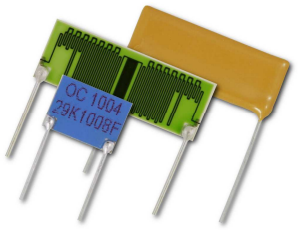
HVR Series
High Voltage Leaded Resistors

Advantages

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

- **Voltage Ratings to 40,000 Volts**
- **Resistance Values to 4,000 Gigohms**
- **Ultra High Stability**
- **Very Low Noise**
- **Tolerances to 0.1%**
- **TCR to 10 ppm/°C**
- **VCR to 0.05 ppm/V**
- **Custom Configurations**



Electrical Specifications

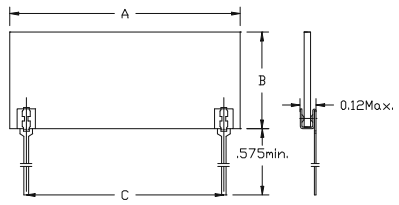
Case Size Ratings	TCR (±ppm/°C)	Tolerance 0.10%	0.25%	0.50%	1%	2%	5%	10%	20%
29 500mW 2kV	25	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M	1M-100M
	50	100K-100M	100K-100M	100K-1G	100K-1G	100K-1G	100K-1G	100K-1G	100K-1G
	100	100K-100M	100K-100M	100K-10G	100K-10G	100K-50G	100K-50G	100K-50G	100K-50G
	200	100K-100M	100K-100M	100K-10G	100M-50G	100M-50G	100M-50G	100M-50G	100M-50G
	>200	100K-100M	100K-100M	100K-10G	100M-50G	100M-50G	100M-50G	100M-100G	100M-1T
39 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	100K-10G	100M-50G	100M-50G	100M-50G	100M-50G	100M-50G
	>200	100K-100M	100K-100M	100K-10G	100M-50G	100M-50G	100M-50G	100M-100G	100M-1T
21 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-100M	100M-10G	100M-50G	100M-50G	100M-100G	100M-1T	100M-1T
42 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-100M	100M-10G	100M-50G	100M-50G	100M-100G	100M-1T	100M-1T
43 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-100M	100M-10G	100M-50G	100M-50G	100M-100G	100M-1T	100M-1T
56 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-100M	100M-10G	100M-50G	100M-50G	100M-100G	100M-1T	100M-1T

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 100K, consult factory.
For custom case sizes, consult factory.

How to Order

HVR	+		+		+		+		+		+	
Type		**Lead Style**		**Case Size**		**TCR Rating**		**Total R Value**		**Tolerance**		**Coating**
Leaded High Voltage Resistor		**T** Spade Terminal, Sn96Ag4 RoHS Pb free solder **S** Spade Terminal, Sn60Pb40 solder **W** Wire, RoHS 99.5 tin plated copper		39 29 21 42 43 56		**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 (Lead Spacing)	Units
39	0.3 +0.08/-0.03 7.62 +2.03/-0.76	0.4 ±0.03 10.16 ±0.76	0.2 5.08	inches mm
29	0.5 +0.08/-0.03 12.7 +2.03/-0.76	0.375 ±0.03 9.53 ±0.76	0.4 10.16	inches mm
21	1.0 +0.08/-0.03 25.4 +2.03/-0.76	0.375 ±0.03 9.53 ±0.76	0.9 22.86	inches mm
42	2.0 +0.08/-0.03 50.8 +2.03/-0.76	0.5 ±0.03 12.7 ±0.76	1.9 48.26	inches mm
43	3.0 +0.08/-0.03 76.2 +2.03/-0.76	0.5 ±0.03 12.7 ±0.76	2.9 73.66	inches mm
56	4.0 +0.08/-0.03 101.6 +2.03/-0.76	0.75 ±0.03 19.05 ±0.76	3.9 99.06	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.

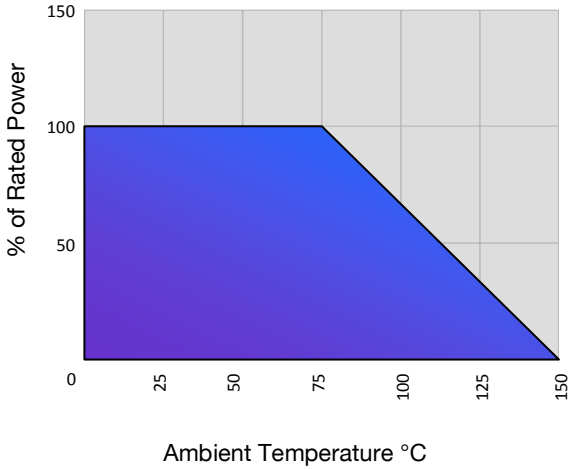
Termination Standard lead material is tin plated copper.

Custom Selections Available Upon Request

Please consult with our knowledgable 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



ohmcraft
A DIVISION OF MICROPEN TECHNOLOGIES

© 2010 Micropen Technologies Corporation.