

TAP800 Series

800 Watt Heat Sinkable Planar



FEATURES

- Electric support is high alumina content ceramic metallized on the bottom for ideal heat transfer and optimum discharge.
- Encapsulated with a special resin filled epoxy casting with a large creepage distance to mass, large air distance between terminals, and a high insulation resistance (CTI 600).
- Resistive element is specially designed for low inductance and capacitance. The element provides stable performance in addition to high wattage and pulse loading capability.
- Contacts allow for easy load connecting with M4 or M5 screws (not included).
- Materials meet the requirements of UL94-V0



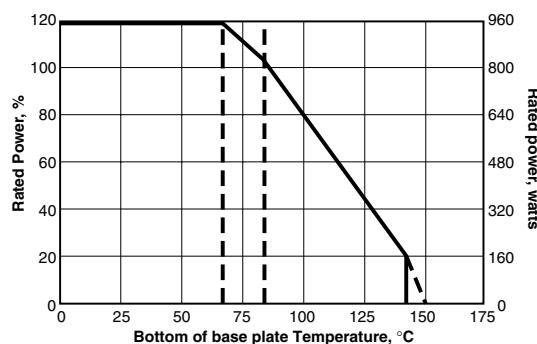
Ohmite's TAP800 Series dissipates 800 watts of power when used with a liquid or air cooled heat sink system. The Ohmite CP4 (<https://www.ohmite.com/cp4-series-chillplate/>) is an example of properly designed heat sink. The TAP800 rounds out 600 watt (TAP600) and 1000 watt (TAP1000) product offerings. Applications include variable speed drives, power supplies, robotics, motor control, control devices, and other power designs.

CHARACTERISTICS

| | |
|----------------------------------|--|
| Resistance Values | 1Ω to 10KΩ |
| Resistance Tolerance | ±5% to ±10% |
| Temperature Coefficient | ±150ppm/°C (others upon request) |
| Maximum Working Voltage | 5,000V DC, higher voltage on request, not exceeding max. power |
| Short Time Overload | 1,200W at 70°C for 10sec., ΔR=0.4% max. |
| Power Rating | 800W at 85°C Bottom case temperature. |
| Peak Current | up to 1500 amp. depending on pulse length and frequency Please ask for details |
| Electric Strength Voltage | 7K Vrms, 50Hz, up to 12K Vrms on special request |
| Single Shot Voltage | up to 12kV Normwave (1.5/50 μsec) |
| Partial Discharge | 4KVrms, <10pC, up to 7kV on special request |
| Insulation Resistance | 10GΩ min. at 500V |
| Creeping Distance | 42mm min. |
| Air Distance | 14mm min. |
| Inductance | 80nH |
| Capacity/Mass | 110pF |
| Capacity/Parallel | 40pF |
| Operation Temperature | -55°C to +150°C |
| Max. Torque for Contacts | 2 Nm |
| Max. Torque for Mounting | 1.8 Nm M4 screws (not included) |
| Derating | 9.09W/°K (0.11°K/W) |
| Power Rating | 800W at 85°C bottom case temp. This value is only valid by using a thermal conduction to the heatsink R _{th} -cs<0.025°K/W. This value can be reached by using thermal transfer compound with a heat conductivity of 1W/mK. The flatness of the cooling plate must be better than 0.05mm overall. The roughness of the surface should not exceed 6.4μm. |

| Test | Method | Typical Results ΔR |
|------------------------------|------------------------------------|-----------------------|
| Short time overload | 1,000 W/10sec | 0.4% |
| Humidity Steady State | 56 days/40°C/95% | 0.25% |
| Temp. Cycling | -55/+125/5 cycles | 0.20% |
| Shock | 40g/4,000 times | 0.25% |
| Vibration | 2-500Hz/10g | 0.25% |
| Load Life | Pn 30 min. on/30 min off, 1,000cyl | 0.40% |
| Terminal Strength | 200N | 0.05% |

Derating



(continued)

TAP800 Series

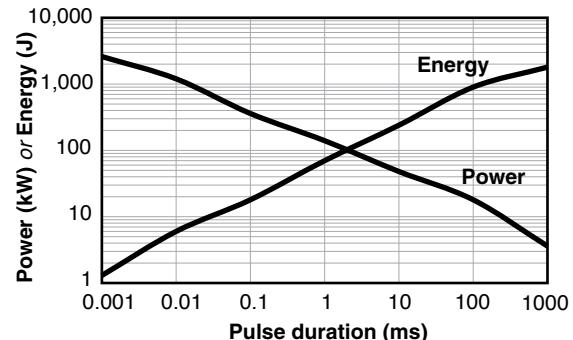
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PULSE ENERGY AND POWER CURVES

Typical rating for TAP800 with 2R and 10% tolerance

These energy values are reference values; depending on ohmic value and used resistive paste, a variation in max. energy load capability is possible. The power curve shows the max. possible power which can be applied for a certain duration.

- Mounted with thermal compound (0.9 W/mK) on a water-cooled heatsink
- Constant inlet water temp.: +50°C
- Test time: 10 min.
- Break time between pulses: 1sec.
- Change in ohm value: $\leq 0.1\%$
- Pulse shape: e-function
- Time between two pulses: 1 sec.
- Pulse length: time constant of 1 tau (1 means ... tau = 1ms)



Examples

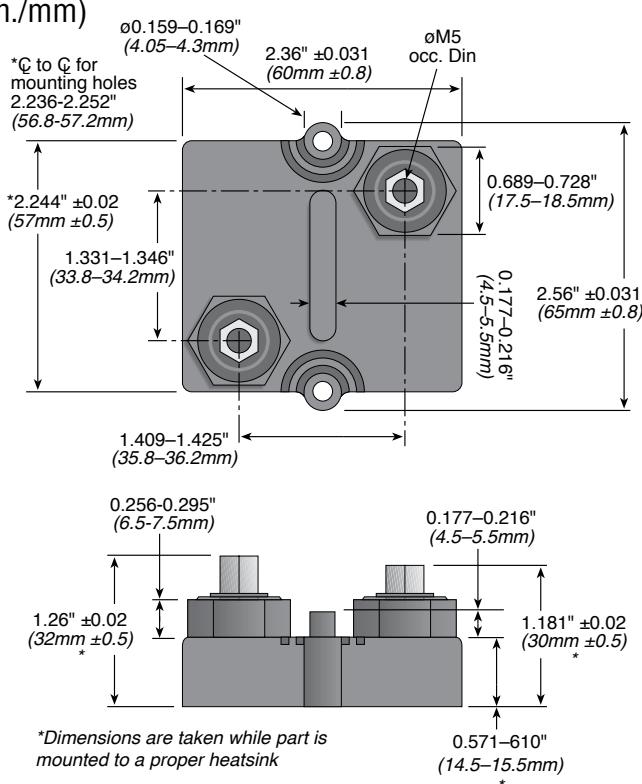
Energy: At 1ms tau the TAP800 with 2R can withstand an energy level of about 70J when the pulse pause time is ≥ 1 s

At a symmetrical frequency $> 1\text{kHz}$ at pulse length $\geq 10\mu\text{sec.}$, the maximum applied pulse energy is a result of the nominal power 800W divided by the operating frequency (at 85°C bottom case) ($E=800\text{W}/F$)

Power: For the time-constant of 1ms you can apply about 140kW max. ($P_p = 2^*E/T$) when the time between two such peaks is ≥ 1 s

DIMENSIONS

(in./mm)



ORDERING INFORMATION

RoHS compliant

Non-compliant version

unavailable

TAP800K5R0E

| Style | Wattage | Tolerance | Resistance |
|-------|-----------|------------------------------------|---|
| | 800 watts | J = 5% K = 10%, Std. L = 20% | 1 Ohm = 1R0 10 Ohm = 10R 1000 Ohm = 1K0 |

Standard Values

10% tol.

| | | |
|-------------|-------------|-------------|
| TAP800KR25E | TAP800K25RE | TAP800K680E |
| TAP800KR33E | TAP800K50RE | TAP800K750E |
| TAP800KR50E | TAP800K75RE | TAP800K1K0E |
| TAP800K1R0E | TAP800K100E | TAP800K2K7E |
| TAP800K5R0E | TAP800K220E | TAP800K5K0E |
| TAP800K7R5E | TAP800K300E | TAP800K7K5E |
| TAP800K10RE | TAP800K390E | TAP800K10KE |
| TAP800K15RE | | |

5% tol.

| |
|-------------|
| TAP800J1R0E |
| TAP800J10RE |
| TAP800J50RE |
| TAP800J100E |
| TAP800J500E |
| TAP800J1K0E |

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