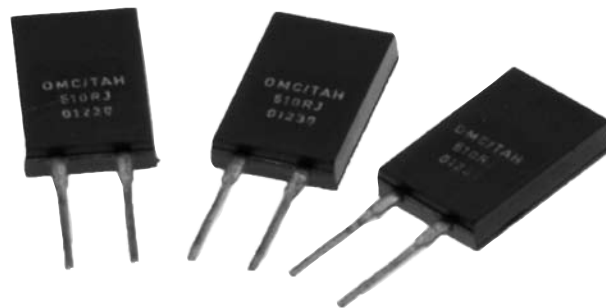


# TAH Series

## 20 Watt TO220 Package Thick Film Power



The TAH20 is a completely encapsulated thick film resistor in the TO220 package outline. Rated for 20 watts @ 25°C case temperature, these resistors are electrically isolated, and molded in a high temperature case.

Designed for heat sink mounting, the symmetrical package is ready for use with snap-on style heat sinks (we recommend use of thermal grease). The TAH20 Series has very low inductance, and available in a wide range of resistance values in standard 5% tolerance. 1% tolerance available by special order.

### FEATURES

- 20 Watt Power Rating at 25°C Case Temperature
- High Pulse Tolerant Design
- Quick-snap Molded Package
- Very Low Inductance Design
- Resistor Package Electrically Isolated from Heat Sink
- Low Thermal Resistance to Heat Sink @  $R_{TH} < 6.25^{\circ}\text{C/W}$
- Tube Packaging Available

### APPLICATIONS

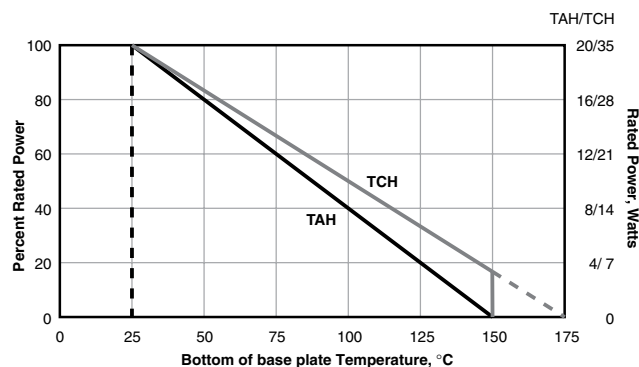
- Frequency Conversion
- High Frequency Balancing
- Snubbers

### CHARACTERISTICS

|                                |                                                                                                                                                         |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Resistance Range</b>        | 0.05Ω to 10KΩ, other values available upon request                                                                                                      |
| <b>Tolerance</b>               | <0.1Ω: 5% only<br>0.1Ω-1MΩ: 5% std.; 1% available                                                                                                       |
| <b>Temperature Coefficient</b> | Referenced to 25°C, ΔR taken at +105°C;<br>1 to 10Ω: $\pm(100\text{ppm}+0.002\Omega)/^{\circ}\text{C}$<br>10Ω & up: $\pm 50\text{ppm}/^{\circ}\text{C}$ |
| <b>Max Operating Voltage</b>   | 350V                                                                                                                                                    |
| <b>Dielectric Strength</b>     | 1,800 VAC                                                                                                                                               |
| <b>Power Rating</b>            | 20W @ 25°C case temperature; see derating curve, below                                                                                                  |
| <b>Insulation Resistance</b>   | 10GΩ min.                                                                                                                                               |
| <b>Momentary Overload</b>      | 2x rated power for 5 seconds where applied voltage $\leq 1.5$ times max. operating voltage.<br>$\Delta R \pm(0.3\% + 0.001\Omega)$ max.                 |
| <b>Case Material</b>           | KMC-125 epoxy                                                                                                                                           |
| <b>Terminal Material</b>       | Copper                                                                                                                                                  |
| <b>Terminal Plating</b>        | Lead Free Solder (97% Tin, 3% Silver)                                                                                                                   |
| <b>Mounting</b>                | Requires the use of a snap-on style heat sink. A thermal compound should be properly applied.                                                           |
| <b>Solder Process</b>          | The TAH20 cannot exceed 260°C for more than 10 seconds during soldering process.                                                                        |

|                            |                                                     |                                            |
|----------------------------|-----------------------------------------------------|--------------------------------------------|
| <b>Load Life</b>           | MIL-R-39009, 2000 Hours @ Rated Pwr                 | $\Delta R = \pm(1.0\% + 0.001) \Omega$     |
| <b>Thermal Shock</b>       | MIL-R-STD-202, Method 107, Cond. F                  | $\Delta R = \pm(0.3\% + 0.001) \Omega$ max |
| <b>High Freq Vibration</b> | MIL-R-STD-202, Method 204, Cond. D                  | $\Delta R = \pm(0.2\% + 0.001) \Omega$ max |
| <b>Terminal Strength</b>   | MIL-R-STD-202, Method 211, Cond. A (Pull Test) 2.4N | $\Delta R = \pm(0.2\% + 0.001) \Omega$ max |
| <b>Moisture Resistance</b> | MIL-R-STD-202, Method 106                           | $\Delta R = \pm(0.5\% + 0.01) \Omega$ max  |

### Derating



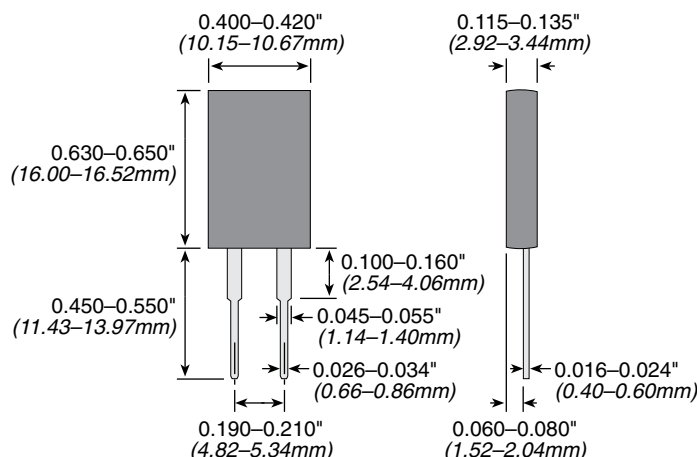
(continued)

# TAH Series

## 20 Watt TO220 Package Thick Film Power

### DIMENSIONS

(iin./mm)



### ORDERING INFORMATION

| TAH 20 P 10 R 0 J E |  | Tolerance                 |
|---------------------|--|---------------------------|
| Series              |  | F = 1%<br>J = 5% Standard |
| Package Code        |  |                           |
| Ohm Value           |  | RoHS Compliant            |
| Example:            |  | Non-compliant             |
| 2R40 = 2.4 Ohms     |  | version unavailable       |
| 2K40 = 2400 Ohms    |  |                           |

### Standard Part Numbers

|              |              |              |              |              |
|--------------|--------------|--------------|--------------|--------------|
| TAH20P100RJE | TAH20P220RJE | TAH20P330RJE | TAH20P470RJE | TAH20PR100JE |
| TAH20P10K0JE | TAH20P22R0JE | TAH20P390RJE | TAH20P510RJE | TAH20PR150JE |
| TAH20P10R0JE | TAH20P240RJE | TAH20P39R0JE | TAH20P51R0JE | TAH20PR200JE |
| TAH20P150RJE | TAH20P24R0JE | TAH20P3K30JE | TAH20P5K10JE | TAH20PR220JE |
| TAH20P15R0JE | TAH20P2K00JE | TAH20P3K90JE | TAH20P5R10JE | TAH20PR240JE |
| TAH20P1K00JE | TAH20P2K20JE | TAH20P3R30JE | TAH20P750RJE | TAH20PR330JE |
| TAH20P1K50JE | TAH20P2K40JE | TAH20P3R90JE | TAH20P75R0JE | TAH20PR390JE |
| TAH20P1R00JE | TAH20P2R00JE | TAH20P470RJE | TAH20P7K50JE | TAH20PR470JE |
| TAH20P1R50JE | TAH20P2R20JE | TAH20P47R0JE | TAH20P7R50JE | TAH20PR510JE |
| TAH20P200RJE | TAH20P2R40JE | TAH20P4K70JE | TAH20PR050JE | TAH20PR750JE |
| TAH20P20R0JE | TAH20P330RJE |              |              |              |

### 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.