



Features

- Power ratings from 0.5 - 3 watts
- Large terminals and optimized body shape for power dissipation
- Excellent surge capabilities
- Low TCR
- Non-inductive versions available
- RoHS compliant*

Applications

- Telecommunications
- Audio equipment
- Medical equipment
- Base stations
- Industrial equipment

PWR2010/3014/4318/5322 - Surface Mount Wirewound Resistors

General Information

The PWR2010/3014/4318/5322 Series surface mount wirewound resistors boast a high power density and excellent pulse power characteristics. They can be used in a wide range of applications where surge voltages or inrush currents are present.

Electrical Characteristics

Parameter	PWR2010	PWR3014	PWR4318	PWR5322
Power	0.5 W	1.0 W	2.0 W	3.0 W
Resistance Range 1 % Based on E24+E96 Series 5 % Based on E24 Series	0.005 Ω - 1.2K Ω	0.005 Ω - 5K Ω	0.005 Ω - 12K Ω	0.01 Ω - 20K Ω
Resistance Range (Non-inductive Versions) Based on E24 Series	0.1 Ω - 200 Ω	0.1 Ω - 1K Ω	0.1 Ω - 2.4K Ω	0.1 Ω - 4K Ω
Tolerance	0.5 % / 1 % / 5 %			
Temperature Coefficient 0.1 - 0.99 Ω 1.0 - 10 Ω >10 Ω	± 90 PPM/ $^{\circ}$ C ± 50 PPM/ $^{\circ}$ C ± 20 PPM/ $^{\circ}$ C			
Operating Temperature	-55 $^{\circ}$ to 155 $^{\circ}$ C			
Maximum Voltage	$\sqrt{P \cdot R}$			

Environmental Characteristics

Test	Description	Specification
Thermal Shock	-55 $^{\circ}$ C/-3 $^{\circ}$ C to 150 $^{\circ}$ C +3 $^{\circ}$ C/-0 $^{\circ}$ C, 5 cycles, with minimum 15 minutes at each cycle	$\Delta R \pm(2.0 \% +0.05 \Omega)$
Short Time Overload	Five times rated power for 5 seconds	$\Delta R \pm(0.5 \% +0.05 \Omega)$
Solderability	Immersion in solder 260 $^{\circ}$ C ± 5 $^{\circ}$ C for 5 ± 0.5 seconds	90 % of contact covered in solder
Resistance to Solder Heat	Immersion in solder 260 $^{\circ}$ C ± 5 $^{\circ}$ C for 5 ± 0.5 seconds	$\Delta R \pm(0.5 \% +0.05 \Omega)$
Dielectric Strength	Test voltage >500 Vrms for greater than 1 minute	Pass
Insulation Resistance	Test voltage greater than 500 Vrms for one minute	>1000 G Ω
High Temperature Exposure	Ambient temperature of 175 $^{\circ}$ C +5 $^{\circ}$ C/-0 $^{\circ}$ C for 250 ± 8 hours	$\Delta R \pm(2.0 \% +0.05 \Omega)$
Low Temperature Exposure	Ambient Temperature of -65C ± 2 C for 24 hours ± 4 hours	$\Delta R \pm(2.0 \% +0.05 \Omega)$
Load Life	Rated continuous voltage for 1000 hours (1 hour on and 0.5 hours off) at a test temperature of 70 $^{\circ}$ C ± 2 $^{\circ}$ C	$\Delta R \pm(2.0 \% +0.05 \Omega)$

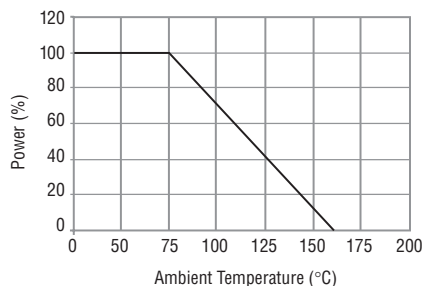
Environmental Characteristics (Cont'd)

Moisture Sensitivity Level..... 1
ESD Classification (HBM)N/A

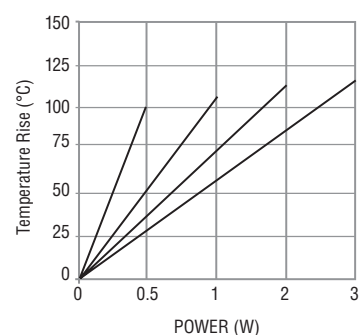
Physical Characteristics

Body Material..... Epoxy resin
Lead Frame 100 % Sn Plated Copper
Flammability Conforms to UL 94V-0

Power Derating Curve



Temperature Rise



*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.

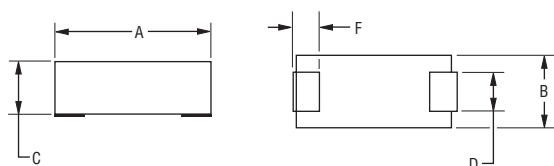
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.

PWR2010/3014/4318/5322 - Surface Mount Wirewound Resistors

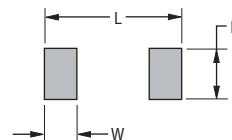
BOURNS®

Product Dimensions



DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$
TOLERANCE: $\pm \frac{0.508}{(0.02)}$

Recommended Pad Layout

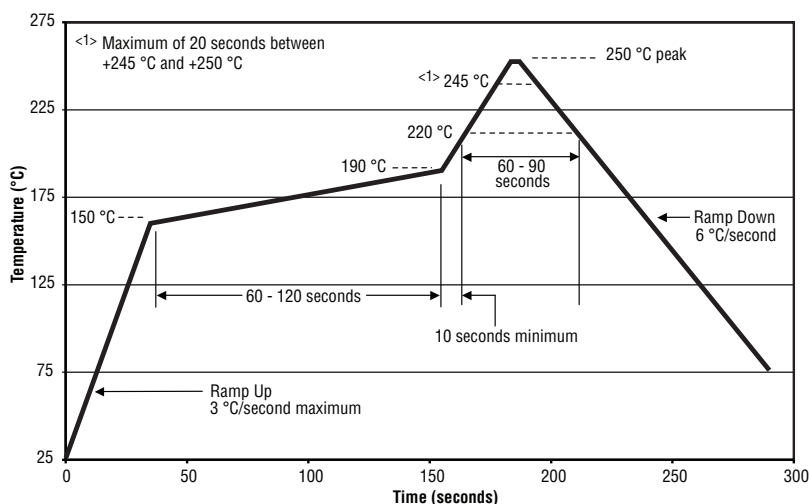


Model	A	F	L	C	B	D	W	H
PWR2010	$\frac{5.08}{(0.20)}$	$\frac{1.28}{(0.05)}$	$\frac{6.48}{(0.255)}$	$\frac{3.25}{(0.128)}$	$\frac{2.54}{(0.10)}$	$\frac{1.663}{(0.065)}$	$\frac{1.98}{(0.078)}$	$\frac{2.16}{(0.085)}$
PWR3014	$\frac{7.5}{(0.29)}$	$\frac{1.75}{(0.069)}$	$\frac{8.9}{(0.35)}$	$\frac{4.64}{(0.183)}$	$\frac{3.50}{(0.138)}$	$\frac{2.405}{(0.095)}$	$\frac{2.45}{(0.096)}$	$\frac{2.95}{(0.116)}$
PWR4318	$\frac{11.0}{(0.43)}$	$\frac{2.00}{(0.079)}$	$\frac{12.5}{(0.49)}$	$\frac{4.65}{(0.189)}$	$\frac{4.50}{(0.177)}$	$\frac{3.590}{(0.141)}$	$\frac{3.20}{(0.126)}$	$\frac{3.70}{(0.146)}$
PWR5322	$\frac{13.5}{(0.53)}$	$\frac{2.50}{(0.098)}$	$\frac{14.9}{(0.587)}$	$\frac{5.65}{(0.229)}$	$\frac{5.50}{(0.217)}$	$\frac{4.20}{(0.165)}$	$\frac{3.70}{(0.146)}$	$\frac{4.20}{(0.165)}$

Packaging Specifications

Model	Tape Width	Reel Diameter	Pieces per Reel	Bulk Pkg. Quantity
PWR2010	$\frac{12.0}{(0.472)}$	$\frac{330}{(13.0)}$	2500	200
PWR3014	$\frac{16.0}{(0.629)}$		1500	200
PWR4318	$\frac{24.0}{(0.945)}$		1500	100
PWR5322	$\frac{24.0}{(0.945)}$		1500	100

Soldering Profile



Typical Part Marking

MANUFACTURER'S TRADEMARK (PWR4318 & PWR5322)

RESISTANCE CODE

DATE CODE

How to Order

PWR4318 W 10R0 J E

Model _____

Type _____

W = Wirewound

N = Non-inductive Option

Special Version _____

Blank = Default

Resistance Value _____

<100 ohms ... "R" represents decimal point (examples: 7R50 = 7.5 Ω; R050 = 0.050 Ω)

≥100 ohms.... First three digits are significant, fourth digit represents number of zeros to follow (examples: 2000 = 200 ohms; 2002 = 20K ohms)

Resistance Tolerance _____

J = 5 %

F = 1 %

D = 0.5 %

Packaging _____

E = Tape & Reel

Blank = Bulk

REV. 09/17

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