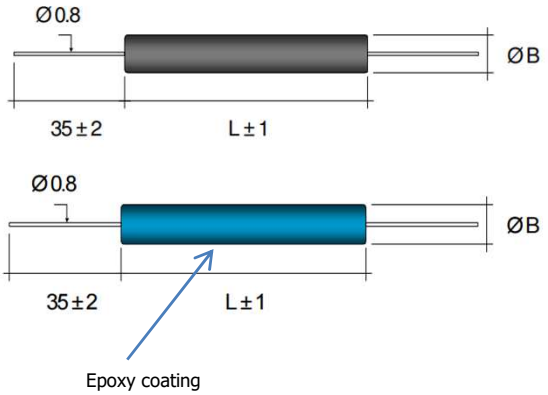
High Voltage 400 Series

Precision, Non-Inductive, Low TC

High Voltage Resistors Series 400 have been developed to meet the precision temperature stability requirements of high accuracy and high voltage systems, combining proprietary non-inductive resistance system and design to achieve low temperature coefficient, low voltage coefficients, high stability and increased high operating voltages. Low TC Precision High Voltage Resistors Series 400 are designed to meet the demanding requirements of TWT power supplies, electron microscopes, X-ray systems, high resolution CRT displays and geophysical instruments .

Model	Rated Power [W]	Max. Oper. Voltage	Dimension ±0.50		Tolerance [%]
			L	B	
400.2 / 400.2E*	3.80	15,000	27.00	8.00	± 0.05%
400.3 / 400.3E	5.00	21,000	37.00	8.00	± 0.1%
400.4	6.50	26,000	45.00	8.00	± 0.25%
400.5 / 400.5E	7.50	30,000	52.00	8.00	± 0.5%
400.7 / 400.7E	10.00	45,000	77.00	8.00	± 1.0 %
400.10 / 400.10E	13.50	60,000	102.00	8.00	± 2.0 %
400.12 / 400.12E	16.00	72,000	122.00	8.00	± 5.0 %
400.15 / 400.15E	20.00	90,000	152.00	8.00	±10.0%



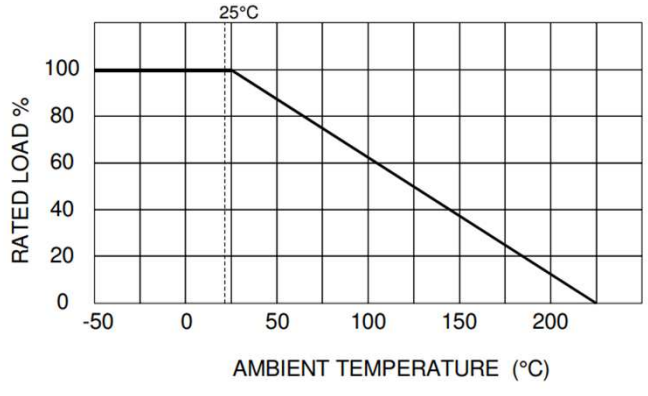
*E = Epoxy coating Type

CHARACTERISTICS

Resistance Values		from 1KΩ to as high as 100GΩ on all models (to 1TΩ on request)
Temperature Coefficients*	5, 10, 15, 25, 50 and 100 ppm/°C (10 ppm/°C available to 10G, 25 ppm/°C to 100G, other 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
Thermal Shock	ΔR/R < 0.1% typ., 0.20% max.	MIL Std. 202, method 107 Cond. C (IEC 68 - 2 -14)
Overload	ΔR/R < 0.1% typ., 0.20% max.	1,5 x Pnom, 5 sec (do not exceed max. voltage)
Moisture Resistance	ΔR/R < 0.1% typ., 0.20% max.	MIL Std. 202, method 106 (IEC 68 - 2 – 3)
Load Life	ΔR/R < 0.1% typ., 0.20% max.	1000 hours at rated power (IEC 115 – 1)
Encapsulation		E type = Epoxy Conformal Coating Silicone Conformal Coating **
Core Material		Al2O3 (96%)
Lead Material		Gold Plated
Resistor Material		Ruthenium Oxide

* Temperature Coefficient referenced to 25°C, ΔR taken at +125°C.
** We recommend 2 x Polyimide Coating or Epoxy version 400E for use in oil and potted applications (ask for details).

Derating Curve & Voltage Coefficients of Resistance



Model	Resistance Range	VCR (-ppm/V)
400.2 / 400.2E	1K .. 500M 500M .. 5G	< 0.40 < 0.75
400.3 / 400.3E	1K .. 1G 1G .. 10G	< 0.20 < 0.40
400.4	1K .. 1G3 1G3 .. 15G	< 0.17 < 0.35
400.5 / 400.5E	1K .. 1G5 1G5 .. 15G	< 0.15 < 0.30
400.7 / 400.7E	1K .. 2G5 2G5 .. 25G	< 0.10 < 0.15
400.10 / 400.10E	1K .. 3G 3G ..30G	< 0.08 < 0.12
400.12 / 400.12E	1K .. 4G 4G .. 40G	< 0.06 < 0.10
400.15 / 400.15E	1K .. 5G 5G .. 50G	< 0.04 < 0.08