

# TDH Series

## 35 Watt D2PAK 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 sunked 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 - D2PAK package configuration
- Heat resistance to cooling plate:  $R_{th} < 4.28^\circ\text{C}/\text{W}$
- A molded case for environmental protection.
- Resistor element is electrically insulated from the metal sink tab.

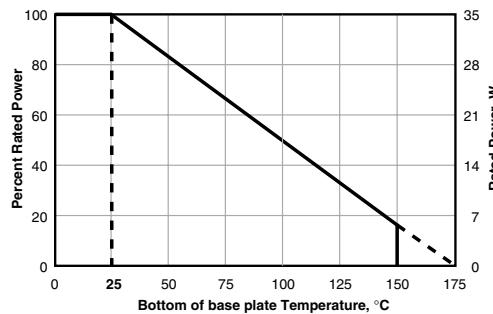
### CHARACTERISTICS

<b>Terminal</b>	Copper
<b>Terminal Plating</b>	Terminals- SnAg, Thermal Header- German Silver/Nickel Silver
<b>Resistance Range</b>	0.05Ω to 10KΩ other values on request
<b>Tolerance</b>	±1% to ±10% (0.5% on request)
<b>Max. Operating Voltage</b>	350V
<b>Insulation Resistance</b>	10GΩ min.
<b>Power Rating</b>	Depends upon case temperature. See derating curve. D2PAK style power package for surface mounting applications; 35W power rating at 25°C case temperature.
<b>Working Temperature Range</b>	-55°C to +175°C
<b>Solder Process</b>	The TDH35P cannot exceed 215°C (260°C for the TDH35H)
<b>Derating</b>	100% @ 25°C to 0% @ 150°C curve referenced to case temperature
<b>Dielectric Strength</b>	1,800VAC
<b>Operating Temperature Range</b>	-55°C to +150°C
<b>Temperature Coefficient</b>	Referenced to 25°C, $\Delta R$ taken at +105°C 10Ω and above: ±50 ppm/°C For under 10Ω: 3R to 9R9: 100ppm 1R to 2R9: 300ppm 0R1 to 0R99: 700ppm 0R05 to 0R09: 1000ppm
<b>Inductance</b>	less than 20 nanohenries
<b>Flatness</b>	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 215°C (260°C for the TDH35H)!

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

### Derating



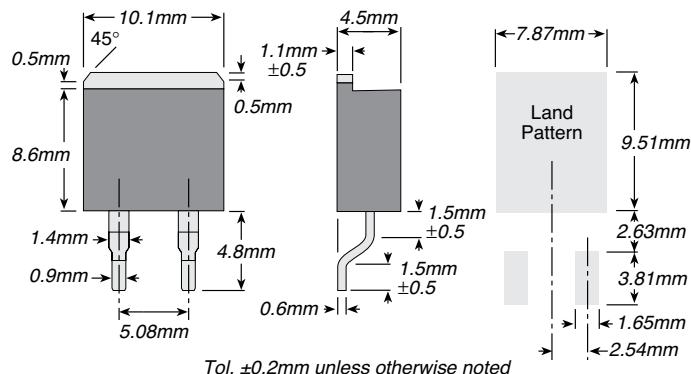
**Derating (thermal resistance):**  $0.23\text{W}/^\circ\text{C}$  ( $4.28^\circ\text{C}/\text{W}$ ). The case temperature is to be used for purposes of establishing the applied power limit. The case temperature measurement must be made with a thermocouple contacting the center of the component mounted on the designed heat sink. Thermal grease should be applied properly.

(continued)

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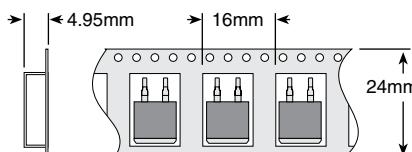
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### DIMENSIONS



### Tape Dimensions

750 pc./reel



### ORDERING INFORMATION

#### Standard Part Numbers

**T D H 3 5 P R 1 0 0 J E - T R**  
 Style      Package      Ohms      Tolerance      RoHS Compliant  
 Modifier      R = Decimal      F = 1%      Non-compliant  
 P = low temp.      Example:      J = 5%      version unavailable  
 H = high temp.      R100 = 0.10      K = 10%  
 1R00 = 1.0  
 10K0 = 10,000

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	TDH35P10R00JE	1000	TDH35P1K00JE
		1500	TDH35P1K50JE
15	TDH35P15R00JE	2500	TDH35P2K50JE
20	TDH35P20R00JE	3000	TDH35P3K00JE
		5000	TDH35P5K00JE

#### THIS PRODUCT IS DESIGNED FOR USE WITH PROPER HEATSINKING.

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.

# Mouser Electronics

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