

Ultra-High-Power Resistors

Series UPT-400

400 W resistor, US Patent-No. 5,355,281

For variable speed drives, power supplies, control devices, robotics, motor control and other power designs, the easy mounting fixture assures an auto-calibrated pressure to the cooling plate of about 120 to 160 N.

Features

- 400 W operating power
- Non-Inductive design
- ROHS compliant
- High insulation & partial discharge performance
- Materials in accordance with UL 94 V-0
- Resistor is also available with preapplied PCM (Phase Change Material) (ask for details)

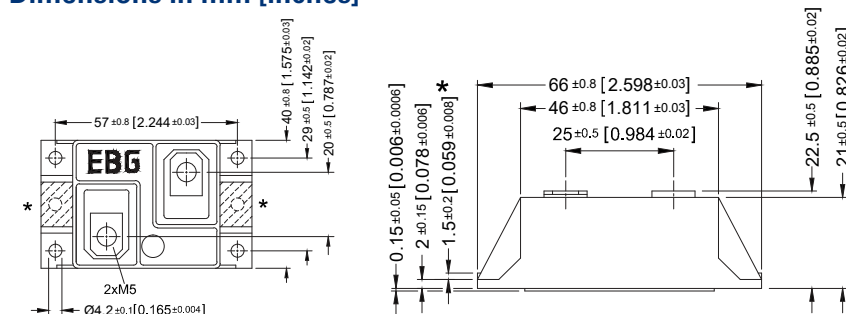


Technical Specifications

Resistance value	0.5 Ω ≤ 1 MΩ
Resistance tolerance	±10 % to ±5 % ±2 % to ±1 % on special request for limited ohmic values with the reduction of the max. power / pulse rating (ask for details)
Temperature coefficient	±150 ppm/°C lower TCR on special request for limited ohmic values
Power rating	400 W at 85°C bottom case temperature
Short time overload	700 W at 70°C for 10sec., ΔR = 0.4 % max.
Maximum working voltage	5,000 V DC = 3,500 V AC RMS (50 Hz) higher voltage on request, not exceeding max. power
Electric strength voltage	7 kVrms / 50 Hz / 500 VA, test time 1 min. (up to 12 kVrms on request) voltages above 10 kVrms are tested at DC equivalent to avoid pre damage of component terminal and case
Partial discharge	4 kVrms < 10 pC (up to 7 kVrms < 10 pC on request) acc. to IEC 60270
Insulation resistance	> 10 GΩ at 1,000 V
Single shot voltage	up to 12 kV norm wave (1.5/50 μsec)
Inductance	≥ 80 nH (typical), measuring frequency 10 kHz
Capacity/mass	≥ 110 pF (typical), measuring frequency 10 kHz
Capacity/parallel	≥ 40 pF (typical), measuring frequency 10 kHz
Operating temperature	-55°C to +155°C
Mounting - max. torque for contacts	2 Nm
Mounting - max. torque	1.8 Nm M4 screws
Terminal tops for additional insulation requirements	on special request (ask for details)
Cable variation	on special request (ask for details)
Standard cable type	H&S Radox 9 GKW AX 1,5mm ² (other cable types on special request)
General pulse load information	contact our local EBG representative or contact us directly

Weight ~120 g

Dimensions in mm [inches]



General Specifications

Encapsulation

Resin-filled epoxy casing with large creeping distance to mass, large air distance between the terminals and high insulation resistance

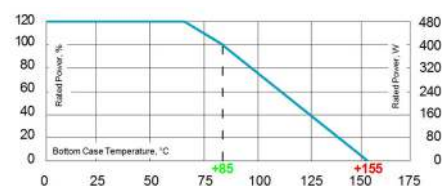
Resistance Element

Special design for low inductance and capacitance values. The element employs our special METOXFILM, which demonstrates stability while covering high wattage and pulse loading

Contacts

Easy load connection with M5 screws (others on request)

Power Rating



Derating (thermal resist.) UPT-400:

5.55 W/K (0.18 K/W)

Power rating: 400 W at 85°C bottom case temperature**

Please ask for detailed mounting procedure!

** This value is only applicable when using a thermal conduction to the heat sink $R_{th-cs} < 0.025$ K/W. This value can be obtained by using a thermal transfer compound with a heat conductivity of at least 1 W/mK. The flatness of the cooling plate must be better than 0.05 mm overall. Surface roughness should not exceed 6.4 μm.

