

## Features

- Formerly a Riedon™ product
- Resistances from 0.02 to 51K ohms
- Power rating to 35 watts
- Resistance tolerances ±1 or ±5 %
- TCR to ±50 PPM/°C
- High stability film resistance elements
- Non-inductive (<10 nH)
- Moisture resistant
- Isolated mounting tab
- TO-220 housing
- RoHS compliant\*

## PF2203 Series – Riedon™ TO-220 Power Thick Film Resistors by Bourns

### Electrical Characteristics

Characteristic	PF2203
Power Rating (with heat sink) <sup>1</sup>	35 W
Power Rating (without heat sink) <sup>2</sup>	1 W
Thermal Resistance	3.3 °C/W
Resistance Range <sup>3</sup>	0.02 Ω (min.) to 51 KΩ (max.)
Tolerances <sup>4</sup>	±1 % and ±5 % ±5 % below 0.1 Ω
Temperature Coefficient	±50 PPM/°C (R ≥ 10 Ω) ±100 PPM/°C (0.1 Ω ≤ R < 10 Ω) ±250 PPM/°C (R < 0.1 Ω)

#### Notes:

1. Power rating based on 25 °C flange temperature.
2. Power rating based on 25 °C ambient temperature.
3. [Contact Bourns](#) for higher or lower values.
4. [Contact Bourns](#) for possible tighter tolerances.

### Additional Information

Click these links for more information:



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### General Specifications

Temperature Range.....-55 °C to +175 °C  
 Dielectric Strength ..... 2000 VDC  
 Max. Operating Voltage  
 .....500 V or  $\sqrt{P \cdot R}$ , whichever is less  
 Inductance..... 100 nH  
 Insulation Resistance ...>1000 megohms  
 Terminal Finish ..... Tin-plated copper  
 Mass ..... 2.1 g  
 Flammability Rating ..... UL94 V-0

### Environmental Performance

Specification	ΔR	Test Conditions
Load Life	±1 %	25 °C, 90 min. ON, 30 min. OFF, 1000 hrs.
Humidity Resistance	±1 %	40 °C, 90-95 % RH, DC 0.1 W, 1000 hrs.
Temperature Cycle	±0.25 %	-55 °C for 30 min., +155 °C for 30 min., 5 cycles
Solder Heat	±0.1 %	+350 °C / -5 °C, 3 s.
Vibration	±0.25 %	IEC 60068-2-6

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**WARNING Cancer and Reproductive Harm**  
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\*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

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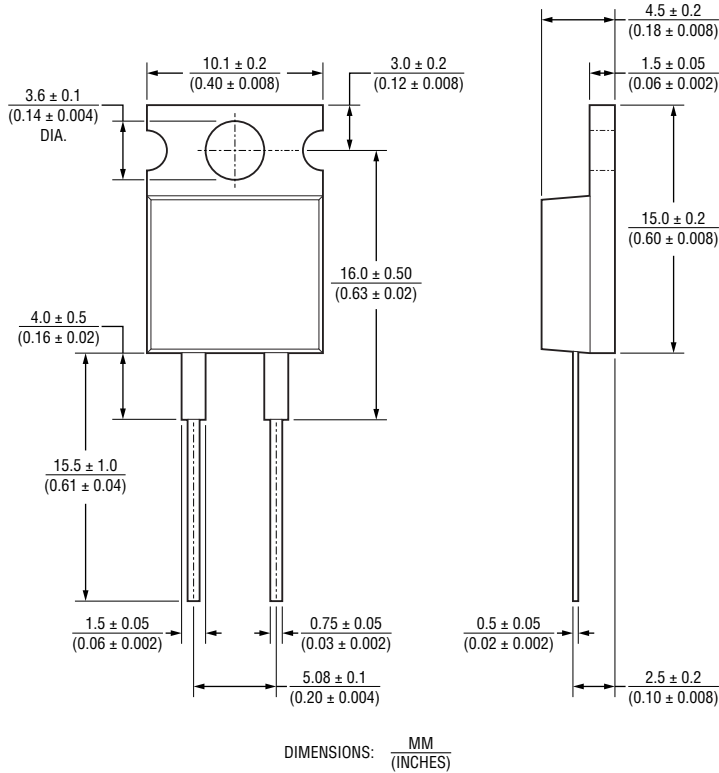
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# PF2203 Series – Riedon™ T0-220 Power Thick Film Resistors by Bourns



## Product Dimensions



## Mounting Notes

The PF2203 Series Thick Film Resistors must be attached to a suitable heat sink. Mount resistor using thermal grease to a clean, flat surface. Use a compression washer to provide 150 to 300 pounds (665 to 1330 N) of mounting force. Torque mounting screw to 8 in-lbs (0.9 N-m). Torque termination screw to 8 in-lbs (0.9 N-m).

Mounting tab is isolated from both pins.

## How to Order

Model **PF2203 - 100R J x**

PF2203

Resistance 0.02 Ω to 51 KΩ

Tolerance F = ±1 %  
J = ±5 %

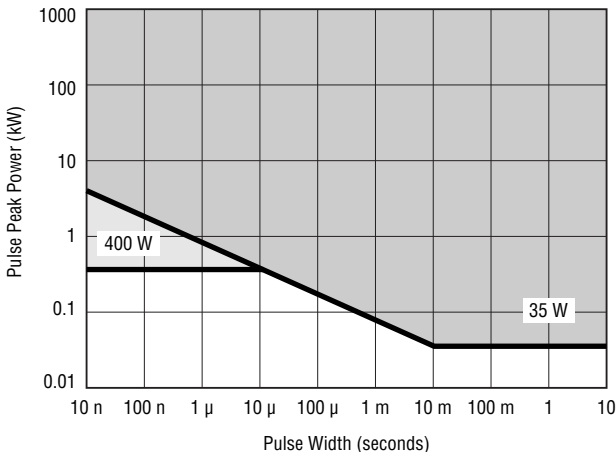
Internal Code 0 to 9

## Packaging Specifications

Tube ..... 50 pcs. per tube

## Pulse Energy Durability

PF2203 10 ohm 1 %



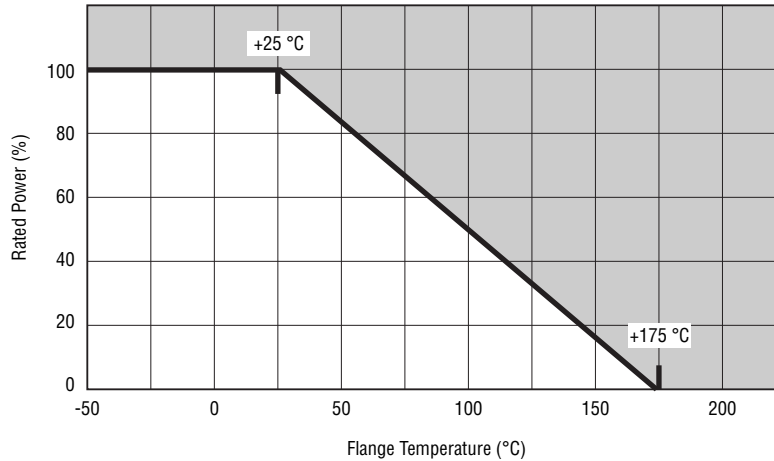
Tentative continuous pulse power allowance at duty 0.01. Load life test will be necessary in actual equipment because curve may be changed by resistance, repetition, duty, and operating temperature.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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**Derating Curve**



**Power Rating Notes**

The PF2203 Series Thick Film Resistors must be attached to a suitable heat sink. Without a heat sink the maximum power rating is 1 W. The maximum internal resistor temperature is 175 °C.

To specify an appropriate heat sink use the following formula:

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

- Where:  $R_{\theta H}$  = Thermal Resistance of Heat sink (°C/W)  
 $R_{\theta R}$  = Thermal Resistance of Resistor (°C/W)  
 $T_{MAX}$  = Maximum Temperature of Resistor  
 $T_A$  = Ambient Temperature of Heat sink (°C)  
 $P$  = Power Through Resistor (W)

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