

Ultra-High-Power Resistors

Series UPT-600

600 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 guarantees an auto-calibrated pressure to the cooling plate of about 120 to 160 N.

Features

- 1x 600 W / 2x 250 W / 3x 120 W operating power
- Tolerance range $\pm 10\%$ to $\pm 5\%$ (tighter on special request)
- Ohmic range $0.1\ \Omega$ to $1.5\ M\Omega$ (higher on special request)
- Non-Inductive design
- ROHS compliant
- High insulation & partial discharge performance
- Materials in accordance with UL 94 V-0

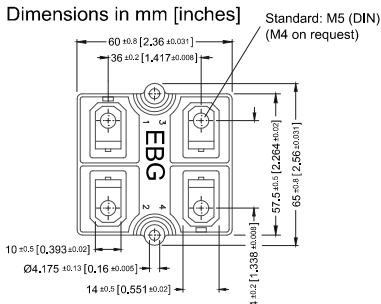


Technical Specifications

Resistance value	$0.1\ \Omega \leq 0.2\ \Omega$ (HC-version) $> 0.2\ \Omega \leq 1.5\ M\Omega$ (higher value on special request)
Resistance tolerance	$\pm 10\%$ to $\pm 5\%$ $\pm 2\%$ to $\pm 1\%$ on special request for limited ohmic value with the reduction of the max. power / pulse rating (ask for details)
Temperature coefficient	$\pm 500\ \text{ppm}/^\circ\text{C}$ ($0.1\ \Omega \leq 0.2\ \Omega$) Standard $\pm 150\ \text{ppm}/^\circ\text{C}$ ($> 0.2\ \Omega \leq 1.5\ M\Omega$) Standard lower TCR on special request for limited ohmic value
Power rating	up to 600 W at 85°C bottom case temperature (see configurations)
Short time overload	1,000 W at 70°C for 10sec., $\Delta R = 0.4\%$ max. (for configuration 2 and 3)
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
Dielectric strength between R1-R2	$> 5\ \text{kV DC}$
Partial discharge	4 kVrms $< 10\ \text{pC}$ (up to 7 kVrms $< 10\ \text{pC}$ on request) acc. to IEC 60270
Insulation resistance	$> 10\ \text{G}\Omega$ at 1,000 V
Single shot voltage	up to 12 kV norm wave (1.5/50 μsec)
Inductance	$\geq 80\ \text{nH}$ (typical), measuring frequency 10 kHz
Capacity/mass	$\geq 110\ \text{pF}$ (typical), measuring frequency 10 kHz
Capacity/parallel	$\geq 40\ \text{pF}$ (typical), measuring frequency 10 kHz
Operating temperature	-55°C to $+155^\circ\text{C}$
Mounting - max. torque for contacts	2 Nm
Mounting - max. torque	1.8 Nm M4 screws
Contacts	standard M5 (M4 on special request)
Terminal tops for additional insulation requirements	on special request (ask for details)
General pulse load information	contact our local EBG representative or contact us directly

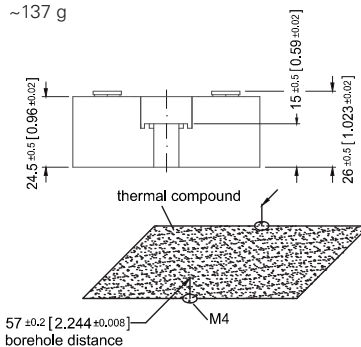
Dimensions

Dimensions in mm [inches]



Weight

~137 g

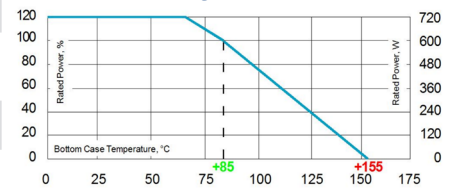


How to make a request

UPT-600-Configuration_Ohmic Value_Tolerance

For example: UPT-600-2 5R 10%

Power Rating



Derating (thermal resist.) UPT-600:

8.33 W/K (0.12 K/W) for configuration 2 and 3

Power rating: 600 W at 85°C bottom case temperature*

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

Configurations (P / package)

Standard version

