

Ultra-High-Power Resistors

Series ULX-600 (very low component height)

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

For variable speed drives, power supplies, control devices, robotics, motor control and other power designs.

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

Resistance value	0.1 Ω \leq 0.2 Ω (HC-version) > 0.2 Ω \leq 1.5 M Ω (higher values on special request)
Resistance tolerance	$\pm 10\%$ to $\pm 5\%$ $\pm 2\%$ to $\pm 1\%$ on special request for limited ohmic values with the reduction of the max. power / pulse rating (ask for details)
Temperature coefficient	± 500 ppm/ $^{\circ}$ C (0.1 Ω \leq 0.2 Ω) standard ± 150 ppm/ $^{\circ}$ C (> 0.2 Ω \leq 1.5 M Ω) standard lower TCR on special request for limited ohmic values
Power rating	up to 600 W at 85 $^{\circ}$ C bottom case temperature (see configurations)
Short time overload	1,000 W at 70 $^{\circ}$ C for 10sec., $\Delta R = 0.4\%$ max. (for configuration 2 and 3)
Maximum working voltage	5,000 V DC \approx 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
Peak current	up to 1,500 A depending on pulse length and frequency (ask for details)
Insulation resistance	> 10 G at 1,000 V
Single shot voltage	up to 12 kV norm wave (1.5/50 μ sec)
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	res. body: -55 $^{\circ}$ C to +155 $^{\circ}$ C std. cables: -40 $^{\circ}$ C to +120 $^{\circ}$ C (other cables upon request)
Mounting - max. torque	1.8 Nm M4 screws
Standard cable length	250 mm (other cable lengths on special request)
Standard cable type	H&S Radox 9 GKW AX 1,5 mm ² (other cable types on special request)
General Pulse Load information	contact our local EBG representative or contact us directly
Weight	~92 g

General Specifications

Electric support

High-purity ceramic metalized with EBG ALTOX film on the bottom for better heat transfer and optimum discharge

Encapsulation

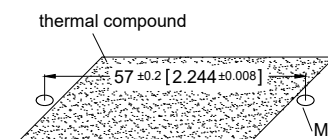
Resin-filled epoxy casing. High insulation resistance (CTI 600), high dielectric strength and partial discharge capability

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

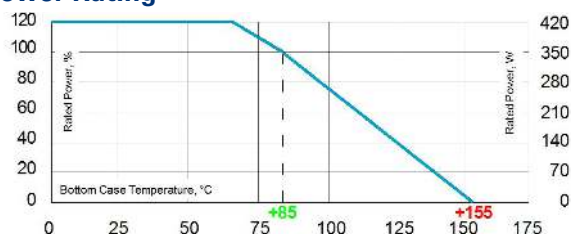
Borehole Distance

Dimensions in mm [inches]



* Standard connections with 250mm cable (Radox 9 GKW AX 1.5mm²)
Other cable type or cable length on special request

Power Rating



Derating (thermal resist.) ULX-600 8.33 W/K (0.12K/W)

Power rating: 600 W at 85 $^{\circ}$ 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 μ m.

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

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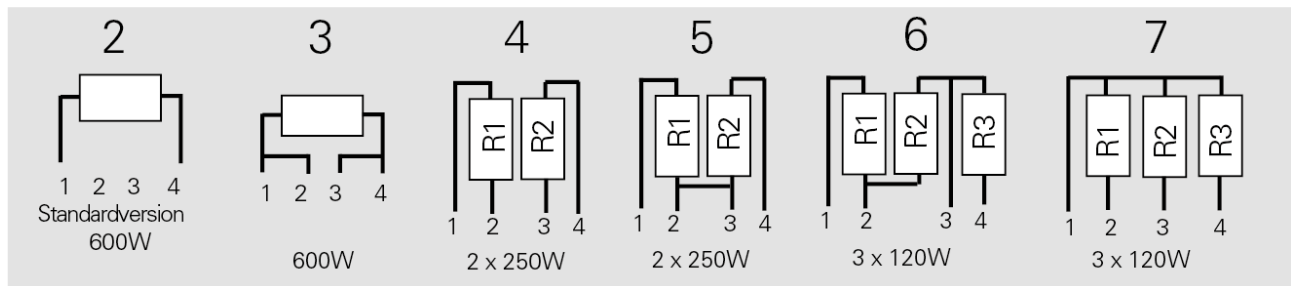
Test Specifications*

Test	Method	Tolerance Drift**
Short time overload	1,000 W/10sec.	0.40%
Humidity steady state	56 days/40°C/95%	0.25%
Temp. Cycling	-55/+125/5cycles	0.20%
Shock	40g/4,000 times	0.25%
Vibrations	2-500Hz/10g	0.25%
Load life 3,000cyl	PN 30 min. on / 30 min off	0.40%

* The test methods are according to IEC 60068-2

** The tolerance drift is the possible change of the resistance value because of the certain test

Configurations



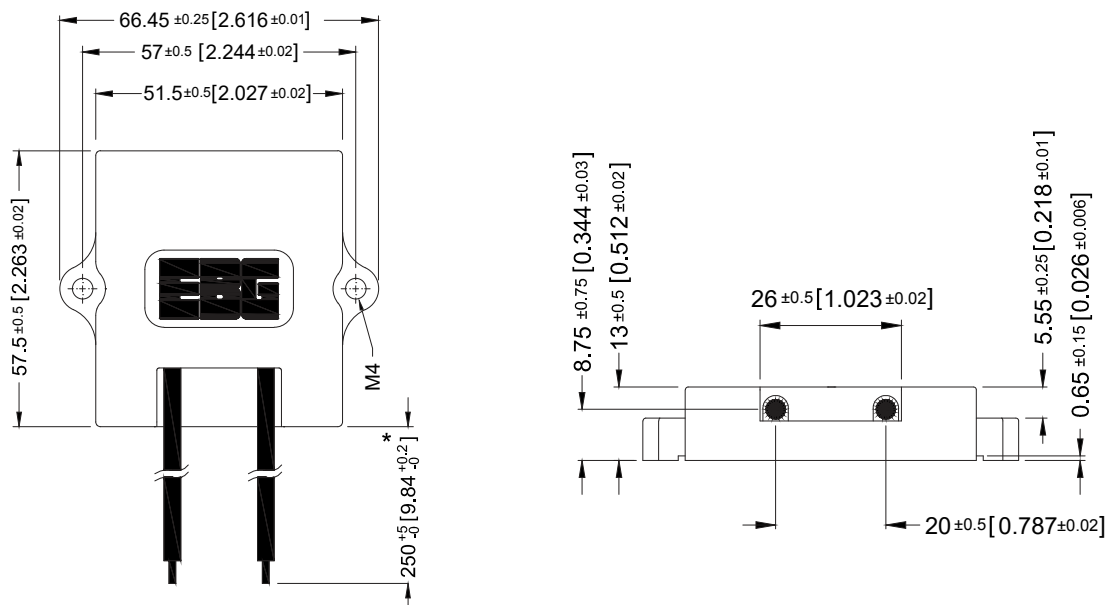
How to make a request

ULX-600-Configuration_Ohmic Value_Tolerance

For example:

ULX-600-2 620R 10% or ULX-600-4 2x15K 5%

Dimensions in mm [inches]



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