

# High Value / High Voltage Resistor

## Type HVR Series

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Tyco Electronics is a leading European supplier of high specification power resistors for specialist applications. The HVR range consists of high power, high voltage resistors capable of operating up to 50kV (continuous) and dissipating 50W in air or 100W oil. The thick film resistor element is designed to minimise inductance and capacitance giving optimum performance at MHz frequencies, and resistance to high voltage surges. The resistors are made from quality materials for optimum reliability and stability. Tyco Electronics can test resistors to conform to relevant international, MIL or customer specifications. Tyco Electronics is happy to advise on the use of resistors for pulse applications and to supply information for high voltage use and low-ohmic value, alternative mountings and termination type.

### Key Features

- **Highly Versatile Product**
  - Resistance values from 2kΩ to 1GΩ and a range of mounting options
- **50 kV Continuous Operating Voltage**
  - Unique specification for the most demanding applications
- **Low Inductance and Capacitance**
  - For high frequency applications into the MHz range
- **Established Product**
  - High stability with proven reliability

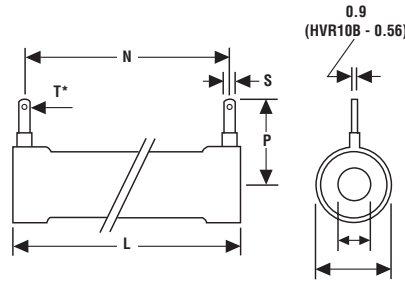
### Applications

- High Frequency Switching (MHz)
- Balancing
- Voltage Divider
- High Voltage

### Characteristics - Electrical

	HVR10	HVR20	HVR30	HVR50
<b>Ohmic Value Min (Ω):</b>	2k0	2k0	2k0	2k0
<b>Max:</b>	1G0	1G0	1G0	1G0
<b>Resistor Tolerance - Standard (%):</b>	10%	10%	10%	10%
<b>Options (R&lt;400M):</b>	5%, 1%	5%, 1%	5%, 1%	5%, 1%
<b>Power Dissipation at 20°C (W):</b>	5W	15W	25W	50W
<b>At 70°C:</b>	3W	10W	15W	25W
<b>In Oil at 20°C:</b>	10W	30W	50W	100W
<b>Continuous Operating Voltage Max (V):</b>	10kV	20kV	30kV	50kV
<b>Temperature Coefficient of Resistance</b>				
<b>20°C to 70°C (ppm/°C):</b>	< ±300ppm/°C	< ±300ppm/°C	< ±300ppm/°C	< 300ppm/°C
<b>Voltage Coefficient of Resistance - V &gt; 100V (%):</b>	< ±2%	< ±2%	< ±2%	< ±2%
<b>Stability ΔR - 1000h Load Life (%):</b>	< ±2%	< ±2%	< ±2%	< ±2%

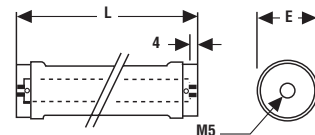
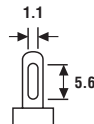
### Dimensions Style B



### Style C



### Style D



### Style B

Type	A	E	L	N	P	S	T
HVR10	6.3	12.0	60.0	53.2	18.2	28	-
HVR20	10.0	22.6	120.0	109.0	27.0	4.8	2.4
HVR30	17.5	30.6	120.0	109.0	34.0	6.3	3.1
HVR50	17.5	30.6	240.0	229.0	34.0	6.3	3.1

### Style C

Type	A	E	L	N	P	S	T
HVR10	6.3	10.5	60.0	-	-	-	-
HVR20	10.0	20.2	120.0	-	-	-	-
HVR30	17.5	28.2	120.0	-	-	-	-
HVR50	17.5	28.2	240.0	-	-	-	-

### Style D

Type	A	E	L	N	P	S	T
HVR10	6.3	10.0	70.0	-	-	-	-
HVR20	10.0	21.5	140.0	-	-	-	-
HVR30	17.5	30.0	140.0	-	-	-	-
HVR50	17.5	30.0	260.0	-	-	-	-

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**Derating Curve**



**Surface Temperature Rise**



**How to Order**

HVR	10	B	2K	J
<b>Common Part</b>	<b>Voltage Rating</b>	<b>Terminal Style</b>	<b>Resistance Value</b>	<b>Tolerance</b>
HVR- Aluminium Housed Power Resistor	10 - 10kV 20 - 20kV 30 - 30kV 50 - 50kV	B - Steel Lugs C - Silver Ferrule D - Tapped Brass Ferrule	2kΩ (2000Ω) 2K 1MΩ (1x10 <sup>6</sup> Ω) 1M0 1GΩ (1x10 <sup>9</sup> Ω) 1G0	F - 1% G - 2% E - 3% J - 5% K - 10%