

Ohmite's TCH35 TO220 package resistor provides 35W of steady state power when properly used in today's well defined heat sink applications.

These very low induction resistors are built under proprietary processes that deliver more power handling capability than other TO220 package resistors of similar size.

Standard terminal forms are provided for manual or automatic insertion.

A single screw mounting tab connects to the heat sink and should be accompanied by the use of a thermal compound. The TCH35 Series offers a low thermal resistance to the heat sink of  $<4.28^{\circ}\text{C/W}$ .

## FEATURES

- 35W Power Rating @  $25^{\circ}\text{C}$
- Very Low Inductance Design
- Single Screw Mounting
- Low Thermal Resistance to Heat Sink @  $R_{TH} < 4.28^{\circ}\text{C/W}$
- Resistance Element is Electrically Insulated from Metal Heat Sink Mounting Tab

## APPLICATIONS

- Switching Power Supplies
- Snubbers
- High Frequency
- Voltage Regulation
- Low Energy Pulse Loading

## SPECIFICATIONS

### Electrical

**Resistance Range:**  $0.1\Omega$  to  $10\text{K}\Omega$   
(higher values on request subject to derating)

### Resistance Tolerance:

- $\pm 5\%$  standard
- $\pm 1\%$  available on request

### Temperature Coefficient:

Referenced to  $25^{\circ}\text{C}$ ,  
 $\Delta R$  taken at  $+105^{\circ}\text{C}$   
 $10\Omega$  and above:  $\pm 50 \text{ ppm}/^{\circ}\text{C}$   
For under  $10\Omega$ :

0R6 - 9R9 ..... 100PPM  
0R4 - 0R59 ..... 150PPM  
0R2 - 0R39 ..... 250PPM  
0R1 - 0R19 ..... 500PPM  
0R05 - 0R09 ... 1000PPM

**Max. Operating Voltage:** 350V

**Dielectric Strength:** 1800 VAC

**Insulation Resistance:**  $10\text{G}\Omega$  min.

**Momentary Overload:** 2x rated power for 5 seconds as long as the applied voltage  $\leq 1.5$  times the continuous operating voltage, where  $\Delta R \pm (0.3\% + 0.01\Omega)$  max

**Terminal Material:** Copper

**Terminal Plating:** Lead Free Solder (97% Tin, 3% Silver)

**Maximum Torque:** 0.9 Nm

**Power Rating:** 35 Watts @  $25^{\circ}\text{C}$  case temperature; see derating curve, below

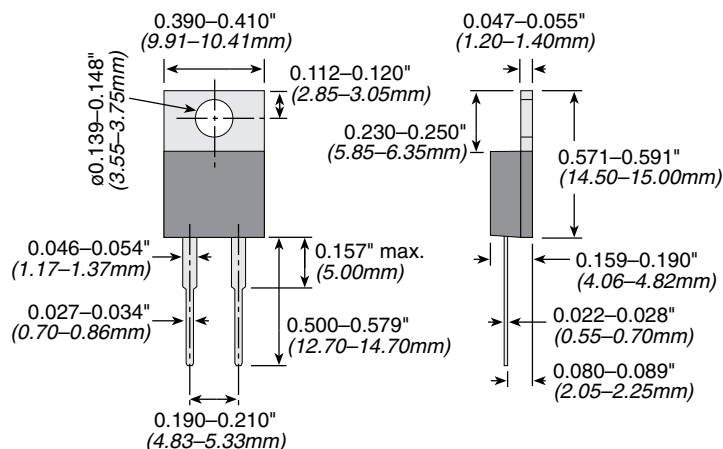
**Working Temperature Range:**  $-55^{\circ}\text{C}$  to  $+175^{\circ}\text{C}$

**Solder Process:** The TCH35 cannot exceed  $260^{\circ}\text{C}$  for more than 10 seconds during soldering process.



# TCH Series

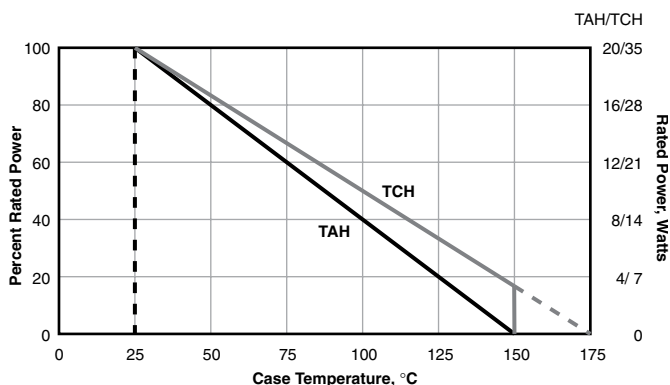
## 35 Watt TO220 Package Thick Film Power



## TEST DATA

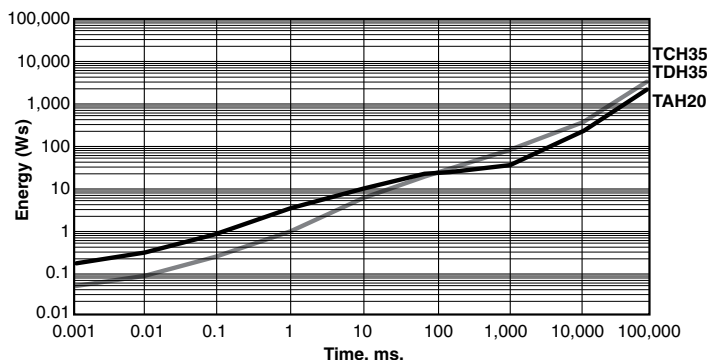
|                            |                                                     |                                            |
|----------------------------|-----------------------------------------------------|--------------------------------------------|
| <b>Load Life</b>           | MIL-R-39009, 2000 Hours @ Rated Pwr                 | $\Delta R = \pm (1.0\% + 0.01) \Omega$     |
| <b>Thermal Shock</b>       | MIL-R-STD-202, Method 107, Cond. F                  | $\Delta R = \pm (0.3\% + 0.01) \Omega$ max |
| <b>High Freq Vibration</b> | MIL-R-STD-202, Method 204, Cond. D                  | $\Delta R = \pm (0.2\% + 0.01) \Omega$ max |
| <b>Terminal Strength</b>   | MIL-R-STD-202, Method 211, Cond. A (Pull Test) 2.4N | $\Delta R = \pm (0.2\% + 0.01) \Omega$ max |
| <b>Moisture Resistance</b> | MIL-R-STD-202, Method 106                           | $\Delta R = \pm (0.5\% + 0.01) \Omega$ max |

## DERATING CURVE



## PULSE-FORM

E-function, time between two pulses: 1 sec.



## ORDERING INFORMATION

**TCH35P10R0JE**

Series

Package Code

Ohm Value  
Example:  
2R40 = 2.4 Ohms  
2K40 = 2400 Ohms

Tolerance  
F = 1%  
J = 5% Standard

RoHS Compliant  
Non-compliant  
version unavailable

Check product availability at [www.ohmite.com](http://www.ohmite.com)

## STANDARD PART NUMBERS

|              |              |              |              |              |
|--------------|--------------|--------------|--------------|--------------|
| TCH35P100RJE | TCH35P220RJE | TCH35P330RJE | TCH35P510RJE | TCH35P200JE  |
| TCH35P10K0JE | TCH35P22R0JE | TCH35P390RJE | TCH35P51R0JE | TCH35P220JE  |
| TCH35P10R0JE | TCH35P240RJE | TCH35P39R0JE | TCH35P5K10JE | TCH35P240JE  |
| TCH35P150RJE | TCH35P24R0JE | TCH35P3K30JE | TCH35P5R10JE | TCH35P330JE  |
| TCH35P15R0JE | TCH35P2K00JE | TCH35P3K90JE | TCH35P5R60JE | TCH35P390JE  |
| TCH35P1K00JE | TCH35P2K20JE | TCH35P3R30JE | TCH35P750RJE | TCH35P470JE  |
| TCH35P1K50JE | TCH35P2K40JE | TCH35P3R90JE | TCH35P75R0JE | TCH35P510JE  |
| TCH35P1R00JE | TCH35P2R00JE | TCH35P470RJE | TCH35P7K50JE | TCH35P560JE  |
| TCH35P1R50JE | TCH35P2R20JE | TCH35P47R0JE | TCH35P7R50JE | TCH35P750JE  |
| TCH35P200RJE | TCH35P2R40JE | TCH35P4K70JE | TCH35P8100JE | TCH35P8100JE |
| TCH35P20R0JE | TCH35P330RJE | TCH35P4R70JE | TCH35P150JE  |              |