

# 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

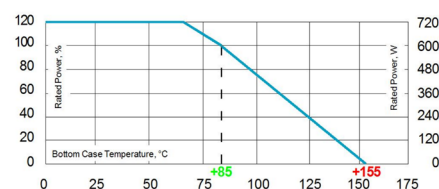
- 1x 600 W / 2x 250 W / 3x 120 W operating power
- Non-Inductive design
- ROHS compliant
- High insulation & partial discharge performance
- Materials in accordance with UL 94 V-0
- Resistor is also available with preapplied PCM (Phase Change Material) (ask for details)



### Technical Specifications

<b>Resistance value</b>	0.1 Ω ≤ 0.2 Ω (HC-version) > 0.2 Ω ≤ 1.5 MΩ (higher values on special request)
<b>Resistance tolerance</b>	±10 % to ±5 % ±2 % to ±1 % on special request for limited ohmic value with the reduction of the max. power / pulse rating (ask for details)
<b>Temperature coefficient</b>	±500 ppm/°C (0.1 Ω ≤ 0.2 Ω) Standard ±150 ppm/°C (> 0.2 Ω ≤ 1.5 MΩ) Standard lower TCR on special request for limited ohmic values
<b>Power rating</b>	up to 600 W at 85°C bottom case temperature (see configurations)
<b>Short time overload</b>	1,000 W at 70°C for 10sec., ΔR = 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 terminal and case
<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 GΩ at 1,000 V
<b>Single shot voltage</b>	up to 12 kV norm wave (1.5/50 μsec)
<b>Inductance</b>	≥ 80 nH (typical), measuring frequency 10 kHz
<b>Capacity/mass</b>	≥ 110 pF (typical), measuring frequency 10 kHz
<b>Capacity/parallel</b>	≥ 40 pF (typical), measuring frequency 10 kHz
<b>Operating temperature</b>	-55°C to +155°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>Cable variation</b>	on special request (ask for details)
<b>Standard cable type</b>	H&S Radox 9 GKW AX 1,5mm <sup>2</sup> (other cable types on special request)
<b>General pulse load information</b>	contact our local EBG representative or contact us directly
<b>Weight</b>	~137 g

### Power Rating



Derating (thermal resist.) UPT-600:  
8.33 W/K (0.12 K/W) for configuration 2 and 3

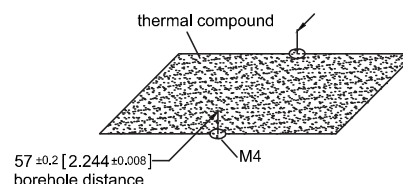
Power rating: 600 W at 85°C bottom case temperature\*

\* This value is only applicable when using a thermal conduction to the heat sink  $R_{th-cs} < 0.025$  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.

Please note most all of our UPT customers have their own custom designed drawing. Therefore please do not hesitate to discuss your special needs with the local representative or contact us directly.

### Borehole Distance

Dimensions in mm [inches]

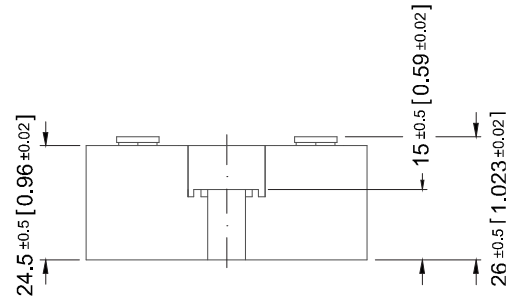
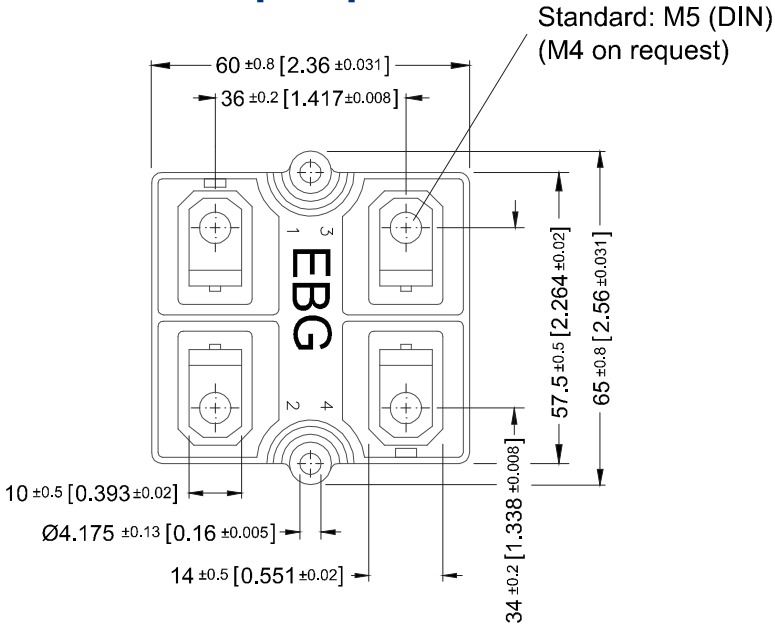


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### Dimensions in mm [inches]



### How to make a request

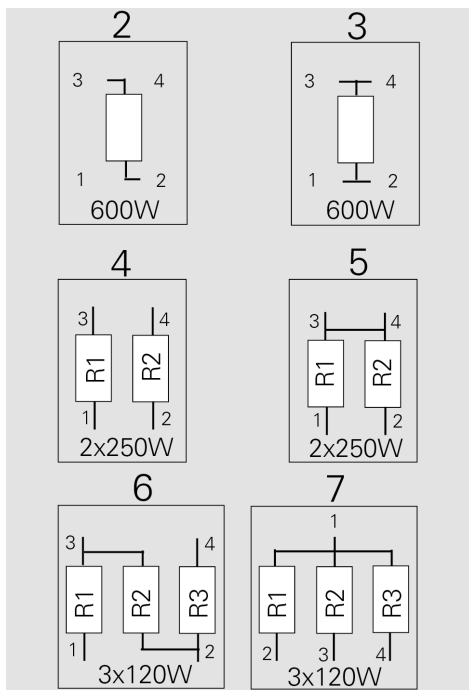
UPT-600-Configuration\_Ohmic Value\_Tolerance

For example:

UPT-600-2 5R 10% or UPT-800-7 3x50K 5%

### Configurations (P / package)

Standard version



The above spec. sheet features our standard products. For further options please contact our local EBG representative or contact us directly.