

UPR SERIES

THICK-FILM, ULTRA HIGH POWER RESISTOR

RoHS



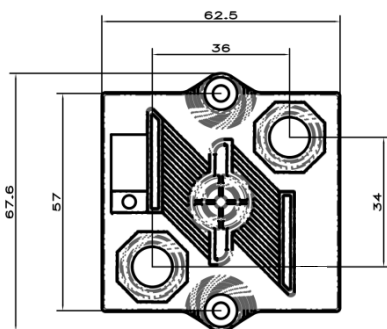
FEATURES

- Non Inductive design
- Ultra high power density
- Highest Performance
- Materials in accordance with UL 94 V 0
- RoHS, REACH compliant
- AlN-Al₂O₃ substrates
- Up to 2000W

APPLICATIONS

- Variable speed drives
- Power supplies
- Control devices
- Motor Control
- Robotics

DIMENSIONS



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TECHNICAL PARAMETERS

| | UPR2000 | UPR1400 | UPR1000LC |
|--|---------------------------------------|---------------------------------------|---------------------------------------|
| Resistance range | 1 Ω ÷10 kΩ | 1 Ω ÷20 kΩ | 1 Ω ÷100 kΩ |
| Resistance tolerance | ±10%, 5% | ±10%, 5% | ±10%, 5% |
| Rated power PN | 2000W | 1400W | 1000W |
| Impulse overload | 3000W @ 10s | 2000W @ 10s | 1500W @ 10s |
| Dielectric strength | t > 7kV | > 7kV | > 8kV |
| Insulation resistance | > 400GΩ (5kV, 30s) | > 400GΩ (5kV, 30s) | > 400GΩ (5kV, 30s) |
| Creeping distance | > 74mm | > 74mm | > 74mm |
| Clearance | 39mm | 39mm | 39mm |
| Temperature coefficient of resistance | 0 ±100 ppm/°C | 0 ±100 ppm/°C | 0 ±100 ppm/°C |
| Working temperature range | -55°C ... +170°C | -55°C ... +170°C | -55°C ... +170°C |
| Inductance | 80nH | 80nH | 80nH |
| Capacity @ 100kHz | 100pF | 140pF | 70pF |
| Thermal resistance | 0,10°C/W | 0,12°C/W | 0,16°C/W |
| Mounting - torque for electrical contacts M5 | 1,5...1,7Nm | 1,5...1,7Nm | 1,5...1,7Nm |
| Mounting - torque for assembly M4 | 1,3...1,6Nm | 1,3...1,6Nm | 1,3...1,6Nm |
| Internal temperature sensor (optional) | PT100/1000, AD (others on request) | PT100/1000, AD (others on request) | PT100/1000, AD (others on request) |

ASSEMBLY

- Between Resistor and heatsink used thermal grease 9,5W/mK (AAB TG4)
- Screwed to the radiator with a torque of 1.6 Nm with screws M4x20
- Electrical terminals screwed with a torque of 1.5Nm

COOLING

- Used heatsink: Material: Copper,
Thermal resistance Rth: 0,025 K/W,
Water flow: 1 l/min (water in 18°C)

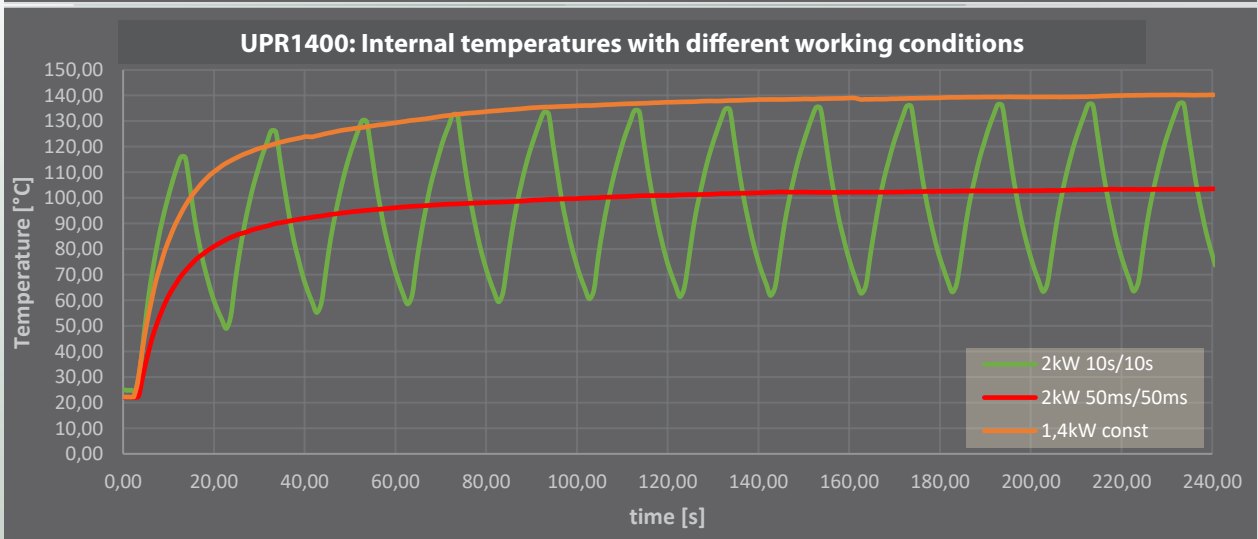
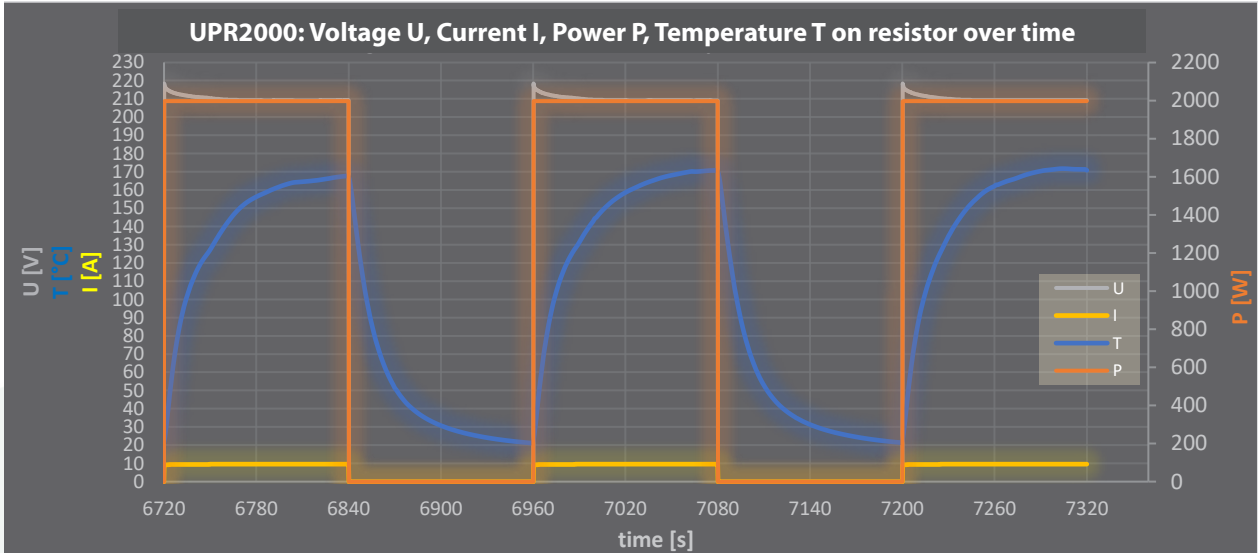
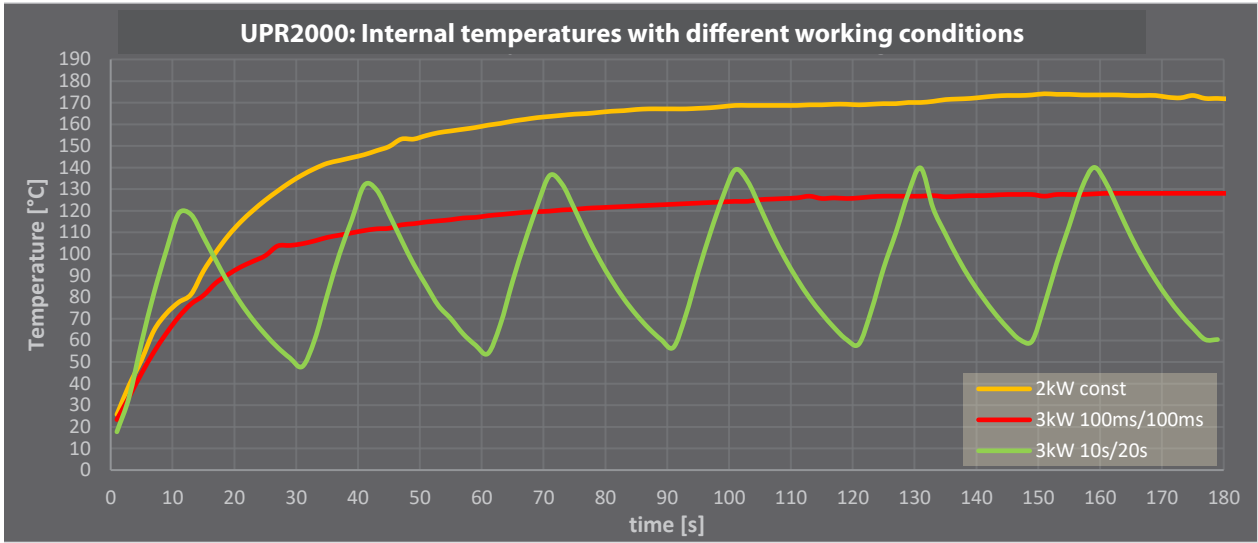
In order to ensure effective heat transfer, we recommend using effective thermal grease.



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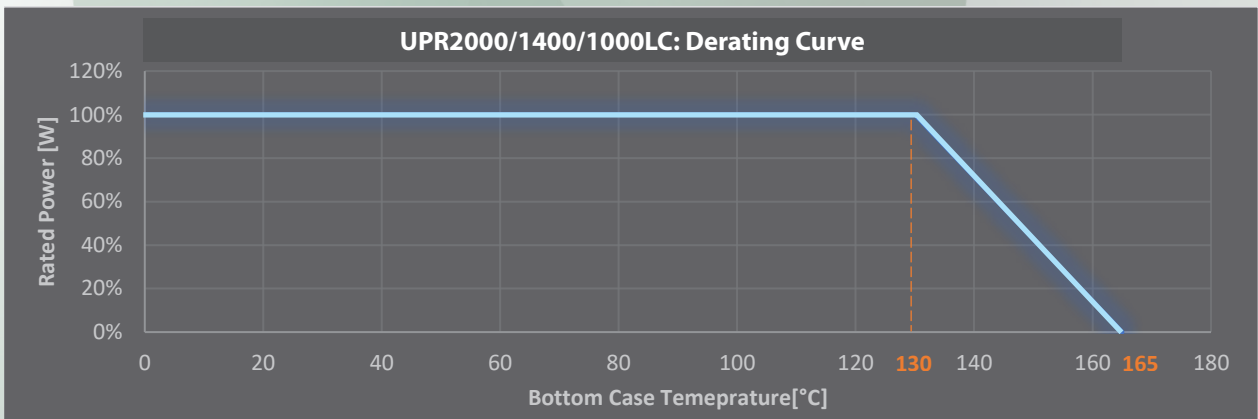
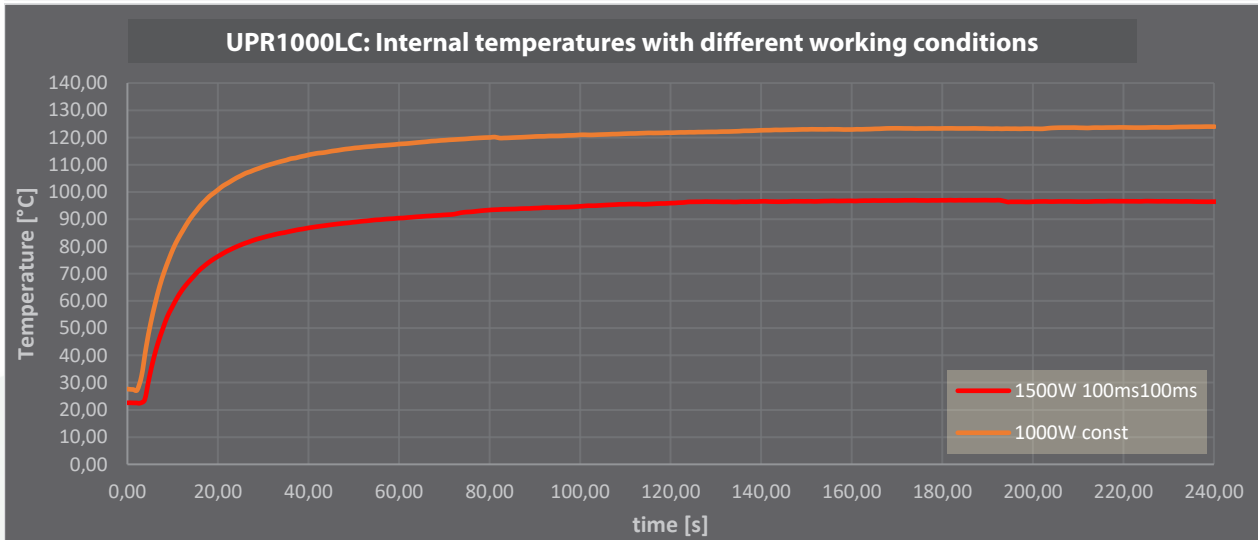
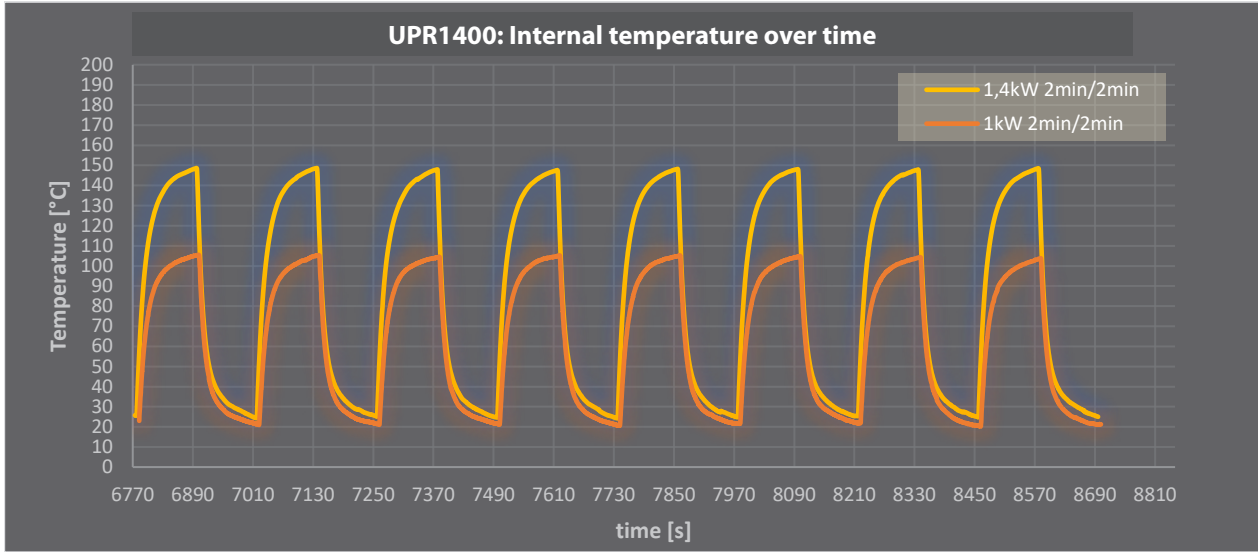
RoHS



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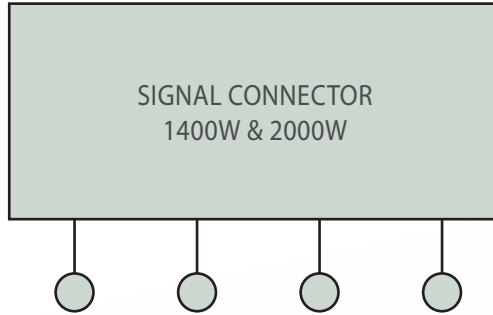


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OPTIONAL



| | | | | |
|--------|----|------------------|-------------------|---------------------|
| PT100 | ✓ | ✓ | NC | NC |
| AD1400 | NC | VS ⋮ ----- | GND ⋮ ----- | Reset ⋮ ----- |
| AD2000 | NC | VS ⋮ ----- | GND ⋮ ----- | Reset ⋮ ----- |

100K

36K

ORDERING INFORMATIONS Example: UPR2000 10R J (PT100)

| Series | Resistance | Internal temperature sensor | Tolerance |
|-----------|------------|-----------------------------|------------------------|
| UPR2000 | 1Ω ÷ 100kΩ | PT100 | K = ±10% (standard) |
| UPR1400 | | PT1000 | |
| UPR1000LC | | AD | J = ± 5% |

