

Features

- Special conductive film withstands high voltage
- Maximum working voltage far over that of general-purpose resistors
- Suitable for applications such as TV's, high voltage power supply, and high voltage detection.
- Entire series is VDE0860 (EN60065) approved under license number 40011593
- Products meet RoHS requirements and do not contain substances of very high concern identified by European Chemicals Agency

DIMENSIONS

Type	Body Length (L, mm)	Body Diameter (D, mm)	Lead Wire Length (H, mm)	Lead Wire Diameter (d, mm)	Net Weight Per 1000Pcs
HVR25	6.50 ± 1.0	2.6 ± 0.3	26 ± 3.0	0.55 ± 0.03	300 Grams
HVR50	8.80 ± 1.0	3.2 ± 0.2	28 ± 3.0	0.60 ± 0.03	340 Grams
HVR100	15.5 ± 1.0	5.5 ± 0.5	30 ± 3.0	0.80 ± 0.03	1200 Grams
HVR200	19.0 ± 1.0	6.0 ± 0.5	30 ± 3.0	0.80 ± 0.03	1620 Grams
HVR300	24.0 ± 1.0	8.0 ± 0.5	30 ± 3.0	0.80 ± 0.03	3100 Grams

GENERAL SPECIFICATIONS

Type	Power Rating (at 70°C)	Maximum Working Voltage	Maximum Overload Voltage	Minimum Resistance	Maximum Resistance	Resistance Tolerance	Available Resistance Values
HVR25	1/4W	1.6KV DC 1150V RMS	3KV DC 2KV RMS	91KΩ	24MΩ	± 5%	E-24
						± 1%	E-24/E-96
HVR50	1/2W	3.5KV DC 2.5KV RMS	7KV DC 5KV RMS	100KΩ	33MΩ	± 5%	E-24
						± 1%	E-24/E-96
HVR100	1W	10KV DC 7KV RMS	20KV DC 14KV RMS	100KΩ	68MΩ	± 5%	E-24
						± 1%	E-24/E-96
HVR200	2W	11KV DC 8KV RMS	20KV DC 15KV RMS	100KΩ	100MΩ	± 5%	E-24
						± 1%	E-24/E-96
HVR300	3W	12KV DC 8.5KV RMS	20KV DC 15KV RMS	100KΩ	100MΩ	± 5%	E-24
						± 1%	E-24/E-96

Other sizes and values available on request.

HVR

High Voltage Resistor

Quality • Reliability
Cost-Down via Technology

■ PART NUMBER

Example: HVR200J10M0TKZTB500

HVR200	J	10M0	TKZ	TB500
Type	Tolerance*	Resistance	TCR	Packaging
	F (1%) G (2%) J (5%)	10MΩ 4-character code containing - 3 significant digits 1 letter multiplier <u>MULTIPLIER</u> R = 1 K = 10 ³ M = 10 ⁶ G = 10 ⁹	3-character code TKZ = Default Product Temperature Coefficient. Information of typical product temperature coefficient can be found in the Technical Summary section of the datasheet.**	5-character code TB = Tape Box (pieces per box) <u>HVR25/HVR50</u> 2K0 = 2,000 <u>HVR100/200</u> 500 = 500 <u>HVR300</u> 250 = 250

* Listed values may not be applicable across the product series/all resistance values. Please check with us before placing order.

** For the availabilities of non-default temperature coefficient, please check with us. Reference for TCR letter codes can be found in section (4) of Part Number Construction in the Appendices.

■ TECHNICAL SUMMARY

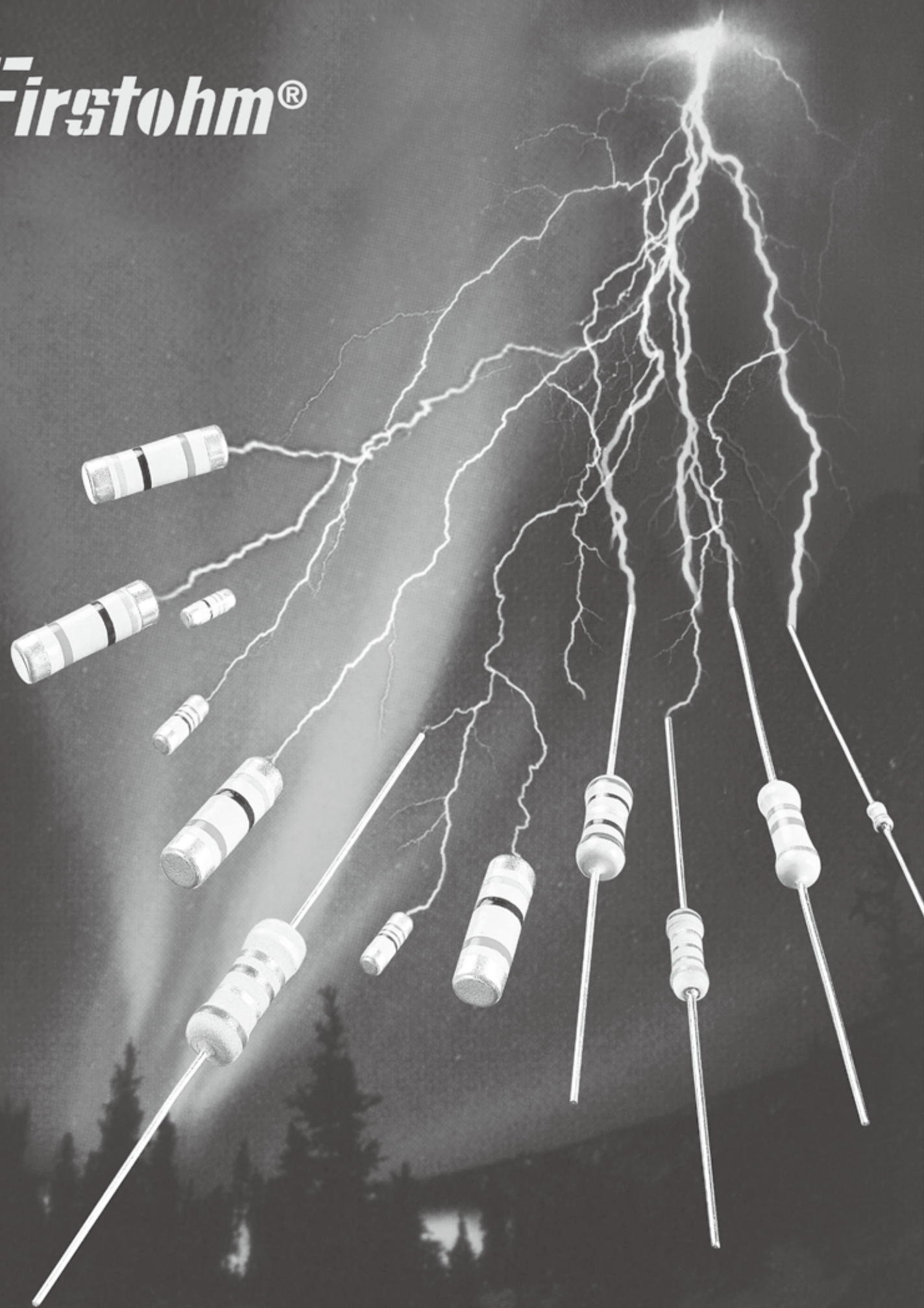
Characteristics	Limits
Power Derating, Linear	100% at < 70°C, zero at 155°C
Dielectric Withstanding Voltage, VAC or DC	HVR25: 500
	HVR50, HVR100: 700
	HVR200: 800
	HVR300: 1000
Temperature Coefficient, PPM / °C*	±200, ±400, ±800
Operating Temperature Range, °C	-55 ~ +155
Insulation Resistance, MΩ	>10 ⁴

* Not applicable to all resistance values. Please check with us regarding the PPM of specific resistance value(s).

■ PERFORMANCE SPECIFICATIONS

Characteristics	Test Conditions	Limits	
Short Time Over Load	IEC 60115-1 4.13 5 seconds 2.5x rated voltage (not over max. overload voltage)	± 1%	
Load Life In Humidity	IEC 60115-1 4.24 56 days rated load at (40±2)°C and (93±3)% relative humidity	± 5%	
Load Life 1,000 hours	IEC 60115-1 4.25.1 Rated load with 1.5 hours ON, 0.5 hours OFF, at (70±2)°C	± 5%	
Resistance To Soldering Heat	IEC 60115-1 4.18.2 Leads immersed till 3mm from the body in (260±5)°C solder for 10±1 seconds	± 1%	
Solderability	IEC 60115-1 4.17.2 Solder area covered after (235±3)°C/(2±0.2) seconds with flux applied	95% Min.	
Vibration	IEC 60115-1 4.22 Six hours in each parallel and axial direction with a simple harmonic motion having an amplitude of 0.75mm and 10 to 500 Hz.	± 1%	
Thermal Endurance	IEC 60115-1 4.25.3 1000 hours at 155°C without load	± 1%	
Thermal Shock	IEC 60115-1 4.19 -55°C 30 minutes, +155°C 30minutes, 5 cycles	± 1%	
Surge Test	Surge voltage = $\sqrt{(100 \times P \times R)}$ DC P is power rating, R is resistance value, surge voltage is not more than listed at right. Surge duration = 50ns Period = 1 sec Number of surges = 5000	HVR25: 10KV	5%
		HVR50: 30KV	
		HVR100: 40KV	
		HVR200: 40KV	
		HVR300: 40KV	

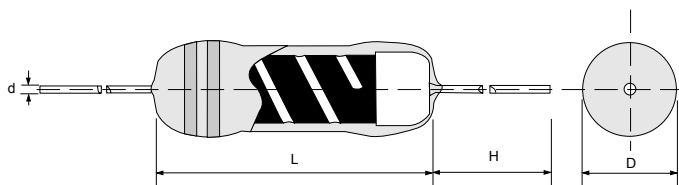
Firstohm®



HVR - High Voltage Resistor (High Power)

Quality • Reliability
Cost-Down via Technology

HVR



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- Products meet RoHS requirements and do not contain substances of very high concern identified by European Chemicals Agency

DIMENSIONS

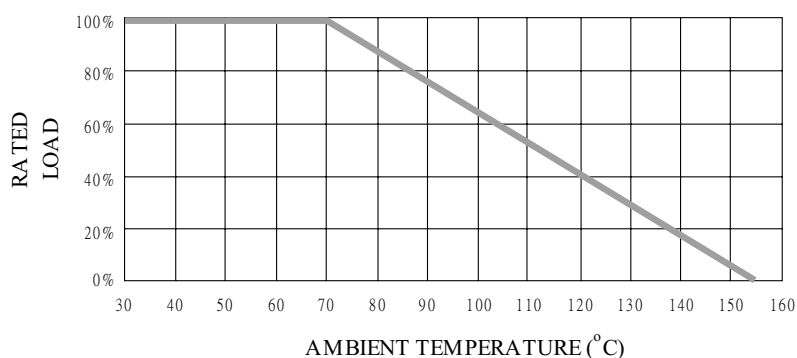
Type	Body Length (L, mm)	Body Diameter (D, mm)	Lead Wire Length (H, mm)	Lead Wire Diameter (d, mm)	Net Weight Per 1000 Pcs
HVR1000	66.0 ± 1.5	8 ± 0.5	39 ± 3.0	0.8 ± 0.03	8200 Grams
HVR1500	66.0 ± 1.5	8 ± 0.5	39 ± 3.0	0.8 ± 0.03	8200 Grams

GENERAL SPECIFICATIONS

Type	Power Rating (at 70°C)	Maximum Working Voltage	Maximum Overload Voltage	Minimum Resistance	Maximum Resistance	Resistance Tolerance	Available Resistance Values
HVR1000	10W	35KV DC	50KV DC	100KΩ	100MΩ	± 5%	E-24
						± 1%	E-96
HVR1500	15W	35KV DC	50KV DC	100KΩ	100MΩ	± 5%	E-24
						± 1%	E-96

Other sizes and values available on request.

POWER DERATING CURVE



TECHNICAL SUMMARY

Characteristics	Limits
Dielectric Withstanding Voltage, VAC or DC	1000
Temperature Coefficient, PPM / °C*	±800
Operating Temperature Range, °C	-55 ~ +155
Insulation Resistance, MΩ	>10 ⁴

* Not applicable to all resistance values. Please check with us regarding the PPM of specific resistance value(s).

HVR - High Voltage Resistor (High Power)

■ PART NUMBER

Example: HVR1000J100KTKZBK100

HVR1000	J	100K	TKZ	BK100
Type	Tolerance*	Resistance	TCR	Packaging
	F (1%) G (2%) J (5%)	100KΩ 4-character code containing - 3 significant digits 1 letter multiplier <u>MULTIPLIER</u> R = 1 K = 10 ³ M = 10 ⁶ G = 10 ⁹	3-character code TKZ = Default Product Temperature Coefficient. Information of typical product temperature coefficient can be found in the Technical Summary section of the datasheet.**	Bulk 100 pieces 5-character code BK = Bulk BK + Quantity

* Listed values may not be applicable across the product series/all resistance values. Please check with us before placing order.

** For the availabilities of non-default temperature coefficient, please check with us. Reference for TCR letter codes can be found in section (4) of Part Number Construction in the Appendices.

■ PERFORMANCE SPECIFICATIONS

Characteristics	Test Conditions	Limits
Short Time Over Load	IEC 60115-1 4.13 5 seconds 2.5x rated voltage (not over max. overload voltage)	±2%
Load Life In Humidity	IEC 60115-1 4.24 56 days rated load at (40±2)°C and (93±3)% relative humidity	±5%
Load Life 1,000 hours	IEC 60115-1 4.25.1 Rated load with 1.5 hours ON, 0.5 hours OFF, at (70±2)°C	±5%
Resistance To Soldering Heat	IEC 60115-1 4.18.2 Leads immersed till 3mm from the body in (260±5)°C solder for 10±1 seconds	±1%
Solderability	IEC 60115-1 4.17.2 Solder area covered after (235±3)°C/(2±0.2) seconds with flux applied	95% Min.
Vibration	IEC 60115-1 4.22 Six hours in each parallel and axial direction with a simple harmonic motion having an amplitude of 1.52mm and 10 to 2,000 Hz.	±1%
Thermal Endurance	IEC 60115-1 4.25.3 1000 hours at 155°C without load	±1%
Thermal Shock	IEC 60115-1 4.19 -55°C 30minutes, +155°C 30minutes, 5 cycles	±2%
Surge Test	Surge voltage = $\sqrt{(100 \times P \times R)}$ DC P is power rating, R is resistance value, surge voltage is not more than 80KV Surge duration = 50ns Period = 1 sec Number of surges = 5000	5%