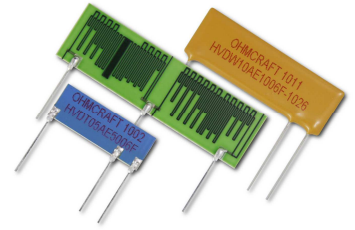


### Advantages

Our patented Micropen® precision printing technology provides superior precision, thick-film resistors. Ohmcrafft's Micropenned resistors produce superior electrical characteristics:

- Voltage Ratings to 40,000 Volts
- Resistance Values to 2,000 Gighoms
- Ratio Tolerances to 0.1%
- TCR to 25 ppm/°C
- TCR Tracking to 5 ppm/°C
- VCR to 0.05 ppm/V
- Very Low Noise
- Ultra High Stability
- Custom Configurations



### Electrical Specifications

Case Size Ratings	TCR (±ppm/°C)	Ratio Tolerance							
		0.10%	0.25%	0.50%	1%	2%	5%	10%	20%
<b>04</b> 500mW 4kV	25	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M
	50	100K-100M	100K-100M	100K-1G	100K-1G	100K-1G	100K-1G	100K-1G	100K-1G
	100	100K-100M	100K-100M	100K-10G	100K-10G	100K-50G	100K-50G	100K-50G	100K-50G
	200	100K-100M	100K-100M	100M-10G	100M-50G	100M-50G	100M-50G	100M-50G	100M-50G
	>200	100K-100M	100K-100M	100M-10G	100M-50G	100M-50G	100M-50G	100M-100G	100M-1T
<b>05</b> 1W 5kV	25	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M
	50	100K-100M	100K-100M	100K-1G	100K-1G	100K-1G	100K-1G	100K-1G	100K-1G
	100	100K-100M	100K-100M	100K-10G	100K-10G	100K-50G	100K-50G	100K-50G	100K-50G
	200	100K-100M	100K-100M	100M-10G	100M-50G	100M-50G	100M-50G	100M-50G	100M-50G
	>200	100K-100M	100K-100M	100M-10G	100M-50G	100M-50G	100M-50G	100M-100G	100M-1T
<b>10</b> 1W 10kV	25	1M-100M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M
	50	100K-100M	100K-500M	100K-10G	100K-10G	100K-10G	100K-10G	100K-10G	100K-10G
	100	100K-100M	100K-500M	100K-10G	100K-50G	100K-50G	100K-50G	100K-50G	100K-50G
	200	100K-100M	100K-100M	100M-10G	100M-50G	100M-50G	100M-50G	100M-50G	100M-50G
	>200	100K-100M	100K-500M	100M-10G	100M-50G	100M-50G	100M-100G	100M-1T	100M-1T
<b>20</b> 2W 20kV	25	1M-100M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M
	50	100K-100M	100K-500M	100K-10G	100K-10G	100K-10G	100K-10G	100K-10G	100K-10G
	100	100K-100M	100K-500M	100K-10G	100K-50G	100K-50G	100K-50G	100K-50G	100K-50G
	200	100K-100M	100K-100M	100M-10G	100M-50G	100M-50G	100M-50G	100M-50G	100M-50G
	>200	100K-100M	100K-500M	100M-10G	100M-50G	100M-50G	100M-100G	100M-1T	100M-1T
<b>30</b> 3W 30kV	25	1M-100M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M
	50	100K-100M	100K-500M	100K-10G	100K-10G	100K-10G	100K-10G	100K-10G	100K-10G
	100	100K-100M	100K-500M	100K-10G	100K-50G	100K-50G	100K-50G	100K-50G	100K-50G
	200	100K-100M	100K-100M	100M-10G	100M-50G	100M-50G	100M-50G	100M-50G	100M-50G
	>200	100K-100M	100K-500M	100M-10G	100M-50G	100M-50G	100M-100G	100M-1T	100M-1T
<b>40</b> 6W 40kV	25	1M-100M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M	1M-500M
	50	100K-100M	100K-500M	100K-10G	100K-10G	100K-10G	100K-10G	100K-10G	100K-10G
	100	100K-100M	100K-500M	100K-10G	100K-50G	100K-50G	100K-50G	100K-50G	100K-50G
	200	100K-100M	100K-100M	100M-10G	100M-50G	100M-50G	100M-50G	100M-50G	100M-50G
	>200	100K-100M	100K-500M	100M-10G	100M-50G	100M-50G	100M-100G	100M-1T	100M-1T

Tolerance and value are case size dependent. For values under 100K, please consult factory.

$$\text{Ratio} = (R1+R2)/R2$$

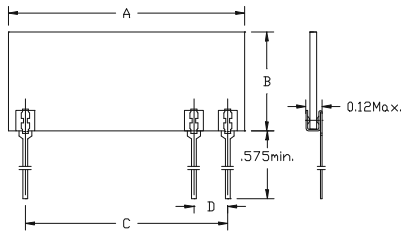
TCR tracking is typically <25% of the absolute TCR to a minimum of 10ppm/°C.

Absolute tolerance is 15% unless otherwise specified.

### How to Order

<b>HVD</b>	+		+		+		+		+		+			
<b>Type</b>		<b>Lead Style</b>		<b>Case Size</b>		<b>Ratio</b>		<b>Absolute TCR</b>		<b>R Total Value</b>		<b>Ratio Tolerance</b>		<b>Coating</b>
Leaded High Voltage Divider		T Spade Terminal, Sn96Ag4 RoHS Pb free solder S Spade Terminal, Sn60Pb40 solder W Wire, RoHS 99.5 tin plated copper		04 05 10 20 30 40		A 1000:1 B 100:1 C Other		E ±25ppm/°C H ±50ppm/°C K ±100ppm/°C L ±200ppm/°C M ≥±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 zeros.		B ±0.1% C ±0.25% D ±0.5% F ±1.0% G ±2.0% J ±5.0% K ±10% L ±20%		2 Bare 3 Powder Coating 4 Epoxy

## Resistor Dimensions



Wire Leads: 22AWG (0.025")

Spade Leads: 0.01" thick, 0.02" wide, 0.325" minimum length, standoff 0.06" max.

Case Size	A (Length)	B (Height)	C (Nominal)	D (Nominal)	Units
04	0.5 +0.08/-0.03 12.7 +2.03/-0.76	0.375 ±0.03 9.53 ±0.76	0.4 10.16	0.2 5.08	inches mm
05	1.0 +0.08/-0.03 25.4 +2.03/-0.76	0.375 ±0.03 9.53 ±0.76	0.9 22.86	0.2 5.08	inches mm
10	1.5 +0.08/-0.03 38.1 +2.03/-0.76	0.5 ±0.03 12.7 ±0.76	1.3 33.02	0.2 5.08	inches mm
20	2.0 +0.08/-0.03 50.8 +2.03/-0.76	0.75 ±0.03 19.05 ±0.76	1.9 48.26	0.2 5.08	inches mm
30	3.0 +0.08/-0.03 76.2 +2.03/-0.76	0.75 ±0.03 19.05 ±0.76	2.9 73.66	0.2 5.08	inches mm
40	4.0 +0.08/-0.03 101.6 +2.03/-0.76	0.75 ±0.03 19.05 ±0.76	3.9 99.06	0.2 5.08	inches mm

For custom case sizes, 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

- Substrate** 96% Alumina
- Coatings** All resistors are glass encapsulated with optional single side epoxy or powder coating.
- Termination** Standard lead material is tin plated copper.

## Custom Selections 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

## Power Derating Curve

