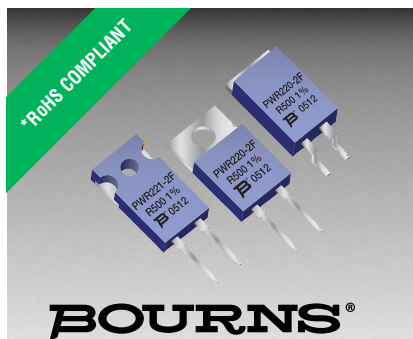




Features

- TO220 or TO221 housing
- Low inductance
- SMD and through hole versions
- High power rating



This series is unavailable and not recommended for new designs.

PWR220/PWR221 F Series Power Resistors

Material Specifications

Resistor Thick film
 Substrate Alumina (AL2O₃)
 Housing Epoxy/PPS
 Lead Frame Tinned Copper (Sn/Cu)
 Maximum Torque 1.0 Nm
 Packaging
 Tubes 50 pcs./tube
 Tape & Reel** 500 pcs./reel

**Tape & Reel is only available for
 Versions A and D.

General Information

The Bourns® PWR220 F Series is a TO220 style Power Resistor; PWR221 F is a TO221 style Power Resistor. Manufactured using thick film on Alumina ceramic technology, it is used in applications such as power supplies, motor drives and measurements.

Electrical & Thermal Characteristics

Parameter	Symbol	Min.	Nom.	Max.	Unit
Resistance (Version A) (Version C & D)	R R	0.02 0.02		100K 15K	Ω Ω
Power Rating @ 70 °C in Free Air Power Rating with External Heat Sink (Version A) (Version C & D)				1.50 30 50	W W W
Tolerance 0.02 Ω < R < 1.0 Ω 1.0 Ω < R < 100K Ω		2.0 1.0		5.0 5.0	% %
TCR 0.1 Ω < R < 100.0K Ω 0.05 Ω < R < 0.099 Ω 0.02 Ω < R < 0.049 Ω				±100 ±300 ±600	PPM/°C PPM/°C PPM/°C
Thermal Resistance – R _{thj} (Version A) (Version C & D)			3.5 2.1		°C/W °C/W
Stability			0.5		%
Dielectric Withstanding Voltage				2	kV DC
Operating Temperature	T _J	-40		+155	°C

*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

Applications

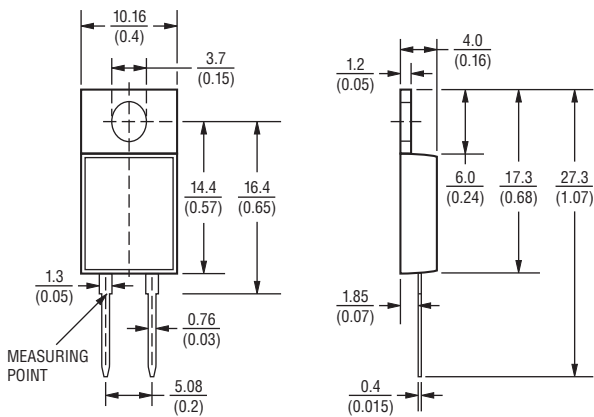
- Power supplies
- Motor drives
- Test and measurement
- Welding

PWR220/PWR221 F Series Power Resistors

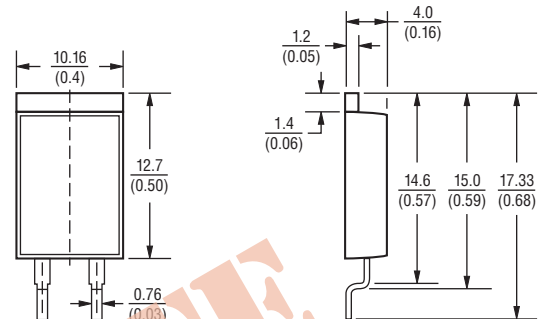
BOURNS®

Product Dimensions

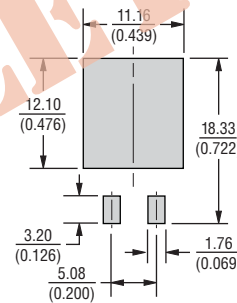
TO220 Housing: 2-Pin



TO220 Casing: 2-Pin (Surface Mount)

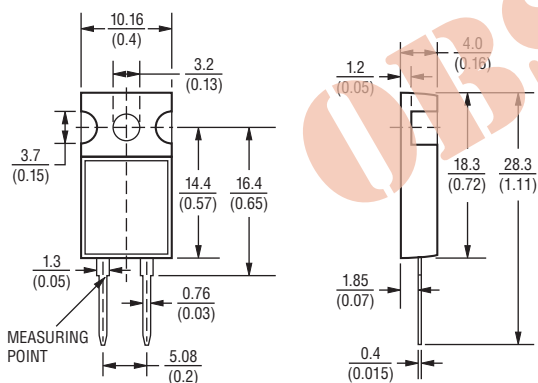


Recommended Pad Layout

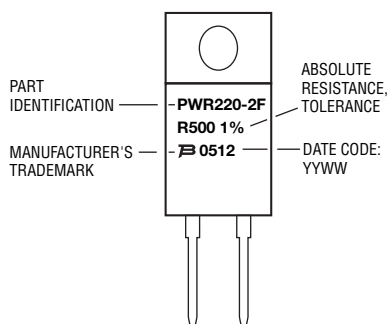


DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

TO221 Casing: 2-Pin



Typical Part Marking



How to Order

PWR 220 - 2 F B R040 J E

Model _____
PWR = Power Resistor

Package _____
220 = TO220
221 = TO221

Number of Pins _____
2 = 2

Function _____
F = Thick Film

Version _____
A = TO221 Housing, Surface Mount, 30 W (w/Heat Sink)
C = TO220 Housing/TO221 Housing, Through-Hole, 50 W (w/Heat Sink)
D = TO220 Housing, Surface Mount, 50 W (w/Heat Sink)

Resistor Value for all Tolerances _____
<100 ohms "R" represents decimal point (examples: 7R50 = 7.5 ohms; R040 = 0.040 ohms)
≥100 ohms First three digits are significant, fourth digit represents number of zeros to follow (examples: 2000 = 200 ohms; 2002 = 20K ohms)

Absolute Tolerance _____
J = 5 % G = 2 % F = 1 %

Packaging _____
E = Tape & Reel (Available only for Versions A and D)
___ = Tubes

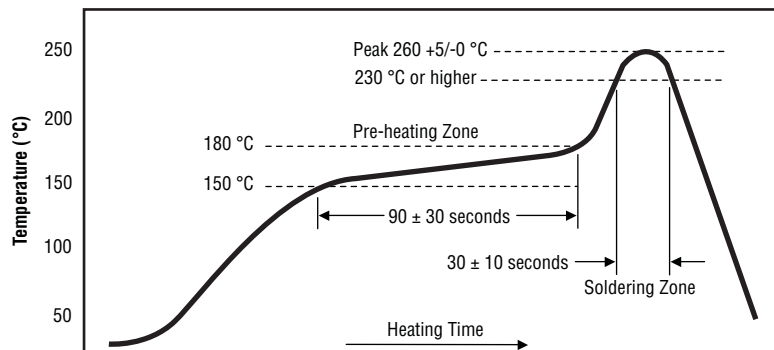
Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

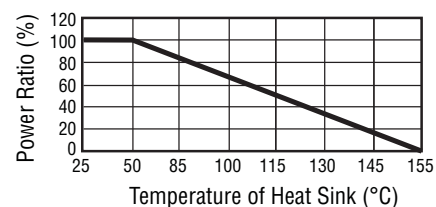
PWR220/PWR221 F Series Power Resistors

BOURNS®

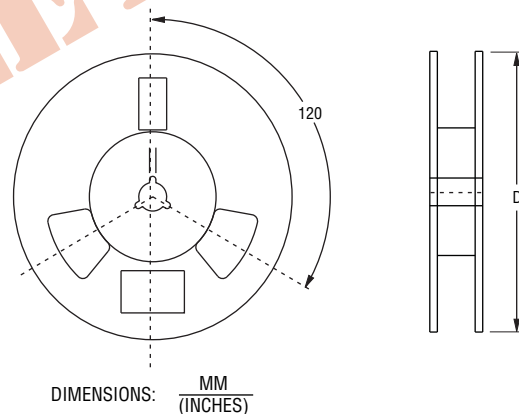
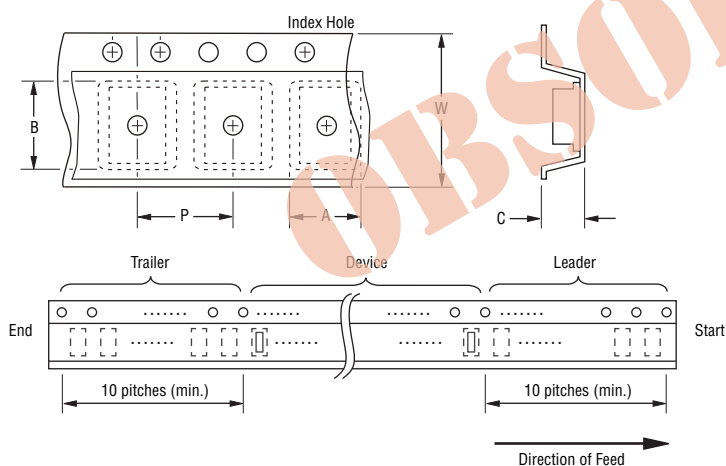
Soldering Profile (Surface Mount Version Only)



Derating Curve



Packaging Dimensions



Devices are packed in accordance with EIA standard RS-481-A and specifications shown here.

Item	Symbol	Dimensions
Carrier Width	A	10.4 (0.409)
Carrier Length	B	18.4 (0.724)
Carrier Depth	C	4.4 (0.173)
Reel Outside Diameter	D	330 (12.992)
Punch Hole Pitch	P	16.00 (0.630)
Tape Width	W	32 (1.260)
Quantity per Reel	—	500

REV. 10/15

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.