	Tolerance
	101	8 = No term.	First 3 digits are significant; 4th digit is multiplier (# of zeroes to follow). Examples: 10R2 = 10.2 ohms 1000 = 100 ohms 1503 = 150,000 ohms	D = 0.5% F = 1% G = 2% J = 5% K = 10% M = 15% P = 20%
	102	5 = J-bend		
	103	(use for MC103 and larger)		
	104			
	202			
	204	4 = Edge wrap		

Check product availability at [www.ohmite.com](http://www.ohmite.com)

## STANDARD PART NUMBERS FOR MACROCHIP

Series	MC10282	Series	MC10282	Series	MC10282
Tolerance	5%	Tolerance	5%	Tolerance	5%
Watts	1W	Watts	1W	Watts	1W
Ohms		Ohms		Ohms	
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		