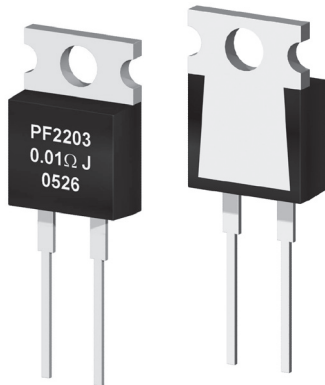


# PF2200 Series

TO-220 Power Film Resistors



- TO-220 Housing
- Rated Power to 50 Watts
- Resistances from 0.01 to 51K Ohms
- High Stability Film Resistance Elements
- Resistance Tolerance to  $\pm 1\%$
- Low Inductance ( <50nH )
- Isolated Mounting Tab

## SPECIFICATIONS

Type	Power Rating		Thermal Resistance	Resistance Range <sup>3</sup>		Tolerances	Temperature Coefficients
	Heatsink <sup>1</sup>	Free Air <sup>2</sup>		Min	Max		
PF2205	50W	1W	2.3°C/W	0.01Ω	220Ω	$\pm 1\%$ ( $R \geq 0.1\Omega$ ) $\pm 5\%$	$\pm 50\text{ppm}/^\circ\text{C}$ ( $R \geq 10\Omega$ ) $\pm 100\text{ppm}/^\circ\text{C}$ ( $0.1\Omega \leq R < 10\Omega$ ) $\pm 250\text{ppm}/^\circ\text{C}$ ( $R < 0.1\Omega$ )
	30W	1W	2.3°C/W	220Ω	51KΩ	$\pm 1\%$ , $\pm 5\%$	$\pm 50\text{ppm}/^\circ\text{C}$
PF2203	35W	1W	3.3°C/W	0.01Ω	220Ω	$\pm 1\%$ ( $R \geq 0.1\Omega$ ) $\pm 5\%$	$\pm 50\text{ppm}/^\circ\text{C}$ ( $R \geq 10\Omega$ ) $\pm 100\text{ppm}/^\circ\text{C}$ ( $0.1\Omega \leq R < 10\Omega$ ) $\pm 250\text{ppm}/^\circ\text{C}$ ( $R < 0.1\Omega$ )
	20W	1W	3.3°C/W	220Ω	51KΩ	$\pm 1\%$ , $\pm 5\%$	$\pm 50\text{ppm}/^\circ\text{C}$
PF2202	20W	1W	5.9°C/W	0.01Ω	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	5.9°C/W	220Ω	51KΩ	$\pm 1\%$ , $\pm 5\%$	$\pm 50\text{ppm}/^\circ\text{C}$

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

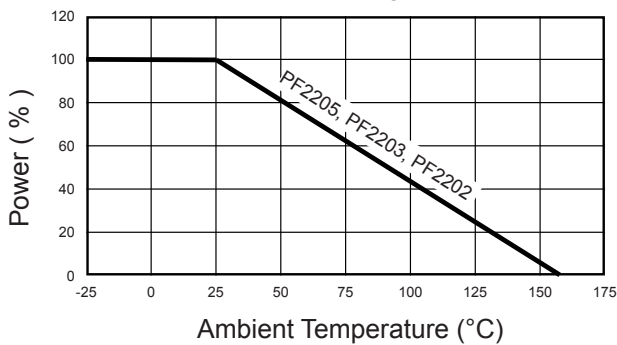
## Ordering Information

Part Number - 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	
Dielectric Strength	2000 VAC	
Max. Operating Voltage	500 V	
Insulation Resistance	>1000 Meg-Ohm	
Environmental Performance	$\Delta R$	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



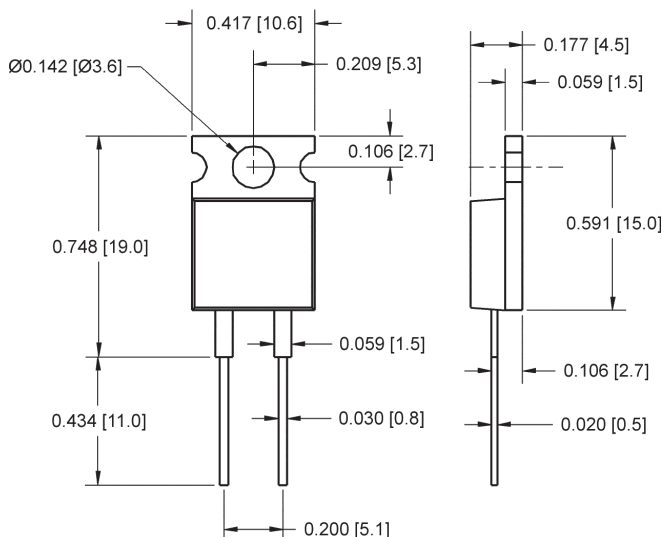
#### Power Rating Notes -

The PF2200 Series Foil Resistors must be attached to a suitable heatsink. The maximum internal resistor temperature is 155°C.

To specify an appropriate heatsink use the following formula :

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

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



#### Mounting Notes -

The PF2200 Series 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.