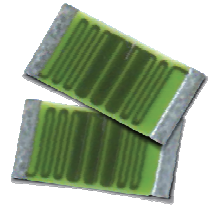


Advantages

Our patented Micropen® precision printing technology provides ultra precision, thick-film high voltage, military grade, surface mount resistors. Our military SMT chips have extended TCR temperature range and are stringently inspected. Ohmcraft's Micropenned serpentine patterned resistors produce superior electrical characteristics:

- **Voltage Ratings to 3500 Volts**
- **Ultra High Stability**
- **TCR to 25 ppm/°C**
- **Resistance Values to 50 Gigohms**
- **Very Low Noise**
- **VCR to 1 ppm/V**
- **Extended TCR Range**
- **Tolerances to 0.1%**
- **Custom Configurations**



Electrical Specifications

Case Size Ratings	TCR (±ppm/°C)	Tolerance							
		0.10%	0.25%	0.50%	1%	2%	5%	10%	20%
0402	50				10K-100M	10K-100M	10K-100M	10K-100M	10K-100M
40mW	100				10K-500M	10K-500M	10K-500M	10K-500M	10K-500M
150V	200				10K-500M	10K-1G	10K-1G	10K-1G	10K-1G
0603	50			10K-10M	10K-100M	10K-500M	10K-500M	10K-500M	10K-500M
60mW	100			10K-10M	10K-500M	10K-1G	10K-1G	10K-10G	10K-10G
400V	200			10K-10M	10K-500M	10K-1G	10K-1G	10K-10G	10K-50G
0805	50			10K-10M	10K-500M	10K-500M	10K-500M	10K-500M	10K-500M
200mW	100			10K-10M	10K-1G	10K-1G	10K-1G	10K-1G	10K-1G
600V	200			10K-10M	10K-1G	10K-1G	10K-10G	10K-50G	10K-50G
1206	25	1M-10M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M
330mW	50	100K-10M	100K-100M	100K-500M	100K-500M	100K-500M	100K-500M	100K-500M	100K-500M
1200V	100	10K-10M	10K-100M	10K-500M	10K-1G	10K-1G	10K-1G	10K-1G	10K-1G
	200	10K-10M	10K-100M	10K-500M	10K-10G	10K-10G	10K-10G	10K-10G	10K-10G
2010	25	1M-10M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M
1W	50	100K-10M	100K-100M	100K-500M	100K-500M	100K-500M	100K-500M	100K-500M	100K-500M
1700V	100	10K-10M	10K-100M	10K-500M	10K-1G	10K-1G	10K-1G	10K-1G	10K-1G
	200	10K-10M	10K-100M	10K-500M	10K-10G	10K-10G	10K-10G	10K-10G	10K-10G
2512	25	1M-100M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M
2W	50	100K-100M	100K-500M	100K-1G	100K-1G	100K-1G	100K-1G	100K-1G	100K-1G
2500V	100	10K-100M	10K-500M	10K-1G	10K-10G	10K-10G	10K-10G	100K-50G	100K-50G
	200	10K-100M	10K-500M	10K-1G	10K-10G	10K-10G	10K-10G	100K-50G	100K-50G
3512	25	1M-100M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M
3W	50	100K-100M	100K-500M	100K-1G	100K-1G	100K-1G	100K-1G	100K-1G	100K-1G
3500V	100	10K-100M	10K-500M	10K-1G	10K-10G	10K-10G	10K-10G	100K-50G	100K-50G
	200	10K-100M	10K-500M	10K-1G	10K-10G	10K-10G	10K-10G	100K-50G	100K-50G

The continuous maximum applied voltage cannot exceed the maximum power rating and is ohmic value dependent.

Value range is case size dependent.

For parts below 10K, consult factory.

Other available case sizes: 0403, 0502, 0503, 0504, 1004, 1005, 1210, 1505, 2208, 2510, 5010.

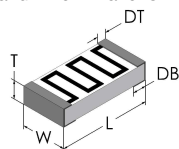
How to Order

MCH	+		+		+		+		+		
Type		Case Size		TCR		Value		Tolerance		Termination	Packaging
Military Grade High Voltage Chips		See dimension table. Custom case sizes are available. Please consult factory.		E ±25ppm/°C H ±50ppm/°C K ±100ppm/°C L ±200ppm/°C		Resistance value expressed as a four digit number, where the first three numbers are the significant value, and the fourth number is the number of zeroes.		B ±0.1% C ±0.25% D ±0.5% F ±1.0% G ±2.0% J ±5.0% K ±10% L ±20%		T Solderable wraparound matte tin Sn99.9 on nickel barrier, RoHS B Solderable wraparound Sn63Pb37 solder over nickel barrier Z Solderable single surface tin Sn99.9 on nickel barrier, RoHS S Solderable single surface Sn63Pb37, flip-chip G Wire bondable gold, Au, RoHS	BU Bulk TR Tape & Reel FP Flat Pack

Chip Dimensions

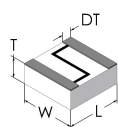
Wrap-around

B and T Terminations



Bondable

G, Z, and S Terminations



Case Size	Length	Width	Thickness (Max.)	DT	DB	Units
0402	40±5 1.02±0.13	20±3 0.51±0.08	20 0.51	8±4 0.20±0.10	10 (+2, -4) 0.25 (+0.05, -0.10)	inches mm
0603	63 (+10, -5) 1.60 (+0.25, -0.13)	31±5 0.79±0.13	20 0.51	10±5 0.25±0.13	12±8 0.30±0.20	inches mm
0805	79 (+10, -5) 2.01 (+0.25, -0.13)	50±5 1.27±0.13	25 0.64	10±5 0.25±0.13	13±8 0.33±0.20	inches mm
1206	126 (+10, -5) 3.20 (+0.25, -0.13)	63±5 1.60±0.13	30 0.76	10±5 0.25±0.13	20±10 0.51±0.25	inches mm
2010	200 (+10, -5) 5.08 (+0.25, -0.13)	100±5 2.54±0.13	30 0.76	18±10 0.46±0.25	20±10 0.51±0.25	inches mm
2512	250 (+10, -5) 6.35 (+0.25, -0.13)	125±5 3.18±0.13	30 0.76	20±10 0.51±0.25	24±10 0.61±0.25	inches mm
3512	350 (+10, -5) 8.89 (+0.25, -0.13)	125±5 3.18±0.13	30 0.76	20±10 0.51±0.25	24±10 0.61±0.25	inches mm

Other available case sizes: 0403, 0502, 0503, 0504, 1004, 1005, 1210, 1505, 2208, 2510, 5010. Please consult factory.

Typical Performance Characteristics

Test	Maximum ΔR
Short Time Overload	0.1%
Load Life	0.1%
Temperature Cycle	0.1%
Moisture Resistance	0.1%
Shock	0.05%
Vibration	0.05%
Dielectric Withstanding Voltage	0.05%
Resistance to Soldering Heat	0.05%

Parameter	Typical
Operating Temperature	-55°C to 150°C
TCR	measured from -55°C to 125°C
Pulse Capability	10X rated wattage for custom pulse applications consult factory
Resistance Value	Measured at 100V for custom test voltages consult factory

Material Construction

Resistive Element	Thick Film
Substrate	96% Alumina
Encapsulation	Epoxy
Termination	Tin over nickel barrier, lead solder over nickel barrier, or gold

Custom Configurations Available Upon Request

Please consult with our knowledgeable sales staff for help specifying custom parts to meet your needs:

Ph: 585.624.2610
www.ohmcraft.com
 93 Paper Mill St.
 Honeoye Falls, NY 14472
ocsales@micropen.com

Tape and Reel Specifications

Parts are packaged in accordance with EIA-481 tape and reel specifications.

Power Derating Curve

