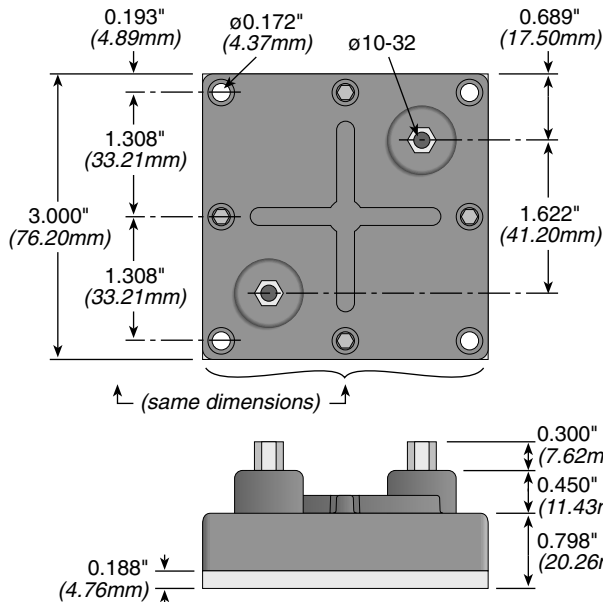


TAP1000 Series

1000 Watt Heat Sinkable Planar



The TAP1000 Series delivers 1000 watts of continuous power when properly mounted to a liquid cooled heat sink (based on 70°C ambient temperature)

Applications include power conditioning, power distribution, power conversion, and power control.

FEATURES

- Dissipates 1000 Watts @ 70°C Mounting Plate Temperature
- High Energy Rating
- Low Inductance
- Resistor Element Electrically Isolated
- High Dielectric Strength
- Small Footprint

APPLICATIONS

- Power semiconductor balancing
- Motor control
- Inrush Current Limiting

SPECIFICATIONS

Material

Resistor Element: Thick Film on Alumina Substrate

Electrical

Power Rating: 1000 watt @ 70°C Mounting Plate

Resistance Values: 2.5Ω to 50Ω

Resistance Tolerance: +10% std.

Max Operating Voltage:

2000VDC

Temperature Coefficient:

± 250 PPM/°C

Dielectric Strength: 6KV

Standard, up to 12KV available

Operating Temperature Range:

-55°C to 150°C

Case

Terminal Screws: #10-32

Max Contacts Torque: 10 in-lb

Mounting Screws: #8-32

Max Mounting Torque: 15 in-lb

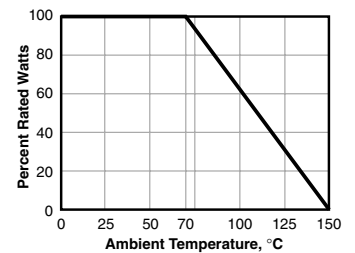
Creepage Distance:

50mm ± 1mm (min)

Thermal Resistance:

0.05°C / Watt

DERATING CURVE



PERFORMANCE DATA

| Test | Rating | |
|--|--------------------|---------|
| | Continuous | Pulse |
| Rated Power, max. current and heat sink plate temperature limited | 1000W | |
| Operating Voltage | $\sqrt{P \cdot R}$ | N/A |
| Max. Applied Voltage, ohms law limited | 223V | 2000VDC |
| Max. Current | 10A | 53.33A |
| Critical Resistance; below this resistance max power has to be de-rated due to exceeding max current | 10 ohms | |

| Test | Method | Maximum ΔR |
|---------------------|---|--|
| Short Time Overload | 1.14 x $\sqrt{P \cdot R}$ / 10 sec @ 70°C | Max % $\Delta R_{sto} = \pm(2\% + 0.05\Omega)$ |
| Moisture Resistance | 1000 hrs @ 40°C, 90-95% RH | ≤1% |
| Thermal Shock | MIL-STD-202, Method 107 | MIL-STD-202, Method 107 |
| Vibration, elec. | MIL-STD-202, Method 201 | ±2% Resistance |
| Vibration, mech. | MIL-STD-202, Method 201 | No Loose Terminal Screws |
| Load Life, 1000 Hrs | 90 min ON / 30 min OFF | ≤1% |
| Pulse Tolerance | 52μF @ 2KV / 60 sec intervals, 104J | ≤1% |
| 20,000 Pulses | | |
| Dielectric Strength | 6KVDC for 1 minute | ≤1% |

ORDERING INFORMATION

RoHS Compliant

TA1K0PH2R50KE

| | | | |
|-------|--------------|---|--|
| Style | Package Type | Resistance 2.5Ω = 2R50 50Ω = 50R0 | Tolerance K = 10% (standard) L = 20% |
|-------|--------------|---|--|

Check product availability at www.ohmite.com

APPLICATION NOTES

Proper heat sinking techniques are essential to performance of a TAP1000 resistor. Pleased follow these guidelines when designing TAP1000 system:

- Heat sink compound must always be used. Phase change material is preferred over silicon pastes.
- Heats sink plate (base plate of the resistor) temperature must be monitored to establish proper de-rating. Best technique is to attach a thermocouple to the side of the base plate of the resistor. Temperature of plastic housing or heat sink cannot be used to establish rating of the resistor. Usage of laser thermometers should be avoided.
- Due to very high power density, only liquid cooled heat sinks are recommended for applications when >300W power rating is desired.
- Properly designed heat sink should have more than 2 cooling pipes under the surface of the TAP1000 resistor. Hydroblok-1000, a 4 pass aluminum heat sink (<http://www.d6industries.com/HeatSinks.htm>) is an example of properly designed heat sink.

STANDARD PART NUMBERS FOR TAP1000 SERIES

| Ohms | Part Number 10% Tolerance | Ohms | Part Number 10% Tolerance |
|------|------------------------------|------|------------------------------|
| 3 | TA1K0PH3R00KE | 15 | TA1K0PH15R0KE |
| 4 | TA1K0PH4R00KE | 20 | TA1K0PH20R0KE |
| 5 | TA1K0PH5R00KE | 25 | TA1K0PH25R0KE |
| 8 | TA1K0PH8R00KE | 30 | TA1K0PH30R0KE |
| 10 | TA1K0PH10R0KE | 50 | TA1K0PH50R0KE |