

# Ultra-High-Power Resistors

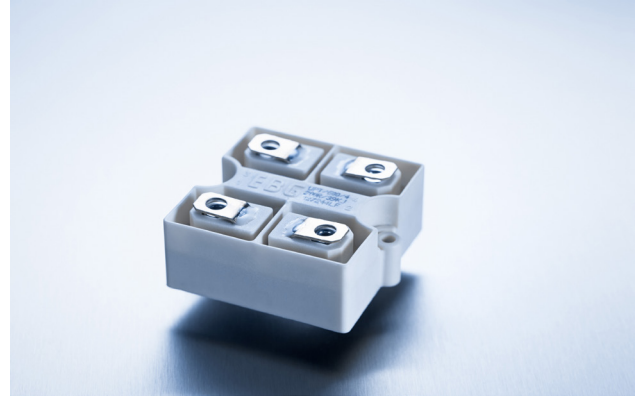
## Series UPT-600

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 UL94-V0

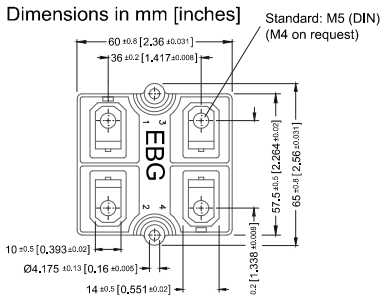


### Technical Specifications

<b>Resistance value</b>	0.1 $\Omega$ $\leq$ 0.2 $\Omega$ (HC-version) > 0.2 $\Omega$ $\leq$ 1.5 M $\Omega$ (higher value on special request)
<b>Resistance tolerance</b>	$\pm 10\%$ 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)
<b>Temperature coefficient</b>	$\pm 500$ ppm/ $^{\circ}$ C (0.1 $\Omega$ $\leq$ 0.2 $\Omega$ ) Standard $\pm 150$ ppm/ $^{\circ}$ C (> 0.2 $\Omega$ $\leq$ 1.5 M $\Omega$ ) Standard lower TCR on special request for limited ohmic value
<b>Power rating</b>	up to 600 W at 85 $^{\circ}$ C bottom case temperature (see configurations)
<b>Short time overload</b>	1,000 W at 70 $^{\circ}$ C for 10sec., $\Delta R = 0.4\%$ max. (for configuration 2 and 3)
<b>Maximum working voltage</b>	5,000 V DC = 3,500 V AC RMS (50 Hz) higher voltage on request, not exceeding max. power
<b>Electric strength voltage</b>	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
<b>Dielectric strength between R1-R2</b>	> 5 kV DC
<b>Partial discharge</b>	4 kVrms < 10 pC (up to 7 kVrms < 10 pC on request) acc. to IEC 60270
<b>Insulation resistance</b>	> 10 G $\Omega$ at 1,000 V
<b>Single shot voltage</b>	up to 12 kV norm wave (1.5/50 $\mu$ sec)
<b>Inductance</b>	$\geq 80$ nH (typical), measuring frequency 10 kHz
<b>Capacity/mass</b>	$\geq 110$ pF (typical), measuring frequency 10 kHz
<b>Capacity/parallel</b>	$\geq 40$ pF (typical), measuring frequency 10 kHz
<b>Operating temperature</b>	-55 $^{\circ}$ C to +155 $^{\circ}$ C
<b>Mounting - max. torque for contacts</b>	2 Nm
<b>Mounting - max. torque</b>	1.8 Nm M4 screws
<b>Contacts</b>	standard M5 (M4 on special request)
<b>Terminal tops for additional insulation requirements</b>	on special request (ask for details)
<b>General pulse load information</b>	contact our local EBG representative or contact us directly

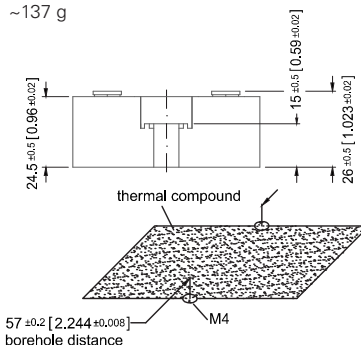
### Dimensions

Dimensions in mm [inches]



**Weight**

~137 g

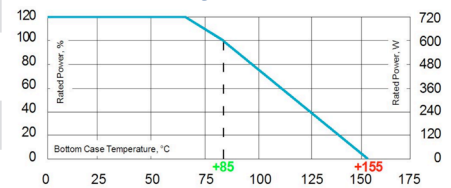


### How to make a request

**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 $^{\circ}$ C bottom case temp.\*

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 1 W/mK. The flatness of the cooling plate must be better than 0.05 mm overall. Surface roughness should not exceed 6.4  $\mu$ m.

### Configurations (P / package)

Standard version

