PF2200 Series

TO-220 Power Thick 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 ±0.1%**
- **TCR to ±50ppm/°C**
- **Non-Inductive (<10nH)**
- **Moisture Resitant**
- **Isolated Mounting Tab**

SPECIFICATIONS

Type	Power Rating		Thermal Resistance	Resistance Range[3]		Tolerances[4]	Temperature Coefficients
	Heatsink[1]	Free Air[2]		Min	Max		
PF2205	50W	1W	2.3°C/W	0.02Ω	51KW	±1% and ±5% ±5% below 0.1Ω	±50ppm/°C (R≥10Ω) ±100ppm/°C (0.1Ω ≤ R < 10Ω) ±250ppm/°C (R < 0.1Ω)
PF2203	35W	1W	3.3°C/W	0.02Ω	51KW	±1% and ±5% ±5% below 0.1Ω	±50ppm/°C (R≥10Ω) ±100ppm/°C (0.1Ω ≤ R < 10Ω) ±250ppm/°C (R < 0.1Ω)
PF2202	20W	1W	5.9°C/W	0.02Ω	51KΩ	±1% and ±5% ±5% below 0.1Ω	±50ppm/°C (R≥10Ω) ±100ppm/°C (0.1Ω ≤ R < 10Ω) ±250ppm/°C (R < 0.1Ω)

Currently Unavailable

[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
[4] Consult Factory for possible tighter tolerances

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

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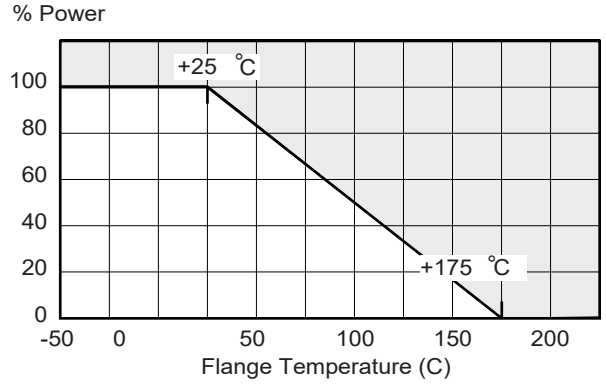
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SPECIFICATIONS (continued)

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

Power Derating



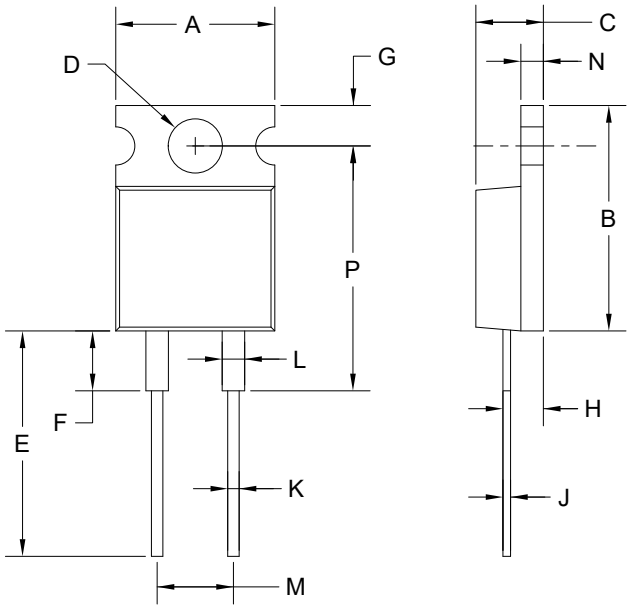
Power Rating Notes -

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



Dimension	mm	tol. (±mm)	inches	tol. (±inches)
A	10.1	0.2	0.400	0.008
B	15.0	0.2	0.590	0.008
C	4.5	0.2	0.180	0.008
D	3.6	0.1	0.140	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	0.120	0.008
H	2.5	0.2	0.100	0.008
J	0.5	0.05	0.020	0.002
K	0.75	0.05	0.030	0.002
L	1.5	0.05	0.060	0.002
M	5.08	0.1	0.200	0.004
N	1.5	0.05	0.060	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).

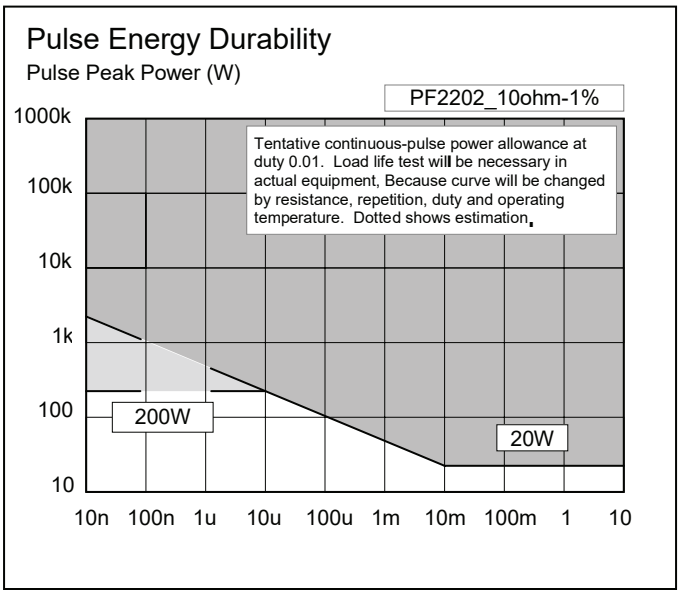
Mounting tab is isolated from both pins.

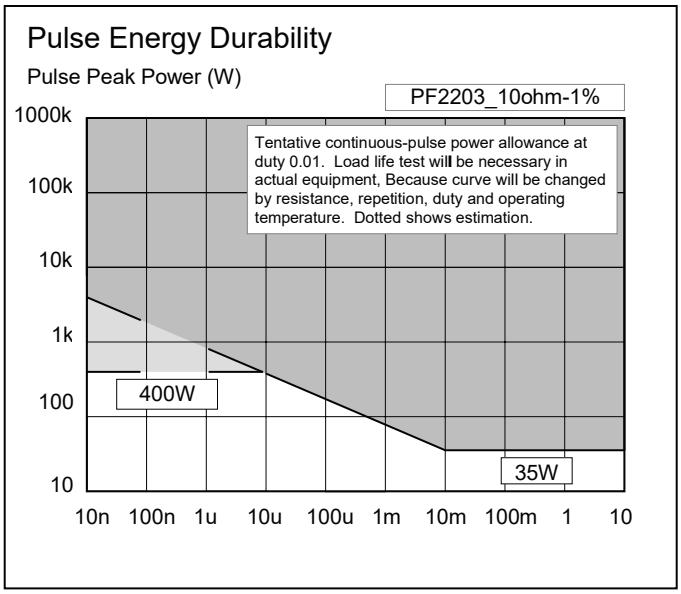
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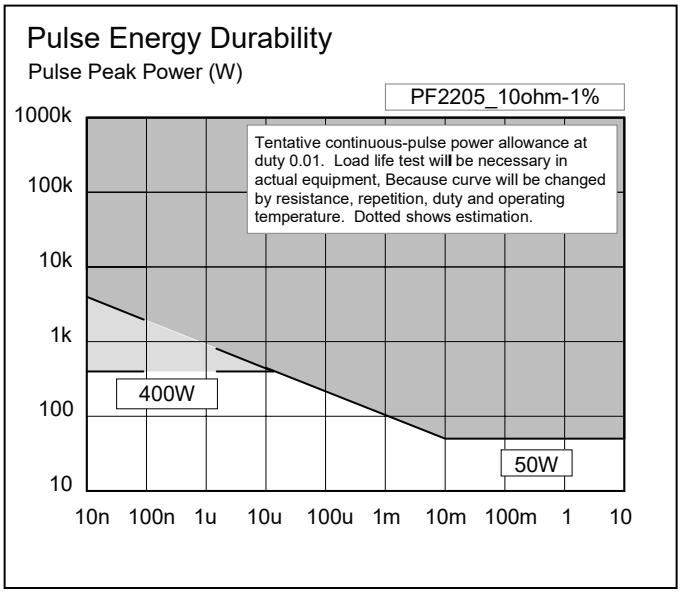
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PULSE ENERGY DURABILITY







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