

**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

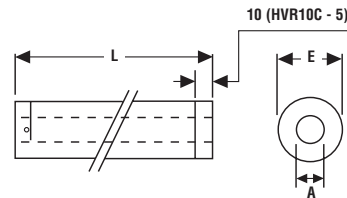
**Characteristics - Electrical**

|   | 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%       |

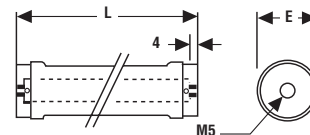
**Dimensions Style B**



**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**

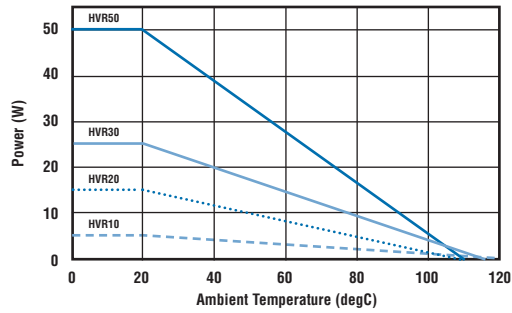
| Type  | A    | E    | L     | N | P | S | T |
|-------|------|------|-------|---|---|---|---|
| HVR10 | 6.3  | 10.5 | 60.0  | - | - | - | - |
| HVR20 | 10.0 | 20.2 | 120.0 | - | - | - | - |
| HVR30 | 17.5 | 28.2 | 120.0 | - | - | - | - |
| HVR50 | 17.5 | 28.2 | 240.0 | - | - | - | - |

**Style D**

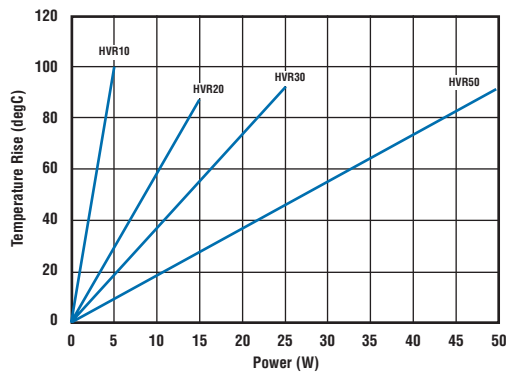
| Type  | A    | E    | L     | N | P | S | T |
|-------|------|------|-------|---|---|---|---|
| HVR10 | 6.3  | 10.0 | 70.0  | - | - | - | - |
| HVR20 | 10.0 | 21.5 | 140.0 | - | - | - | - |
| HVR30 | 17.5 | 30.0 | 140.0 | - | - | - | - |
| HVR50 | 17.5 | 30.0 | 260.0 | - | - | - | - |

**Type HVR Series**

**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<br>20 - 20kV<br>30 - 30kV<br>50 - 50kV | B - Steel Lugs<br>C - Silver Ferrule<br>D - Tapped Brass Ferrule | 2kΩ (2000Ω)<br>2K<br>1MΩ (1x10 <sup>6</sup> Ω)<br>1M0<br>1GΩ (1x10 <sup>9</sup> Ω)<br>1G0 | F - 1%<br>G - 2%<br>E - 3%<br>J - 5%<br>K - 10% |

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