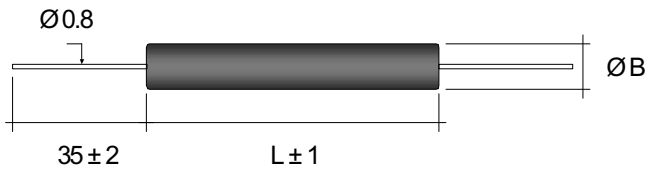
High Voltage Surge Resistors Series P400
High Pulse Energy, High Power, Non-Inductive

High Voltage Surge Resistors Series P400 combine proprietary non-inductive power film resistance system and design to achieve excellent pulse withstand performance, high stability, high power density and high operating voltages.
The new Series P400 has been developed to meet the demanding high power / high energy requirements of pulse / transient applications such as Medical Surge Protection (defibrillator cables), RC Snubber Circuits, Spark-Gap Limiters and High Voltage Power Supplies.
Series P400 is also an ideal replacement of carbon composition resistors and bulk ceramic resistors over an extended resistance range.



Model	Wattage Rating	Max. Peak Pulse Voltage	Dimensions in millimeters ± 0.50 [Dimensions in inches ± 0.02]	
			L	B
P400.2	3.80	15'000	27.00 [1.07]	8.00 [0.32]
P400.3	5.00	21'000	37.00 [1.46]	8.00 [0.32]
P400.5	7.50	30'000	52.00 [2.05]	8.00 [0.32]
P400.7	10.00	45'000	77.00 [3.03]	8.00 [0.32]
P400.10	13.50	60'000	102.00 [4.02]	8.30 [0.33]
P400.12	16.00	72'000	122.00 [4.80]	8.50 [0.34]
P400.15	20.00	90'000	152.00 [5.98]	8.50 [0.34]

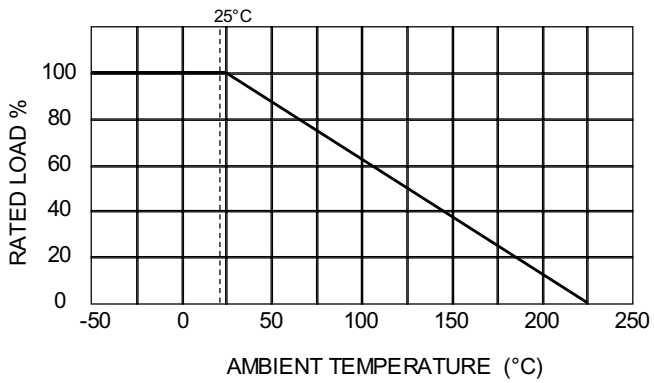
Characteristics

Resistance Values	from 1Ω to as high as 1MΩ		
Tolerances	1%, 2%, 5%, 10% (other tolerances to 0.05% on request)		
Temperature Coefficients	25, 50 and 100 ppm/°C (other temperature coefficients to 10 ppm/°C on request)		
Operating Temperature	-55 .. +225°C	(extended temperature range to 350°C available)	
Insulation Resistance	> 10'000 MΩ	500 Volt 25 °C 75% relative humidity	
Dielectric Strength	> 1'000 Volt	25 °C 75% relative humidity	
Thermal Shock	Δ R/R < 0.5% typ., 1% max.	MIL Std. 202, method 107 Cond. C	IEC 68 - 2 -14
Overload	Δ R/R < 0.5% typ., 1% max.	1.5 x Pnom, 5 sec (do not exceed max. voltage)	
Moisture Resistance	Δ R/R < 0.5% typ., 1% max.	MIL Std. 202, method 106	IEC 68 - 2 - 3
Load Life	Δ R/R < 0.5% typ., 1% max.	1000 hours at rated power	IEC 115 - 1
Continuous Working Voltage	Power Limited	= √(PxR)	
Encapsulation	Silicone Conformal Coating	Core Material	Al_2O_3 (96%)
Lead Material	Gold Plated	Resistor Material	Ruthenium Oxide

Single Pulse Energy

Type	Nominal Energy Rating (Pulse Duration 10 ms)*
P400.2	35 Joules
P400.3	55 Joules
P400.5	80 Joules
P400.7	120 Joules
P400.10	160 Joules
P400.12	200 Joules
P400.15	250 Joules

Derating Curve



*Max. Single Pulse Energy is based on a pulse duration of 10 ms.
For shorter pulses the energy rating should be decreased (see Application Notes for details). In case of repeated pulses, the average pulse power should not exceed the Nominal Power Rating.