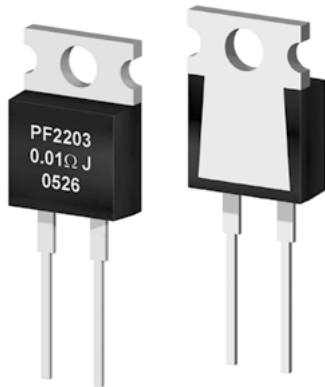


PF2200 Series

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 $\pm 5\text{ppm}/^\circ\text{C}$
- 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	0.02Ω	51KΩ	$\pm 1\%$ ($R \geq 0.1\Omega$) $\pm 5\%$	$\pm 50\text{ppm}/^\circ\text{C}$ ($R \geq 10\Omega$) $\pm 100\text{ppm}/^\circ\text{C}$ ($0.1\Omega \leq R < 10\Omega$) $\pm 250\text{ppm}/^\circ\text{C}$ ($R < 0.1\Omega$)
PF2202	20W	1W	5.9°C/W	0.02Ω	220Ω	$\pm 1\%$ ($R \geq 0.1\Omega$) $\pm 5\%$	$\pm 50\text{ppm}/^\circ\text{C}$ ($R \geq 10\Omega$) $\pm 100\text{ppm}/^\circ\text{C}$ ($0.1\Omega \leq R < 10\Omega$) $\pm 250\text{ppm}/^\circ\text{C}$ ($R < 0.1\Omega$)
	10W	1W		220Ω	51KΩ	$\pm 1\%$, $\pm 5\%$	$\pm 50\text{ppm}/^\circ\text{C}$
PF2201	10W	0.5W	3.3°C/W	1Ω	51KΩ	$\pm 0.1\%$	$\pm 5\text{ppm}/^\circ\text{C}$ ($R \geq 5\Omega$) $\pm 25\text{ppm}/^\circ\text{C}$ ($R < 5\Omega$)

- 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

Ordering Information

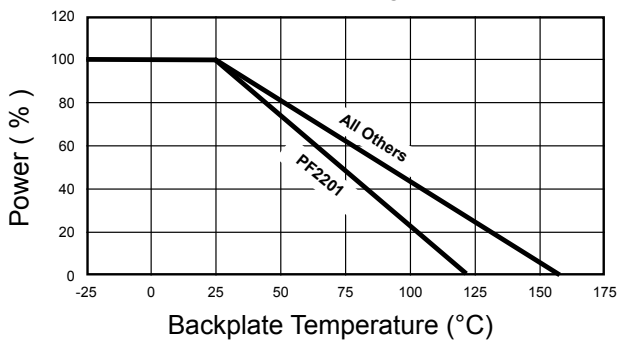
Part Description: Part Type - Resistance - Tolerance - TCR

Example: PF2203 0.5 Ohm 1% 100ppm

SPECIFICATIONS (continued)

Specification	Value	
Maximum Current	25A	
Temperature Range	-55°C to +155°C : PF2202, PF2203, PF2205 -55°C to +120°C : PF2201	
Dielectric Strength	2000 VAC	
Max. Operating Voltage	$\sqrt{P * R}$ (500V MAX)	
Insulation Resistance	>1000 Meg-Ohm	
Inductance	<10nH (At the Standoff)	
Environmental Performance	ΔR	Test Conditions
Load Life	$\pm 1\% + 0.05\Omega$	25°C, 90 min ON, 30 min OFF, 1000 hr
Humidity Resistance	$\pm 1\% + 0.05\Omega$	40°C, 90-95% RH, DC 0.1W, 1000 hr
Temperature Cycle	$\pm 0.25\% + 0.05\Omega$	-55°C for 30 min, +155°C for 30 min, 1000 hr
Solder Heat	$\pm 0.1\% + 0.05\Omega$	+350°C, 3s
Vibration	$\pm 0.25\% + 0.05\Omega$	IEC60068-2-6

Power Derating Curve



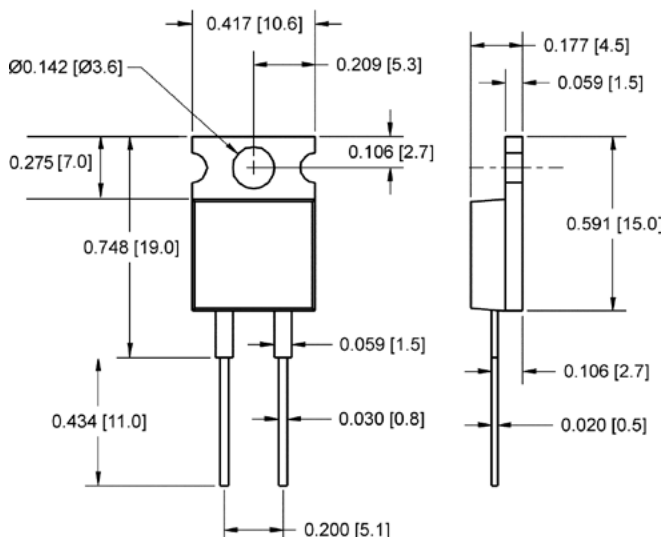
Power Rating Notes -

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 155°C (120°C for the PF2201).

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)
 T_A = Ambient Temperature of Heatsink (°C)
 P = Power Through Resistor (W)



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.