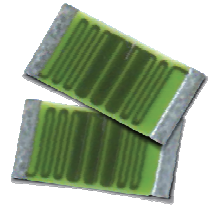


### Advantages

Our patented Micropen® precision printing technology provides ultra precision, thick-film high ohmic value, surface mount resistors. Ohmcraft's Micropenned serpentine patterned resistors produce superior electrical characteristics:

- **Voltage Ratings to 600 Volts**
- **Ultra High Stability**
- **TCR to 25 ppm/°C**
- **Resistance Values to 50 Gigohms**
- **Very Low Noise**
- **VCR to 1 ppm/V**
- **Tolerances to 0.1%**
- **Custom Configurations**



### Electrical Specifications

Case Size	TCR	Tolerance							
Ratings	(±ppm/°C)	0.10%	0.25%	0.50%	1%	2%	5%	10%	20%
<b>0402</b> 40mW 50V	50				10K-100M	10K-100M	10K-100M	10K-100M	10K-100M
	100				10K-500M	10K-500M	10K-500M	10K-500M	10K-500M
	200				10K-500M	10K-1G	10K-1G	10K-1G	10K-1G
<b>0603</b> 60mW 100V	50			10K-10M	10K-100M	10K-500M	10K-500M	10K-500M	10K-500M
	100			10K-10M	10K-500M	10K-1G	10K-1G	10K-1G	10K-1G
	200			10K-10M	10K-500M	10K-1G	10K-1G	10K-1G	10K-50G
<b>0805</b> 200mW 125V	50			10K-10M	10K-500M	10K-500M	10K-500M	10K-500M	10K-500M
	100			10K-10M	10K-1G	10K-1G	10K-1G	10K-1G	10K-1G
	200			10K-10M	10K-1G	10K-1G	10K-1G	10K-50G	10K-50G
<b>1206</b> 330mW 200V	25	1M-10M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M
	50	100K-10M	100K-100M	100K-500M	100K-500M	100K-500M	100K-500M	100K-500M	100K-500M
	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-1G	10K-1G	10K-1G	10K-1G	10K-10G
<b>2010</b> 1W 300V	25	1M-10M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M
	50	100K-10M	100K-100M	100K-500M	100K-500M	100K-500M	100K-500M	100K-500M	100K-500M
	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-1G	10K-1G	10K-1G	10K-1G	10K-10G
<b>2512</b> 2W 350V	25	1M-100M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M
	50	100K-100M	100K-500M	100K-1G	100K-1G	100K-1G	100K-1G	100K-1G	100K-1G
	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
<b>3512</b> 3W 600V	25	1M-100M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M
	50	100K-100M	100K-500M	100K-1G	100K-1G	100K-1G	100K-1G	100K-1G	100K-1G
	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.

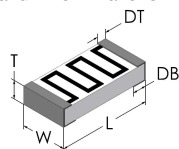
Other available case sizes: 0403, 0502, 0503, 0504, 1004, 1005, 1210, 1505, 2208, 2510, 5010.

### How to Order

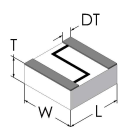
<b>SM</b>	+		+		+		+		+		
<b>Type</b>		<b>Case Size</b>		<b>TCR</b>		<b>Value</b>		<b>Tolerance</b>		<b>Termination</b>	<b>Packaging</b>
Surface Mount, High Resistance Chips		See dimension table.  Custom case sizes are available. Please consult factory.		E ±25ppm/°C H ±50ppm/°C K ±100ppm/°C L ±200ppm/°C		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
<b>0402</b>	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
<b>0603</b>	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
<b>0805</b>	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
<b>1206</b>	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
<b>2010</b>	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
<b>2512</b>	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
<b>3512</b>	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 25°C to 75°C
Resistance Value	Measured at 100V for custom test voltages consult factory

## Material Construction

<b>Resistive Element</b>	Thick Film
<b>Substrate</b>	96% Alumina
<b>Encapsulation</b>	Epoxy
<b>Termination</b>	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

