

### Advantages

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

- Voltage Ratings to 5000 Volts
- Ultra High Stability
- TCR to 25 ppm/°C
- Resistance Values to 50 Gighms
- Very Low Noise
- VCR to 1 ppm/V
- 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 40mW 150V	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	
0603 60mW 400V	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-10G	
0805 200mW 600V	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-10G	10K-10G	10K-50G	
1206 330mW 1500V	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-10G	10K-10G	10K-10G	10K-50G	
2010 1W 2000V	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-10G	10K-10G	10K-10G	10K-50G	
2512 2W 3000V	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	10K-10G	100K-10G	
	200	10K-100M	10K-500M	10K-1G	10K-10G	10K-10G	10K-10G	10K-10G	100K-50G	
3512 2W 3500V	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	10K-10G	100K-10G	
	200	10K-100M	10K-500M	10K-1G	10K-10G	10K-10G	10K-10G	10K-10G	100K-50G	
4020 2W 4000V	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	10K-10G	100K-10G	
	200	10K-100M	10K-500M	10K-1G	10K-10G	10K-10G	10K-10G	10K-10G	100K-50G	
5020 2W 5000V	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	10K-10G	100K-10G	
	200	10K-100M	10K-500M	10K-1G	10K-10G	10K-10G	10K-10G	10K-10G	100K-50G	

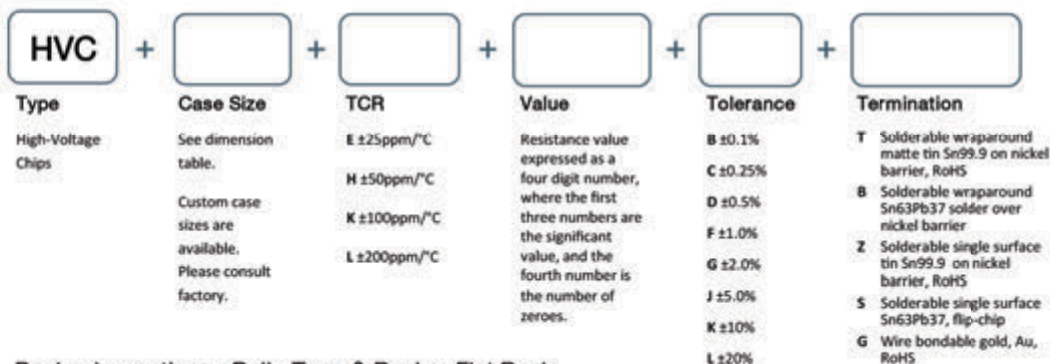
The continuous maximum applied voltage cannot exceed the maximum power rating and is ohmic value dependent.

Value range is case size dependent.

Standard case sizes: 0402, 0403, 0502, 0504, 0603, 0805, 1004, 1005, 1206, 1210, 1505, 2010, 2208, 2510, 2512, 3512, 4020, 5020.

For custom sizes and configurations, consult factory.

### How to Order



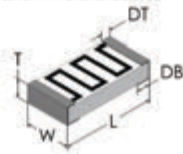
Packaging options: Bulk, Tape & Reel or Flat Pack



## Chip Dimensions

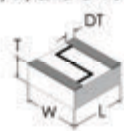
### Wrap-around

B and T Terminations



### Bondable

G, Z, and S Terminations



Case Size	Length	Width	Thickness (Max.)	DT	DB	Units
0402	0.040 ±0.005	0.020 ±0.003	0.020	0.008 ±0.004	0.010 +0.002/-0.004	inches
	1.02 ±0.13	0.51 ±0.08	0.51	0.20 ±0.10	0.25 +0.05/-0.10	mm
0603	0.063 +0.01/-0.005	0.031 ±0.005	0.020	0.010 ±0.005	0.012 ±0.008	inches
	1.60 +0.25/-0.13	0.79 ±0.13	0.51	0.25 ±0.13	0.30 ±0.20	mm
0805	0.079 +0.01/-0.005	0.050 ±0.005	0.025	0.010 ±0.005	0.013 ±0.008	inches
	2.01 +0.25/-0.13	1.27 ±0.13	0.64	0.25 ±0.13	0.33 ±0.20	mm
1206	0.126 +0.01/-0.005	0.063 ±0.005	0.030	0.010 ±0.005	0.020 ±0.010	inches
	3.20 +0.25/-0.13	1.60 ±0.13	0.76	0.25 ±0.13	0.51 ±0.25	mm
2010	0.200 +0.01/-0.005	0.100 ±0.005	0.030	0.018 ±0.010	0.020 ±0.010	inches
	5.08 +0.25/-0.13	2.54 ±0.13	0.76	0.46 ±0.25	0.51 ±0.25	mm
2512	0.250 +0.01/-0.005	0.125 ±0.005	0.030	0.020 ±0.010	0.024 ±0.010	inches
	6.35 +0.25/-0.13	3.18 ±0.13	0.76	0.51 ±0.25	0.61 ±0.25	mm
3512	0.350 +0.01/-0.005	0.125 ±0.005	0.030	0.020 ±0.010	0.024 ±0.010	inches
	8.89 +0.25/-0.13	3.18 ±0.13	0.76	0.51 ±0.25	0.61 ±0.25	mm
4020	0.400 +0.01/-0.005	0.200 ±0.005	0.030	0.025 ±0.010	0.030 ±0.010	inches
	10.16 +0.25/-0.13	5.08 ±0.13	0.76	0.64 ±0.25	0.76 ±0.25	mm
5020	0.500 +0.01/-0.005	0.200 ±0.005	0.030	0.025 ±0.010	0.030 ±0.010	inches
	12.70 +0.25/-0.13	5.08 ±0.13	0.76	0.76 ±0.25	0.76 ±0.25	mm

Other available case sizes: 0403, 0502, 0504, 1004, 1005, 1210, 1505, 2208, 2510, and custom. 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
Pulse Capability	10X rated wattage For custom pulse applications consult factory
Resistance Value	Values > 10M are measured at 100 VDC 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:

E: [sales@ohmcraft.com](mailto:sales@ohmcraft.com)  
 P: 585.624.2610  
[www.ohmcraft.com](http://www.ohmcraft.com)  
 93 Paper Mill St.  
 Honeoye Falls, NY 14472

## Tape and Reel Specifications

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

### Power Derating Curve

