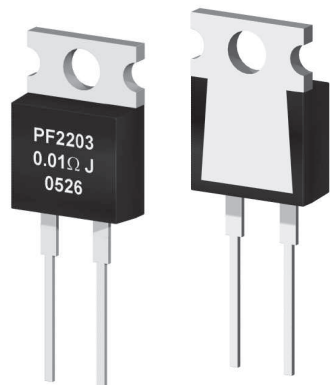
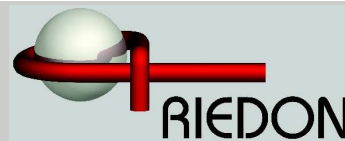


PF2200 Series

TO-220 Power Thin Film Resistors



- TO-220 Housing
- Rated Power to 50 Watts
- Resistances from 0.02 to 51K Ohms
- High Stability Film Resistance Elements
- Resistance Tolerance to $\pm 0.1\%$
- TCR to $\pm 50\text{ppm}/^\circ\text{C}$
- Low Inductance ($< 10\text{nH}$)
- Isolated Mounting Tab

SPECIFICATIONS

| Type | Power Rating | | Thermal Resistance | Resistance Range ³ | | Tolerances | Temperature Coefficients |
|--------|-----------------------|-----------------------|--------------------|-------------------------------|------|---|---|
| | Heatsink ¹ | Free Air ² | | Min | Max | | |
| PF2205 | 50W | 1W | 2.3°C/W | 0.02Ω | 51KΩ | $\pm 1\%$ ($R \geq 0.1\Omega$) $\pm 5\%$ | $\pm 50\text{ppm}/^\circ\text{C}$ ($R \geq 10\Omega$) $\pm 100\text{ppm}/^\circ\text{C}$ ($0.1\Omega \leq R < 10\Omega$) $\pm 250\text{ppm}/^\circ\text{C}$ ($R < 0.1\Omega$) |
| PF2203 | 35W | 1W | 3.3°C/W | 0.01Ω | 51KΩ | 1% ($R \geq 0.1\Omega$) $\pm 5\%$ | $\pm 50\text{ppm}/^\circ\text{C}$ ($R \geq 10\Omega$) $\pm 100\text{ppm}/^\circ\text{C}$ ($0.1\Omega \leq R < 10\Omega$) $\pm 250\text{ppm}/^\circ\text{C}$ ($R < 0.1\Omega$) |
| PF2202 | 20W | 1W | 5.9°C/W | 0.02Ω | 51KΩ | 0.1%, 0.25%, 0.5%, ($R \geq 10\Omega$) $\pm 1\%$ ($R \geq 0.1\Omega$) $\pm 5\%$ | $\pm 50\text{ppm}/^\circ\text{C}$ ($R \geq 10\Omega$) $\pm 100\text{ppm}/^\circ\text{C}$ ($0.1\Omega \leq R < 10\Omega$) $\pm 250\text{ppm}/^\circ\text{C}$ ($R < 0.1\Omega$) |

- ¹ Power rating based on 25°C Flange Temperature
² Power rating based on 25°C Ambient Temperature
³ Consult Factory for Higher or Lower Values

| Specification | Value |
|------------------------|---|
| Temperature Range | -55°C to +175°C |
| Dielectric Strength | 2000 VAC |
| Max. Operating Voltage | $\sqrt{P * R}$ (500V MAX) |
| Insulation Resistance | >1000 Meg-Ohm |
| Terminal Finish | Tin Plated Copper |
| Inductance | PF2202 / PF2203 8.38 nH, PF2205 9.65 nH |

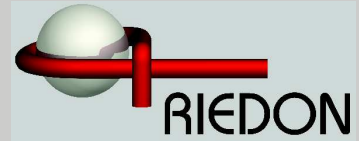
Ordering Information

Part Description: Part Type - Resistance - Tolerance - TCR
 Example: PF2203 0.5 Ohm 1% 100ppm



PF2200 Series

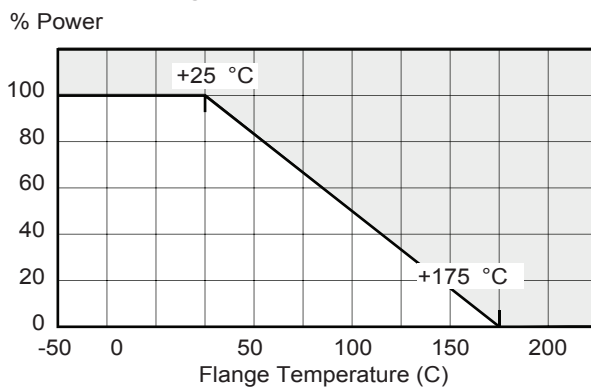
TO-220 Power Thin Film Resistors



SPECIFICATIONS (continued)

| Environmental Performance | ΔR | Test Conditions |
|---------------------------|--------------|---|
| Load Life | $\pm 1\%$ | 25°C, 90 min ON, 30 min OFF, 1000 hr |
| Humidity Resistance | $\pm 1\%$ | 40°C, 90-95% RH, DC 0.1W, 1000 hr |
| Temperature Cycle | $\pm 0.25\%$ | -55°C for 30 min, +155°C for 30 min, 5 cycles |
| Solder Heat | $\pm 0.1\%$ | +350 / -5°C 3s |
| Vibration | $\pm 0.25\%$ | IEC60068-2-6 |

Power Derating



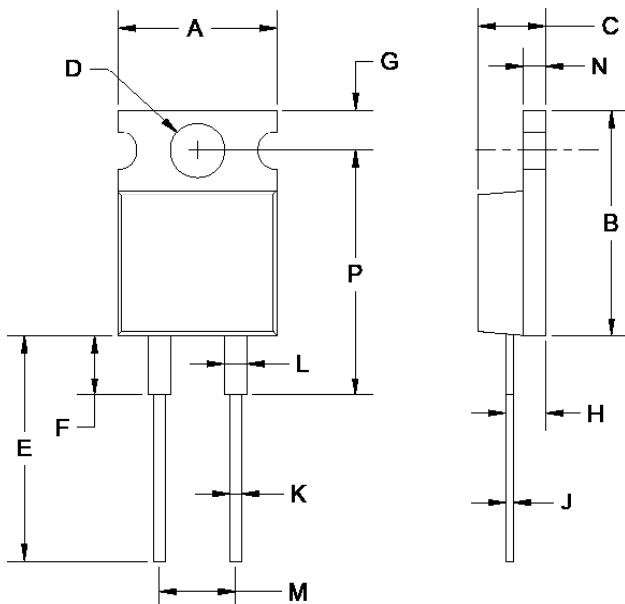
Power Rating Notes -

The PF2200 Series Thin Film Resistors must be attached to a suitable heatsink. Without a heatsink the maximum power rating is 1W (1/2W for the PF2201). The maximum internal resistor temperature is 175°C.

To specify an appropriate heatsink use the following formula :

$$R_{\theta H} = \frac{T_{MAX} - (P * R_{\theta R}) - T_A}{P}$$

Where: $R_{\theta H}$ = Thermal Resistance of Heatsink (°C/W)
 $R_{\theta R}$ = Thermal Resistance of Resistor (°C/W)
 T_{MAX} = Maximum Temperature of Resistor (°C)



| | mm | tol. (±mm) | inches | tol. (±inches) |
|---|------|---------------|--------|-------------------|
| A | 10.1 | 0.2 | 0.40 | 0.008 |
| B | 15.0 | 0.2 | 0.60 | 0.008 |
| C | 4.5 | 0.2 | 0.18 | 0.008 |
| D | 3.6 | 0.1 | 0.14 | 0.004 |
| E | 15.5 | 1.0 | 0.61 | 0.04 |
| F | 4.0 | 0.5 | 0.16 | 0.02 |
| G | 3.0 | 0.2 | 0.12 | 0.008 |
| H | 2.75 | 0.2 | 0.11 | 0.008 |
| J | 0.5 | 0.05 | 0.02 | 0.002 |
| K | 0.75 | 0.05 | 0.03 | 0.002 |
| L | 1.5 | 0.05 | 0.06 | 0.002 |
| M | 5.08 | 0.1 | 0.20 | 0.004 |
| N | 1.5 | 0.05 | 0.06 | 0.002 |
| P | 16.0 | 0.50 | 0.63 | 0.02 |

Mounting Notes -

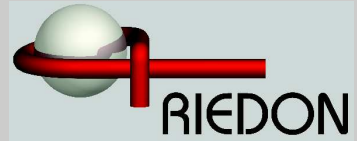
The PF2200 Series Thin Film Resistors must be attached to a suitable heatsink. Mount resistor using thermal grease to a clean, flat surface. Use a compression washer to provide 150 to 300 pounds (665 to 1330N) of mounting force. Torque mounting screw to 8 in-lbs (0.9 N-m).

Mounting tab is isolated from both pins.



PF2200 Series

TO-220 Power Thin Film Resistors



PULSE ENERGY DURABILITY

