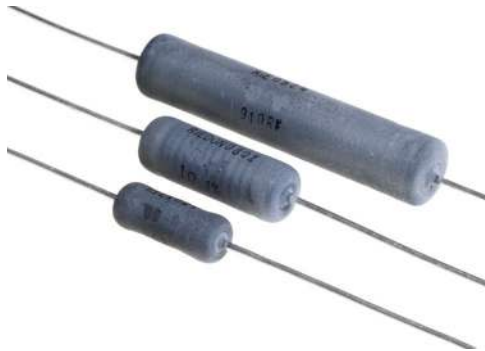


HPP Series

High Pulse Power Wire Wound Resistors



- Superior Pulse Handling Capabilities
- Power Ratings from 3 to 10 watts
- Standard Resistance values from 10 to 20K Ohms
- High Temperature: -55°C to +350°C (“V” Rating)
- Resistance Tolerances to $\pm 2\%$
- Low TCR: $\pm 20\text{ppm}/^\circ\text{K}$ Standard
- Flame Resistant Silicone Coated Power Resistor

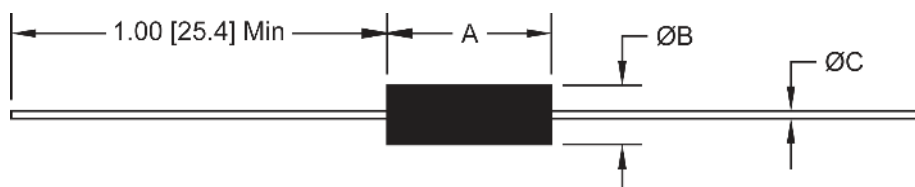
SPECIFICATIONS

Type	Power Rating (Watts) ¹		Available Values Ω^2	Pulse Rating (Joules) ³	Dimensions			Maximum Working Voltage
	U	V			A $\pm 0.062"$ [$\pm 1.6\text{mm}$]	B $\pm 0.031"$ [$\pm 0.8\text{mm}$]	C $\pm 0.002"$ [$\pm 0.05\text{mm}$]	
HPP3	3.0	3.5	10	18	0.500 [12.7]	0.200 [5.1]	0.032 [0.8]	140
			50	5.8				
			500	5.8				
			1000	4.25				
			4500	3				
HPP5	5.0	6.5	500	5.8	0.875 [22.2]	0.312 [7.9]	0.040 [1.0]	360
			1000	11.6				
			4500	19				
			7500	13				
			10000	9.4				
HPP10	10	13	1000	42	1.780 [45.2]	0.375 [9.5]	0.040 [1.0]	850
			4500	52				
			7500	54				
			10000	42				
			20000	34				

¹ Additional power ratings may be available upon request, please consult factory

² Other resistance values may be available upon request, please consult factory

³ Higher ratings are available. Please see information regarding pulse rating at the end of this datasheet



HPP Series

High Pulse Power Wire Wound Resistors



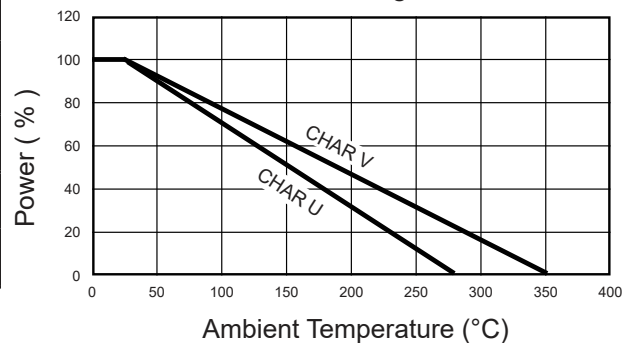
SPECIFICATIONS (continued)

Specification	Value	
Tolerances	±2% to ±10% (5% Standard)	
Temperature Coefficient	>10Ω : ±20ppm/K 1Ω to 10Ω : ±50ppm/K <1Ω : Call Factory	
Temperature Range	-55°C to +275°C : Characteristic U -55°C to +350°C : Characteristic V	
Dielectric Strength	1000 VAC	
Constuction	Centerless ground ceramic core Matte Tin over Copper leads Flame resistant / high temperature / trivalent / inorganic silicone coating All welded terminations	
Environmental Performance (MIL-STD 202)	ΔR	
	Characteristic U	Characteristic V
Dielectric	±0.2% + 0.05Ω	±0.2% + 0.05Ω
Load Life	±1% + 0.05Ω	±3% + 0.05Ω
Storage	±0.2% + 0.05Ω	±2% + 0.05Ω
Moisture Resistance	±0.2% + 0.05Ω	±2% + 0.05Ω
Thermal Shock	±0.2% + 0.05Ω	±2% + 0.05Ω
5X Overload (5s)	±0.2% + 0.05Ω	±2% + 0.05Ω
Shock	±0.1% + 0.05Ω	±0.2% + 0.05Ω
Vibration	±0.1% + 0.05Ω	±0.2% + 0.05Ω

Package Quantities

	Bulk (Standard)	10" Reel	12" Reel	14" Reel
HPP3	1000	500	1000	1500
HPP5	1000	N/A	500	1000
HPP10	1000	N/A	500	750

Power Derating Curve



Ordering Information

Part Description: Part Type - Resistance - Tolerance - T&R (optional)

Example: HPP5 1K 5%

HPP Series

High Pulse Power Wire Wound Resistors



For most applications, wirewound resistors provide the very best pulse handling capabilities, outperforming other resistor technologies. Making the proper component choice is often difficult as resistor manufacturers seldom provide reliable pulse and transient information in their datasheets. In general, Riedon prefers to work directly with our customers to optimize our standard resistors to meet your requirement.

Our pulse rating for the HPP series assumes the pulse is of short duration and all the energy is going into the resistance wire, and doesn't take into account energy dissipated into the rest of the resistor. For longer pulses, heat is transferred to the surrounding materials, so the energy absorbed can be much higher than the value given. In the case of even longer duration pulses, please use the industry standard of five times rated power for five seconds. For example, a 5W resistor can handle 25W for 5 seconds (125 Joules) regardless of package size or resistance value.

The resistance value of a wire wound resistor is determined by three variables: the resistance wire's length, diameter, and resistivity. The pulse rating is directly proportional to the mass of the resistance winding, so it is determined by the same three variables. It is important to emphasize that we can optimize the pulse rating for your specific application by adjusting these three variables.

The following information is needed to determine the required Joule rating:

- Resistance value
- Pulse (determine the energy dissipation required, measured in Joules)
 - Duration (ms)
 - Shape – square, triangular or irregular
 - Single or repetitive
- Peak or steady-state power
- Package type
 - Axial or surface mount

Our engineers have access to over 50 years of experience with wirewound resistors - we urge our customers to take advantage of that background. Contact us when your design depends on an accurate determination of the transient or pulse capability of a resistor. We will work with you to optimize the pulse rating you need.

For the HPP series of resistors the following assumptions are made when stating the Joule rating:

- Short duration pulse (< 10mSec)
- Energy calculation is for a single pulse, or a repetitive pulse where there is sufficient time for the resistor to return to ambient temperature
- No energy is absorbed by the coating material and core, it is purely adiabatic
- Temperature of the resistance material is 25°C before pulse, and 450°C after the pulse. This gives a 50% safety factor on the pulse rating to account for manufacturing variances