

# TGH Series

## 120 and 200 Watt SOT227Package Thick Film Power



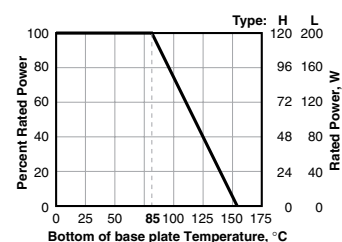
Due to their non-inductive design, these resistors are ideally suited for high-frequency and pulse-load applications. Available in 120- or 200-watt sizes, this resistor is designed for direct mounting onto a heatsink. Popular applications include variable speed drives, power supplies, control devices, telecom, robotics, motor controls, and other switching designs.



### CHARACTERISTICS

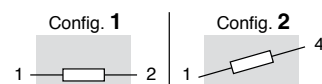
|                                            |                                                                       |
|--------------------------------------------|-----------------------------------------------------------------------|
| <b>Heat Sink</b>                           | Nickel-plated copper                                                  |
| <b>Contacts</b>                            | Nickel-plated copper                                                  |
| <b>Substrate</b>                           | Al2O3 (96%)                                                           |
| <b>Molding Compound</b>                    | High-performance epoxy, compliant to UL94-V0                          |
| <b>Terminal Nuts</b>                       | American standard 303 stainless steel                                 |
| <b>Resistance Range</b>                    | 0.1Ω to 1MΩ                                                           |
| <b>Tolerance</b>                           | ±5%; other tolerances available on request                            |
| <b>Temperature coefficient:</b>            | ±250ppm (at +105°C ref. to +25°C)                                     |
| <b>Max. Working Voltage</b>                | 500V (1000V, not to exceed rated wattage using $\sqrt{P \cdot R_s}$ ) |
| <b>Power Rating at 85°C</b>                | 120W (see derating)                                                   |
| <b>Partial Discharge</b>                   | up to 2,000Vrms/80 pC                                                 |
| <b>Voltage Proof</b>                       | Dielectric Strength up to 4,000V DC against ground                    |
| <b>Heat Resistance to Cooling Plate</b>    | $R_{th} < 0.35$ K/W                                                   |
| <b>Capacitance/Mass</b>                    | 45pF                                                                  |
| <b>Working Temp. Range</b>                 | -55°C to +155°C                                                       |
| <b>Max. Torque for Base Plate (static)</b> | 1.5 Nm                                                                |
| <b>Max. Torque for Contacts (static)</b>   | 1.3 Nm. M4 screws (not included)                                      |
| <b>Derating (thermal resistance)</b>       | 2.86W/°K (0.35°K/W)                                                   |

### Derating



### Configurations

(per package)



### PERFORMANCE DATA

| Test                                                                                                                         | Method                                                                             | $\Delta R$          |
|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------|
| Moisture Resistance                                                                                                          | MIL-Std-202, Method 106                                                            | (0.5% + 0.001W) max |
| Thermal shock                                                                                                                | Mil-Std-202, Method 107, Cond F                                                    | (0.3% + 0.01W) max  |
| Terminal Strength                                                                                                            | MIL-Std-202, Method 211, Cond A (pull test) 2.4N                                   | (0.2% = 0.01W) max  |
| Vibration, High Frequency                                                                                                    | MIL-Std-202, Method 204, Cond D                                                    | (0.2% + 0.01W) max  |
| Life                                                                                                                         | 20 years (120,000 hours) Operating failure rate of $8.3 \times 10^{-7}$ fail/hour. |                     |
| Requirements to be achieved under the following conditions: $T_{amb}=25^{\circ}C$ , $T_{HS}=70^{\circ}C$ , $P_{applied}=P_n$ |                                                                                    |                     |

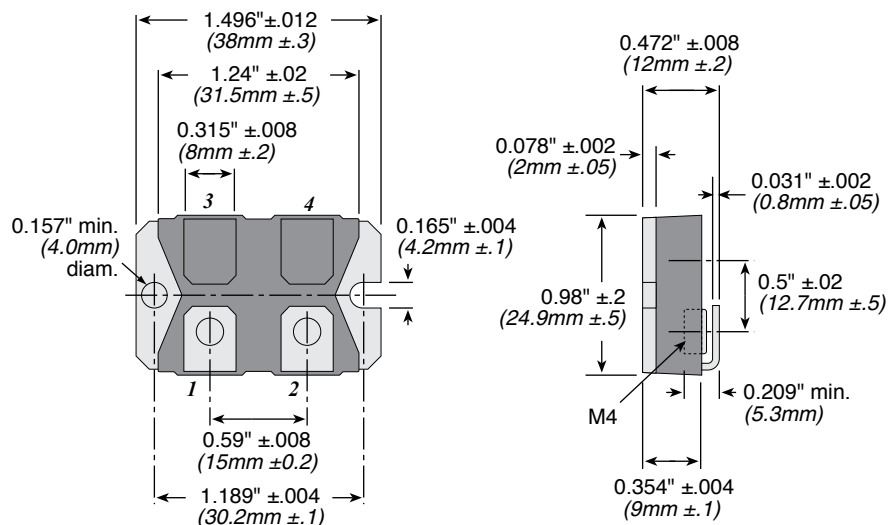
(continued)

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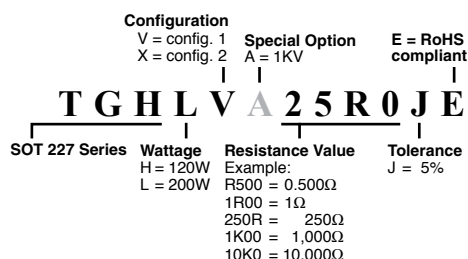
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### DIMENSIONS

(iin./mm)



### ORDERING INFORMATION



### Standard Part Numbers

| Ohms | 120 Watt TGHH | 200 Watt TGHV |
|------|---------------|---------------|
| 0.1  | TGHHVR100JE   | TGHLVR100JE   |
| 0.5  | TGHHVR500JE   | TGHLVR500JE   |
| 1    | TGHHV1R00JE   | TGHLV1R00JE   |
| 5    | TGHHV5R00JE   | TGHLV5R00JE   |
| 10   | TGHHV10R0JE   | TGHLV10R0JE   |
| 25   | TGHHV25R0JE   | TGHLV25R0JE   |
| 33   | TGHHV33R0JE   | TGHLV33R0JE   |
| 50   | TGHHV50R0JE   | TGHLV50R0JE   |
| 100  | TGHHV100RJE   | TGHLV100RJE   |
| 150  | TGHHV150RJE   | TGHLV150RJE   |
| 500  | TGHHV500RJE   | TGHLV500RJE   |
| 680  | TGHHV680RJE   | TGHLV680RJE   |
| 1K   | TGHHV1K00JE   | TGHLV1K00JE   |
| 5K   | TGHHV5K00JE   | TGHLV5K00JE   |
| 10K  | TGHHV10K0JE   | TGHLV10K0JE   |

### 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.