

Features

- Formerly a Riedon™ product
- Resistance values as low as 0.02 Ω
- Power rating up to 50 W
- Load stability to ±0.5 %
- TO-220 SMD D²Pak
- Thick film technology
- RoHS compliant*

Applications

- Power supplies
- Stepper motor drives
- Input amplifiers

PSD220S Series – Riedon™ SMD Power Resistors by Bourns

Electrical Characteristics

Bourns Model	Power Rating @ 70 °C		Resistance Range (Ω)	Tolerance (%)	TCR (PPM/°C)	Thermal Resistance	Dielectric Strength
PSD220S-30	Heat sink Free air	30 W 1.5 W	0.02 to 0.049	±2	±600	3.5 K/W	2000 VDC
			0.05 to 0.099	±5	±300		
			0.1 to 1.0	±1	±100 (±50 available on request)		
			1.0 to 100K	±2 ±5			
PSD220S-50	Heat sink Free air	50 W 1.5 W	0.02 to 0.049	±2	±600	2.1 K/W	1500 VDC
			0.05 to 0.099	±5	±300		
			0.1 to 1.0	±1	±100 (±50 available on request)		
			1.0 to 15K	±2 ±5			

Environmental Characteristics

Specification	Value
Operating Temperature	-40 °C to +155 °C
Maximum Working Voltage	$\sqrt{P \cdot R}$ with a maximum of 1000 V
Storage Conditions Temperature Humidity	+5 °C to +35 °C 40 % to 75 %
Moisture Sensitivity Level	1

Additional Information

Click these links for more information:



Performance Characteristics

Test	Conditions	Test Method	
		Reference	Limit
Load Life	1000 hours, ON/OFF with rated power at +25 °C	MIL-STD-202 Method 108	$\Delta R < \pm 1 \%$
High Temperature Exposure	+155 °C for 1000 hours	MIL-STD-202 Method 303	$\Delta R < \pm 1 \%$
Low Temperature Storage	-40 °C for 24 hours	MIL-STD-202 Method 303	$\Delta R < \pm 1 \%$
Thermal Shock	-40 °C to +130 °C, 5 cycles	MIL-STD-202 Method 107	$\Delta R < \pm 1 \%$
Humidity Resistance	+40 °C / 90 % for 240 hours	MIL-STD-202 Method 103	$\Delta R < \pm 1 \%$
Resistance to Solder Heat	Solder dipping at 260 °C for 10 sec.	MIL-STD-202 Method 210	$\Delta R < \pm 1 \%$
Short Time Overload	2.5x rated power for 5 sec.	MIL-STD-202 Method 303	$\Delta R < \pm 1 \%$



CALIFORNIA WARNING: Can expose you to lead, a carcinogen and reproductive toxicant.
See www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.
Specifications are subject to change without notice.

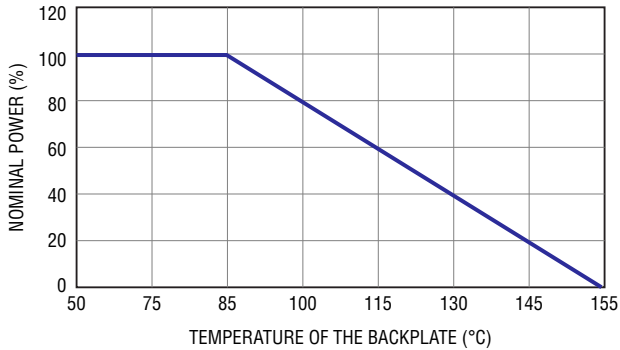
Users should verify actual device performance in their specific applications.

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PSD220S Series – Riedon™ SMD Power Resistors by Bourns

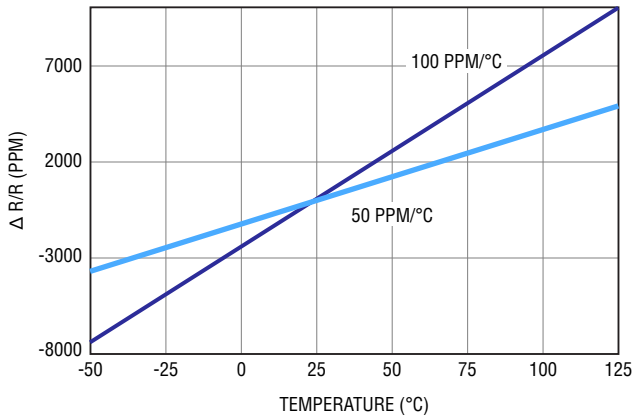


Current Rating Thermal Derating Curve

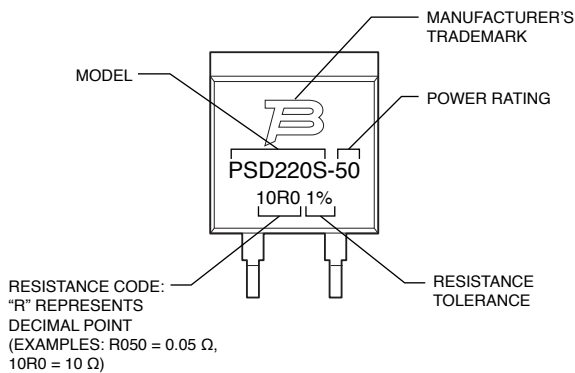


These resistors must be attached to a suitable heat sink. The maximum internal resistor temperature is +155 °C.

Temperature Coefficient



Typical Part Marking



How To Order

PSD220S - 50 - R050 F T

Model _____
PSD220S

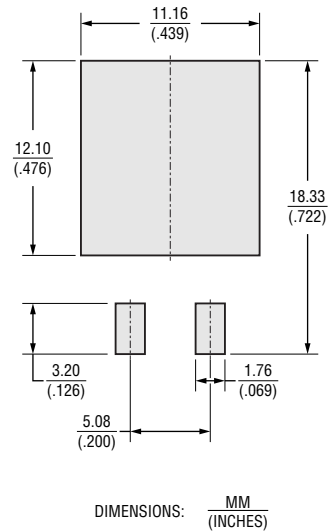
Power Rating _____
30 = 30 W
50 = 50 W

Resistance Value Code _____
<100 Ω: "R" represents decimal point
(example: R005 = 0.005 Ω, 5R00 = 5.00 Ω, 92R0 = 92 Ω)
≥100 Ω: First three digits are significant, fourth digit represents number of zeros to follow
(example: 2000 = 200 Ω, 3002 = 30 KΩ)

Resistance Tolerance _____
F = ±1 %
G = ±2 %
J = ±5 %

TCR (PPM/°C) _____
W = ±500
V = ±400
T = ±300
X = ±100
S = ±50

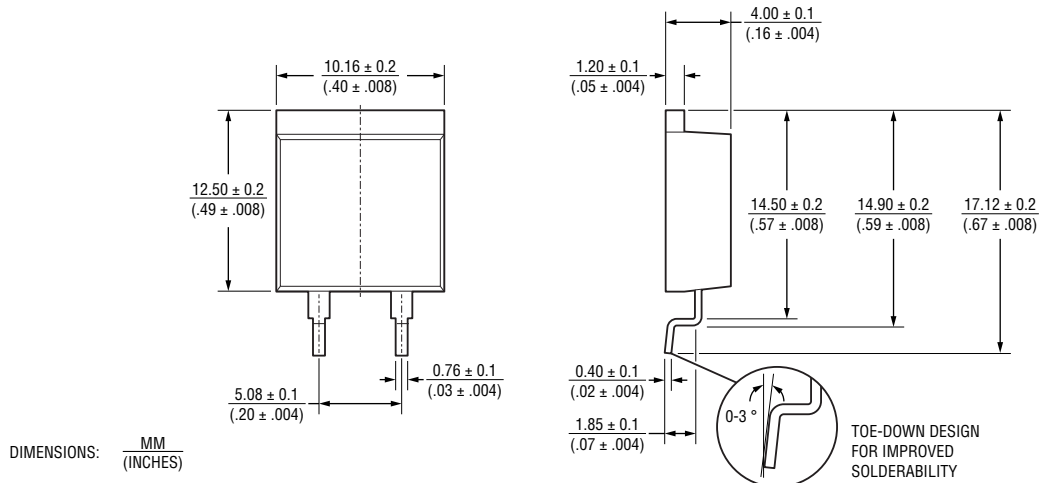
Suggested Layout



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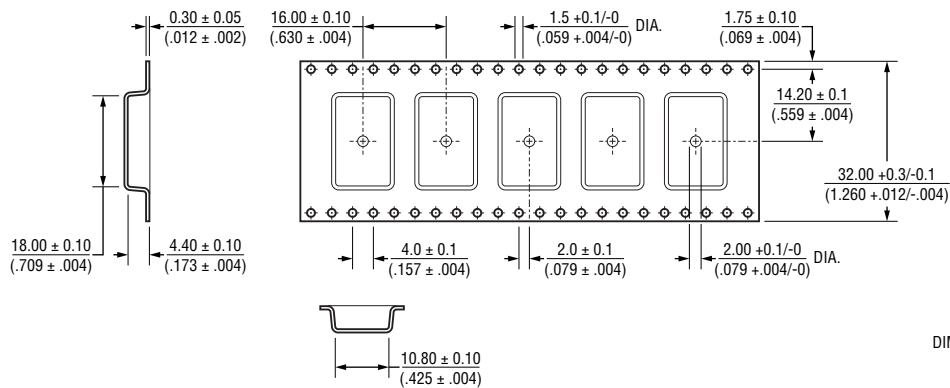


Product Dimensions



Packaging Information

13-inch reel, 500 pieces per reel



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REV. 11/25

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