Aluminium Housed Power Resistors

Type HPV Series

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Tyco Electronics is the leading European supplier of standard and custom designed aluminium housed resistors for general-purpose use, power supplies, power generation and the traction industry.
The HPV is a range of extremely stable, high quality wire wound resistors capable of dissipating high power in a limited space with relatively low surface temperatures. The power is rapidly dissipated as heat through the aluminium housing to a specified heat sink. The element assembly is housed within an aluminium extrusion and is insulated by a mineral material, providing better pulse handling capabilities. The HPV resistors have been designed for the power generation industry but are increasingly finding applications in locomotive and other industrial markets where high power, long life and exacting pulse requirements are key design parameters.
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 and alternative termination types.

Key Features

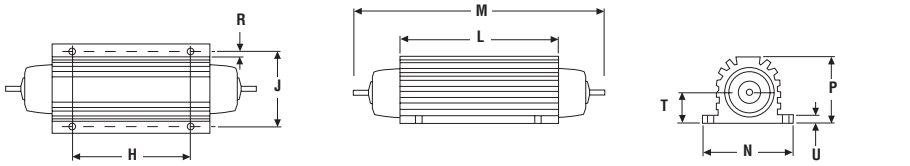
- **Up to 1000W power dissipation**
  - **Use a single resistor in applications where multiples were used before**
- **High pulse energy absorption**
  - **Mineral filled to handle up to 7000joules**
- **6.5kV voltage isolation**
  - **Meets tough specifications with a factor of safety**
- **Proven reliability**
  - **1000Watts with HS reliability**
- **Custom designs: Windings, terminations**
  - **We have a solution for your application**

Characteristics - Electrical

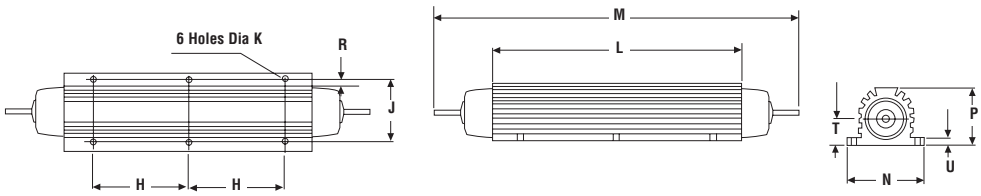
	HPV500	HPV1000
Dissipation @ 25°C with Heatsink (Watts) (Maximum continuous):	500	1000
Without Heatsink:	100	200
Ohmic Value Min (Ohms):	0R5	1R0
Max:	33K	50K
Limiting Element Voltage (Volts) (DC/AC rms) (For continuous operation):	2.5kV	2.5kV
Dielectric Strength (Volts) (AC rms):	6.5kV	6.5kV
Pulsed Voltage (Volts) (1.2/50ms):	12kV	12kV
Insulation Resistance @ 500V (Ohms>10GΩ):	>10GΩ	
Stability (% resistance change, 1000 hours)(%):	≤ 2%	≤ 2%
Temperature Coefficient (ppm/°C):	<±100ppm/°C	<±100ppm/°C
Environmental Category:	-55/200/56	-55/200/56
Creep (mm):	43Min	43Min
Clearance (mm):	20Min	20Min
Long Term Stability:	For improvements in long-term stability, resistors must be derated as follows; for 50% of stated ΔR maximum dissipation must not exceed 70% of rating; for 25% of stated ΔR maximum, dissipation must not exceed 50% of rating.	
Heat Dissipation:	Although the use of proprietary heat sinks with lower thermal resistance is acceptable, up rating is not recommended. The use of proprietary heat sink compound to improve thermal conductivity is essential.	

Dimensions

HPV500



HPV1000



Type	H±0.3	J±0.4	K±0.3	L Max	M Max	N Max	P Max	R Min	T±0.3	U Min
HPV500	76.2	63.5	5.8	136.0	225.0	78.0	58.0	4.0	27.0	5.8
HPV1000	97.0	63.5	5.8	255.0	365.0	78.0	58.0	4.0	27.0	5.8

Note: K refers to mounting hole diameter

Applications

- **High Voltage**
- **Filter**
- **Crowbar**
- **Braking**
- **Balancing**
- **Capacitor Charging & Discharging**
- **Electrical Machinery**

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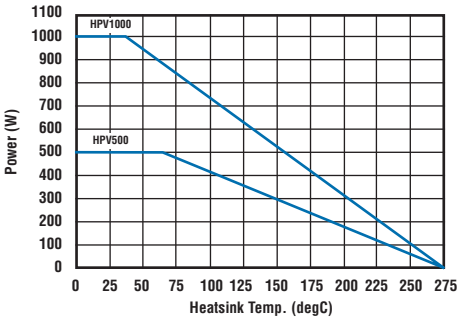
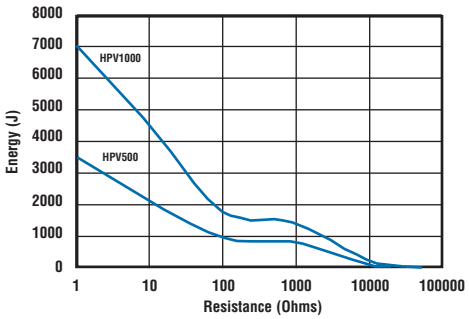
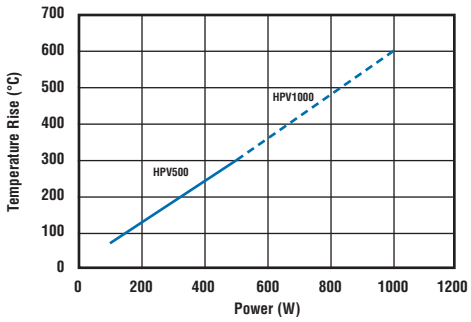
Derating Curve



Pulse Energy



Surface Temperature Rise



How to Order

HPV	500	680R	J
Common Part	**Power Rating**	**Resistance Value**	**Tolerance**
HPV - Aluminium Housed Power Resistor	500 - 500 Watts 1000 - 1000 Watts	0.1ohm (100mΩ) R10 1 ohm (1000mΩ) 1R0 1K (1000Ω) 1K0	F – 1% G – 2% E – 3% J – 5% K – 10%