

# TEH140 Series



## 140 Watt TO-247 Power Resistors for High Frequency and Pulse Loading Applications

### FEATURES

- 140W high power resistor in TO-247 molded package
- Only 0.9°C/W heat resistance between resistor and flange for excellent cooling
- Wide 10mΩ to 510kΩ resistance range, non-inductive design fit for high frequency circuit and wide band amplifiers
- Small size and thin shape provides for high density design of power electronics
- Complete thermal conduction and heat dissipation design will be available
- Applications include power electronics / inverter of automotive, rail traction, wind turbine, PV, UPS and industrial motor control as harmonic filter, dumping, snubber, gate control, bleeder resistor and rush current protection



### SPECIFICATIONS

Resistance range*	Nom. Resistance	TCR	Tolerance
0.01Ω - 0.099Ω	+E12	>250ppm/°C	±5%
0.1Ω - 510KΩ	+E24	100ppm/°C	±1%, ±5%

### CHARACTERISTICS

<b>Construction</b>	Thick Film
<b>Rating Power</b>	140 Watts at 25°C flange temperature
<b>Rating Power</b>	3.0 Watts, Free air.
<b>Heat Resistance</b>	0.9°C/W From resistor to flange
<b>Capacitance</b>	3.68 pF At point of terminal length 10mm
<b>Inductance</b>	12.25 nH At point of terminal length 10mm
<b>Operation Temp. Range</b>	-55 - +175°C
<b>Max. Applied Voltage</b>	500V or $\sqrt{P \cdot R}$
<b>Max. Operating Current</b>	120A
<b>Weight</b>	7.2 grams

<b>Short Time Overload</b>	±0.5%	1.5 times rated power for 5 seconds
<b>Withstanding Voltage</b>	2500VAC	60 seconds. 1mA
<b>Load Life</b>	±1.0%	25°C, 90 min.ON, 30min.OFF, 1000hours.
<b>Humidity</b>	±1.0%	70°C, 90 - 95%RH, DC0.1W, 1000hours.
<b>Temperature Cycle</b>	±0.25%	-55°C, 30 min., +155°C 30min., 5 cycles.
<b>Soldering Heat</b>	±0.25%	350±5°C, 3seconds,
<b>Solderability</b>	Over 3/4 of round	230±5°C, 3seconds.
<b>Insulation Resistance</b>	Over 1000MΩ	Between terminals and tab.
<b>Vibration</b>	±0.25 %	
<b>Flammability</b>	UL94V-0	

#### 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.

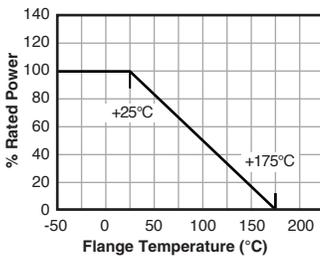
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# TEH140 Series

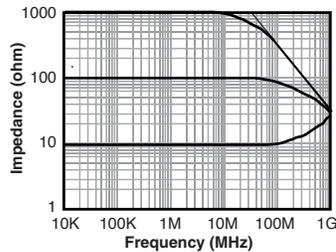
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### CHARACTERISTICS

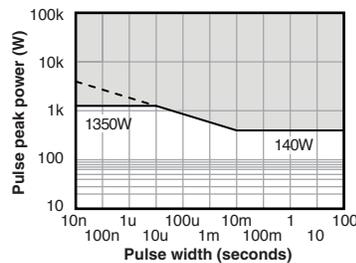
#### Derating



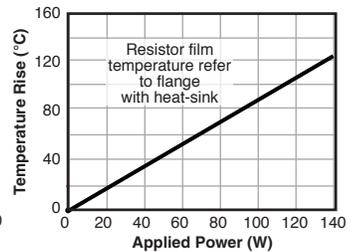
#### Frequency Characteristics



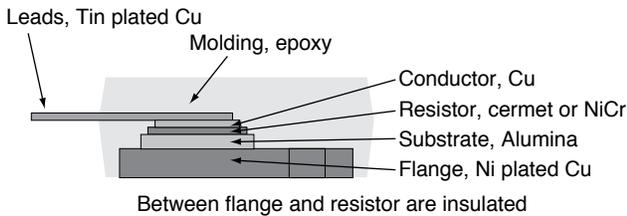
#### Pulse Energy Durability



#### Temperature Rise



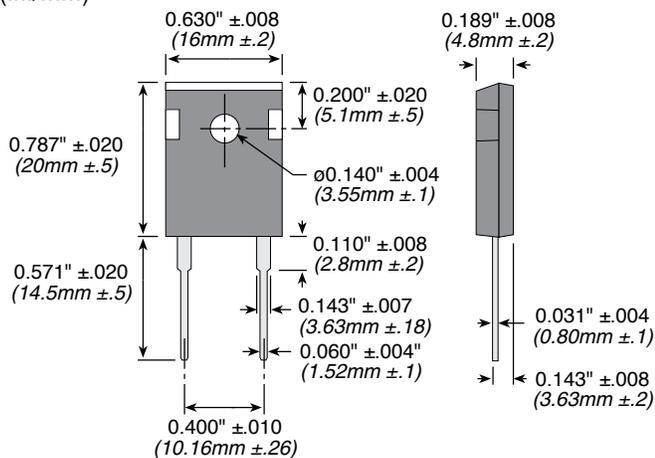
#### Construction



Tentative continuous-pulse power allowance at duty 0.01. Load life test will be necessary in actual equipment, Because curve will be changed by resistance, repetition, duty and operating temperature. Dotted is estimation.

### DIMENSIONS

(in./mm)



### ORDERING INFORMATION

TEH140M10R0FE		RoHS Compliant	
Series	Modifier	Ohms	Tolerance
		R = Decimal	F = 1%
		Example:	J = 5%
		2R50 = 2.50Ω	
		25R0 = 25Ω	
		100R = 100Ω	
		1K00 = 1000Ω	

#### Standard part numbers

TEH140MR010JE	TEH140M33R0FE
TEH140MR050FE	TEH140M50R0FE
TEH140MR030FE	TEH140M75R0FE
TEH140MR040FE	TEH140M100RFE
TEH140M1R00FE	TEH140M270RFE
TEH140M2R00FE	TEH140M330RFE
TEH140M3R00FE	TEH140M470RFE
TEH140M5R00FE	TEH140M750RFE
TEH140M10R0FE	TEH140M1K00FE
TEH140M12R0FE	TEH140M4K70FE
TEH140M15R0FE	TEH140M7K50FE
TEH140M20R0FE	TEH140M10K0FE