

TDH Series

35 Watt DPAK Package Thick Film Power Surface Mount



Ohmite's TDH resistor is an economical solution to intermediate power application design requirements. TDH's reliable thick film on alumina substrate construction can be easily heat sunk for higher power performance. TDH resistors are ideal for pulse-loading, pre-charge, bleeder, and snubber applications.



FEATURES

- 35 Watt power rating at 25°C
- SMD - DPAK package configuration
- Heat resistance to cooling plate: $R_{th} < 4.28^{\circ}\text{C/W}$
- A molded case for environmental protection.
- Resistor element is electrically insulated from the metal sink tab.

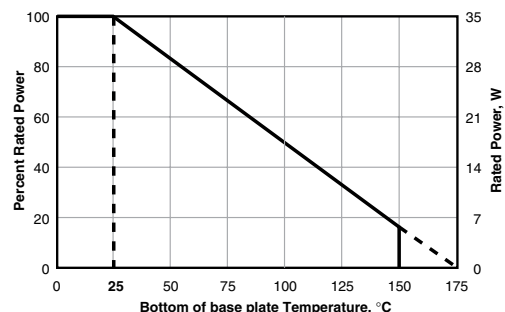
CHARACTERISTICS

Terminal	Copper
Terminal Plating	Terminals- SnAg, Thermal Header- German Silver/Nickel Silver
Resistance Range	0.05Ω to 10KΩ other values on request
Tolerance	±1% to ±10% (0.5% on request)
Max. Operating Voltage	350V
Insulation Resistance	10GΩ min.
Power Rating	Depends upon case temperature. See derating curve. DPAK style power package for surface mounting applications; 35W power rating at 25°C case temperature.
Working Temperature Range	-55°C to +175°C
Solder Process	The TDH35P cannot exceed 215°C (260°C for the TDH35H) for more than 10 seconds during soldering process.
Derating	100% @ 25°C to 0% @ 150°C curve referenced to case temperature
Dielectric Strength	1,800VAC
Operating Temperature Range	-55°C to +150°C
Temperature Coefficient	10Ω and above, ±50ppm/°C, referenced to 25°C, ΔR taken at +105°C. Between 1 and 10Ω, ±(100ppm+0.002Ω)/°C, referenced to 25°C, ΔR taken at +105°C. For under 10Ω: 0R6 - 9R9: 100PPM 0R4 - 0R59: 150PPM 0R2 - 0R39: 250PPM 0R1 - 0R19: 500PPM 0R05 - 0R09: 1000PPM
Inductance	less than 20 nanohenries
Flatness	less than 0.1mm tolerance

Soldering note: During surface mount soldering the soldering temperature profile must not cause the metal tab of this device to exceed 220°C (260°C for the TDH35H)!

Test	Condition	Result
Load Life	MIL-R-39009, 2,000 hours	ΔR ±(1.0% +0.01Ω)
Moisture Resistance	MIL-Std-202, Method 106	ΔR =(0.5% +0.01Ω) max.
Short Time Overload	2 times rated power with applied voltage not to exceed 1.5 times maximum continuous operating voltage for 5 seconds	ΔR ±(0.3% +0.01Ω) max.
Thermal Shock	MIL-Std-202, Method 107, Cond. F	ΔR =(0.3% +0.01Ω) max.
Terminal Strength	MIL-Std-202, Method 211, Cond. A (Pull Test) 2.4N	ΔR =(0.2% +0.01Ω) max.
Vibration, High Frequency	MIL-Std-202, Method 204, Cond. D	ΔR =(0.2% +0.01Ω) max.

Derating



Derating (thermal resistance): 0.23W/°C (4.28°C/W). The case temperature is to be used for purposes of establishing 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.

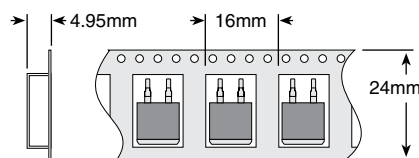
(continued)

35 Watt DPAK Package Thick Film Power Surface Mount

Technical drawing of a microfluidic chip showing three views: top, side, and front. The top view shows a square chip with a 10.1mm width, 8.6mm height, and a 45-degree chamfer. The side view shows a 4.5mm width and a 1.1mm ±0.5mm height. The front view shows a 7.87mm width and a 8.51mm height. The chip has two inlet ports with 1.4mm and 0.9mm diameters and a 5.08mm spacing. The chip is mounted on a 0.6mm thick substrate. The chip is labeled 'Land Pattern'.

Tol. $\pm 0.2\text{mm}$ unless otherwise noted

750 pc./reel



Standard Part Numbers

T D H 3 5 P R 1 0 0 J E - T R

Style
P = low temp.
H = high temp.

Package Modifier
P = low temp.
H = high temp.

Ohms
R = Decimal
Example:
R100 = 0.10
1R00 = 1.0
10K0 = 10.000

Tolerance
F = 1%
J = 5%
K = 10%

RoHS Compliant
Non-compliant
version unavailable

Tape and reel (optional)
750 per reel

Ohms	Part Number 5% Tolerance	Ohms	Part Number 5% Tolerance
0.10	TDH35PR100JE	25	TDH35P25R0JE
0.15	TDH35PR150JE	33	TDH35P33R0JE
0.20	TDH35PR200JE	39	TDH35P39R0JE
0.25	TDH35PR250JE		
0.30	TDH35PR300JE	47	TDH35P47R0JE
		68	TDH35P68R0JE
0.36	TDH35PR360JE	75	TDH35P75R0JE
0.47	TDH35PR470JE	100	TDH35P100RJE
0.50	TDH35PR500JE	150	TDH35P150RJE
0.75	TDH35PR750JE		
1.0	TDH35P1R00JE	200	TDH35P200RJE
		250	TDH35P250RJE
2.0	TDH35P2R00JE	300	TDH35P300RJE
3.0	TDH35P3R00JE	500	TDH35P500RJE
5.0	TDH35P5R00JE	750	TDH35P750RJE
7.5	TDH35P7R50JE		
10	TDH35P10R0JE	1000	TDH35P1K00JE
		1500	TDH35P1K50JE
15	TDH35P15R0JE	2500	TDH35P2K50JE
20	TDH35P20R0JE	3000	TDH35P3K00JE
		5000	TDH35P5K00JE

Maximum base plate temperature of the resistor must be monitored and kept within specified limits to establish the power 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.