

TEH100 Series

100 Watt Thick Film Power Resistors for High Frequency and Pulse Loading Applications



Ohmite offers the totally encapsulated and insulated TO-247 package for low ohmic value and non-inductive design for high-frequency and pulsing applications. Ideal use is for power supplies. This series is rated at 100 Watts mounted to a heat sink.

SPECIFICATIONS

Material

Resistor: thick film on alumina

Case: high temperature plastic

Lead Material: Tinned Copper

Installation, max. Torque: 0.9 Nm using an M3 screw and a compression washer

Electrical

Derating: linear, 100% at 25°C to 0% at 175°C

Resistance range: 0.05Ω to 1MΩ, other values on request

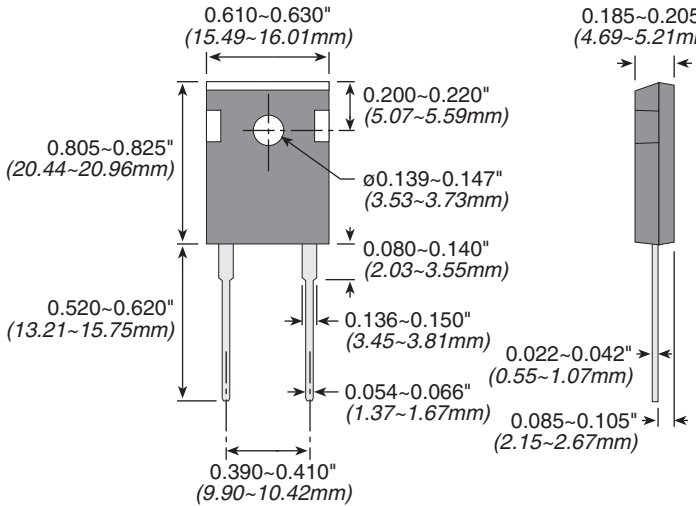
Resistance tol.: ±1%, ±2%, ±5%, ±10%

Max. working voltage: 350V

Temperature Coefficient: ±50ppm/°C for >10Ω, referenced to 25°C, ΔR taken at +105°C; others on request

Insulation Resistance: 10GΩ min.

Dielectric Strength: 1,800 VAC



FEATURES

- 100 Watt power rating at 25°C case temperature
- Non-inductive performance
- Low thermal resistance
- RoHS compliant design
- TO-247 package configuration
- Single screw mounting simplifies attachment to the heat sink
- A totally molded housing for environmental protection
- Non-Inductive design
- Resistor package totally insulated from heat sink

TEST DATA

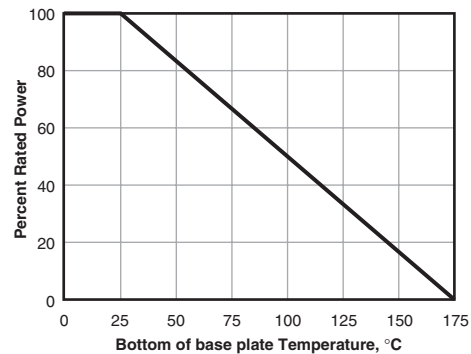
Test	Conditions Of Test	Performance
Load life	MIL-R-39009D 4.8.13, 2,000 hours at rated power	$\Delta R \leq \pm(1.0\% + 0.0005\Omega)$
Moisture resistance	-10°C - +65°C, RH>90%, cycle 240 h	$\Delta R \leq \pm(0.50\% + 0.0005\Omega)$
Short time overload	1.5 times rated power and V(DC) ≤1.5Vmax for 5 seconds	$\Delta R \leq \pm(0.50\% + 0.0005\Omega)$
Thermal shock	GJB360A-96 method 107, Cond. F	$\Delta R \leq \pm(0.50\% + 0.0005\Omega)$
Dielectric strength	GJB360A-96 method 301, (1,800V AC, 60s)	$\Delta R \leq \pm(0.15\% + 0.0005\Omega)$
Terminal strength	GJB360A-96 method 211, Cond. A (Pull Test) 2.4N	$\Delta R \leq \pm(0.20\% + 0.0005\Omega)$
High frequency vibration	GJB360A-96 method 204, Cond. D	$\Delta R \leq \pm(0.40\% + 0.0005\Omega)$

ORDERING INFORMATION

TEH100M10R0JE
 Series Ohms Tolerance
 M = two terminals R = Decimal F = 1%
 Example: 2R50 = 2.50Ω J = 5%
 25R0 = 25Ω
 100R = 100Ω
 1K00 = 1000Ω

Check product availability at www.ohmite.com

DERATING



Derating (thermal resistance): 0.666W/°K (1.5K/W). Without a heatsink, when in free air at 25°C, the TEH100 is rated for 3.5W. Derating for temp. above 25°C is 0.0234W/°K.

Graphed value is only valid when using a thermal conduction to the heatsink $R_{th-cs} < 0.025^\circ\text{K/W}$. 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. The case temperature is to be used for the definition of the applied power limit. The case temperature measurement must be made with a thermocouple contacting the center of the component mounted on the designed heat sink. Thermal grease should be applied properly

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