

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 ($< 10\text{nH}$)
- Excellent Pulse Handling
- 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
Flammability	UL94 V-0
Mass	2.1g

Ordering Information

Part Description: Part Type - Resistance - Tolerance - TCR

Example: PF2203 0.5 Ohm 1% 100ppm

Riedon Inc.
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300 Cypress Avenue

Alhambra CA 91801

(626) 284-9901

www.riedon.com

sales@riedon.com

(626) 284-1704
Revised: 201901_002

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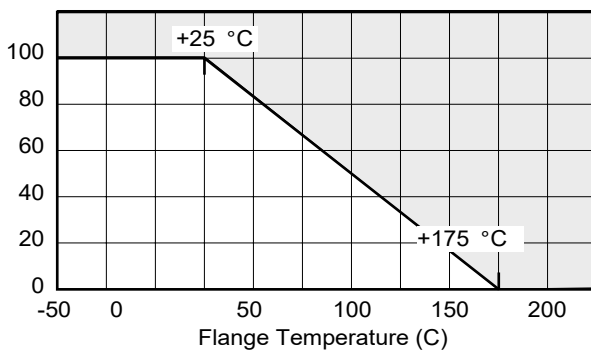


SPECIFICATIONS (continued)

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



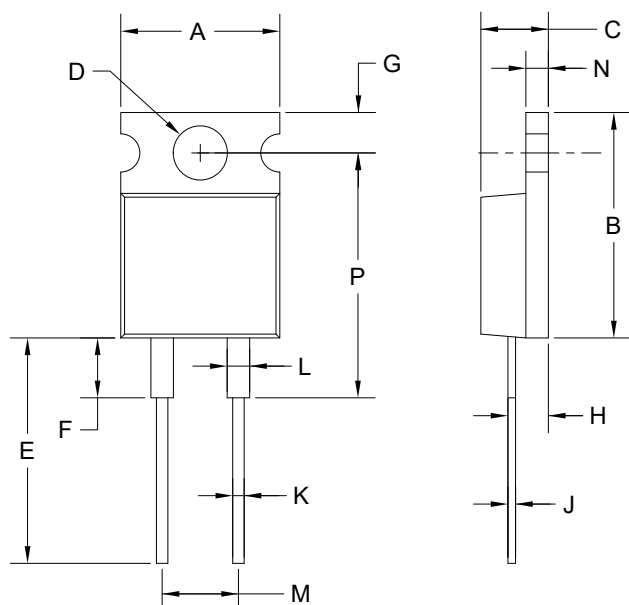
Power Rating Notes -

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)
 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.

Dimension	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

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PULSE ENERGY DURABILITY

