

## Features

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

## Applications

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

# PWR220 F Series Power Resistor

### Material Specifications

Resistor .....Thick film  
 Substrate.....Alumina (AL203)  
 Housing.....Epoxy/PPS  
 Lead Frame .....Tinned Copper (Sn/Cu)  
 Maximum Torque.....1.0 Nm  
 Packaging  
   Tubes.....50 pcs./tube  
   Tape & Reel.....500 pcs./reel

### General Information

The Bourns® PWR220 F Series is a TO220 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 & B) (Version C)	R R	0.02 0.02		100K 15K	Ω Ω
Power Rating @ 70 °C without heat sink Power Rating @ 70 °C with heat sink (Version A & B) (Version C)				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 – Rthj (Version A & B) (Version C)			3.5 2.1		°C/W °C/W
Stability		0.1		0.5	%
Thermal EMF				1.0	μV/°C
Dielectric Withstanding Voltage				2	kV DC
Operating Temperature	T <sub>J</sub>	-40		+130	°C

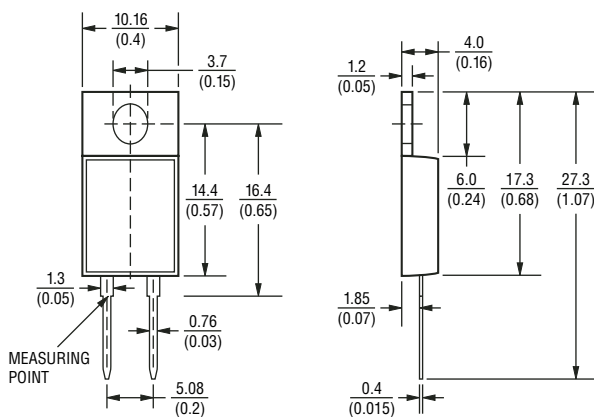
\*RoHS Directive 2002/95/EC Jan 27 2003, including Annex  
 Specifications are subject to change without notice.  
 Customers should verify actual device performance in their specific applications.

# PWR220 F Series Power Resistor

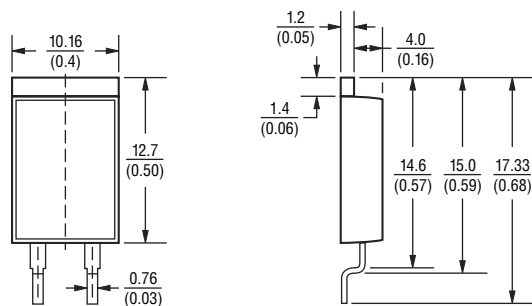


## Product Dimensions

### TO220 Housing: 2-Pin

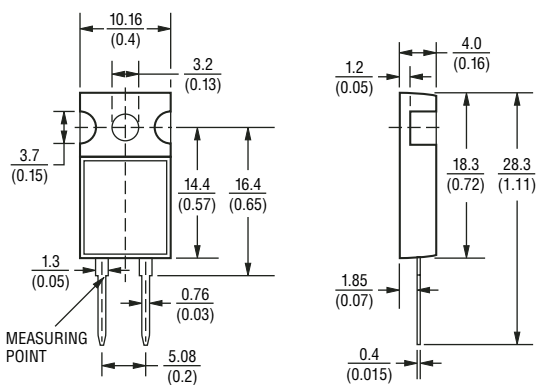


### TO220 Casing: 2-Pin (Surface Mount)



DIMENSIONS = MILLIMETERS  
(INCHES)

### TO221 Casing: 2-Pin



DIMENSIONS = MILLIMETERS  
(INCHES)

## How to Order

**PWR 220 - 2 F B R0400 J E**

Model \_\_\_\_\_  
PWR = Power Resistor

Package \_\_\_\_\_  
220 = TO220  
221 = TO221

Number of Pins \_\_\_\_\_  
2 = 2

Function \_\_\_\_\_  
F = Thick Film

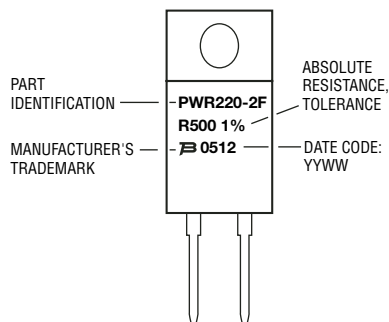
Version \_\_\_\_\_  
A = Surface Mount 30 W (with Heat Sink)  
B = Through-Hole 30 W (with Heat Sink)  
C = Through-Hole 50 W (with Heat Sink)

Resistor Value \_\_\_\_\_  
R (4 Digits)

Absolute Tolerance \_\_\_\_\_  
J = 5 % G = 2 % F = 1 %

Packaging \_\_\_\_\_  
E = Tape & Reel  
\_\_\_ = Tubes

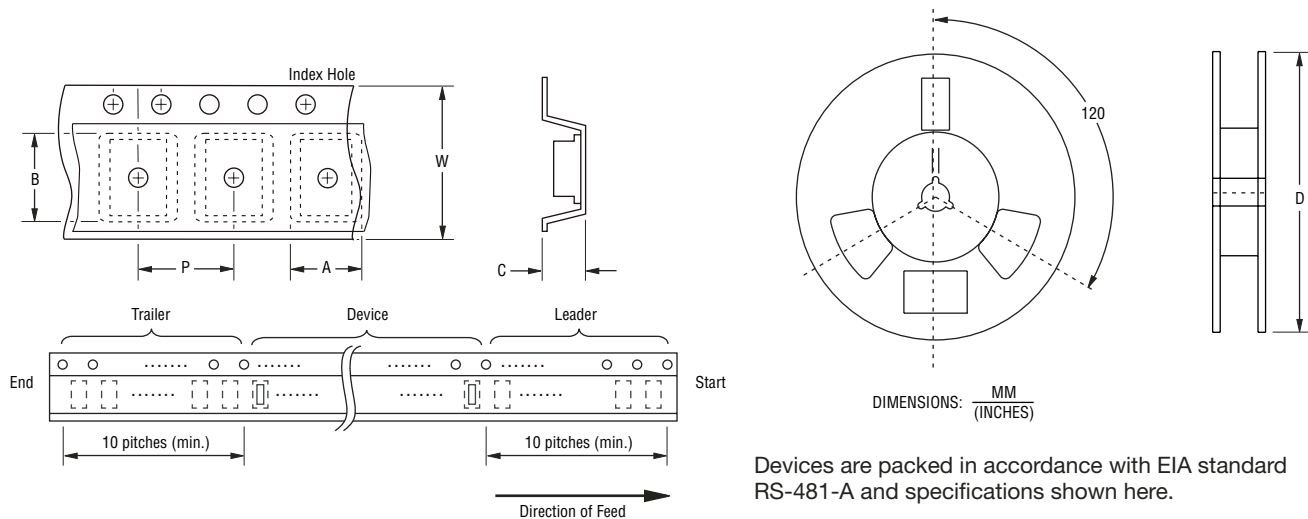
## Typical Part Marking



# PWR220 F Series Power Resistor

**BOURNS®**

## Packaging Dimensions



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



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