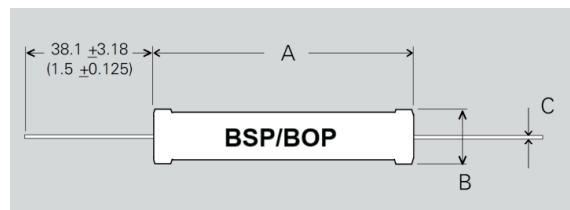


BSP/BOP Series Thick Film Tube Resistors, High Voltage



FEATURES

- Tube type (thick film, non-inductive design) high voltage resistor
- For general purpose, max working temp. to 225°C
- Anti-oxidation brass wire with tin coated leads
- Epoxy coating, flame retardant



TECHNICAL SPECIFICATION

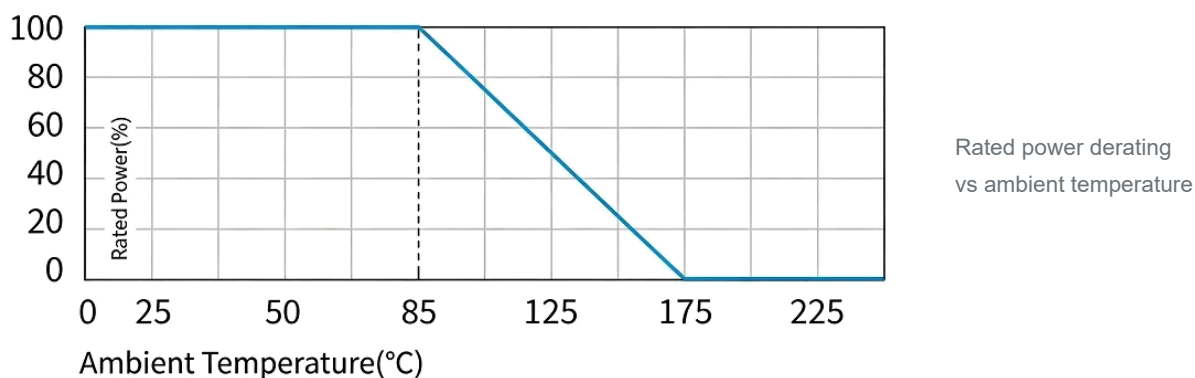
Parameter	Specification
Body Diameter	HVR-BSP: 7.0mm / HVR-BOP: 3.5mm
Resistance Range	200Ω to 1GΩ (higher upon request)
Tolerance	±0.5% to ±10%
Temperature Coefficient	±25 to ±80 ppm/°C (25°C ~ 105°C), other requirements negotiable
Working Temperature Range	-40°C to +155°C
Power Endurance	1,000h at rated power, $\Delta R \leq \pm 0.15\%R$
Overload	5× rated power, $\leq 1.5 \times$ max continuous working voltage, 5s, $\Delta R \leq \pm 0.2\%R$
Moisture Resistance	MIL-Std-202 Method 106, $\Delta R \leq \pm 0.4\%R$
Thermal Shock	MIL-Std-202 Method 107, Condition C, $\Delta R \leq \pm 0.25\%R$
Dielectric Withstanding Voltage	1,000 VDC
Insulation Resistance	$\geq 10G\Omega$ min
Coating	Silicone resin
Lead Material	Anti-oxidation nickel-plated copper wire
Cap Material	Anti-oxidation nickel-plated copper cap

TYPICAL APPLICATIONS

- Voltage dividers and bleed resistors
- X-ray power supplies and medical imaging
- High voltage test equipment
- Snubber and damping circuits
- Electrostatic precipitators (ESP)
- Pulse power systems and capacitor banks
- Laser power supplies (CO₂, solid-state)
- Crowbar protection circuits
- Instrumentation and metering
- Motor drives and power electronics

BSP/BOP Series Thick Film Tube Resistors, High Voltage

DERATING CURVE



STANDARD PART NUMBER

Part Number	Power (W)	Max Voltage (KV)	Length A (mm)	Diameter B (mm)	Lead Diameter C (mm)
HVRBOP11	0.80	1.5	10.90	4.00	0.60
HVRBOP13	1.00	1.5	13.30	4.00	0.60
HVRBOP20	1.50	3	19.70	4.00	0.60
HVRBOP26	1.95	4	26.20	4.00	0.60
HVRBOP32	2.30	6	32.30	4.00	0.60
HVRBOP39	3.00	6	39.40	4.00	0.60
HVRBOP50	3.30	10	49.50	4.00	0.60
HVRBSP20	2.30	5	20.20	8.00	1.00
HVRBSP26	3.90	7.5	26.90	8.00	1.00
HVRBSP32	4.20	8.5	33.00	8.00	1.00
HVRBSP39	4.60	11	39.50	8.00	1.00
HVRBSP45	5.00	14	45.00	8.00	1.00
HVRBSP52	7.80	16	52.10	8.00	1.00
HVRBSP78	11.70	24	77.70	8.00	1.00
HVRBSP103	12.50	32	102.90	8.00	1.00
HVRBSP124	15.50	40	123.70	8.00	1.00
HVRBSP148	30.00	45	148.00	15.00	—
HVRBSP153	19.40	48	153.70	8.00	1.00
HVRBSP192	25.00	60	192.00	8.00	1.00

Custom resistance values, tolerances and dimensions are available on request.