



## 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 (low/medium risk)\*\*
- 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 Ω 0.1 - 0.99 Ω 1.0 - 10 Ω >10 Ω	±200 PPM/°C ±90 PPM/°C ±50 PPM/°C ±20 PPM/°C			
Operating Temperature	-55 ° to 155 °C			
Maximum Voltage	$\sqrt{P \cdot R}$			

### Environmental Characteristics

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

### 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



**WARNING Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)**

\* RoHS Directive 2015/863, Mar 31, 2015 and Annex.

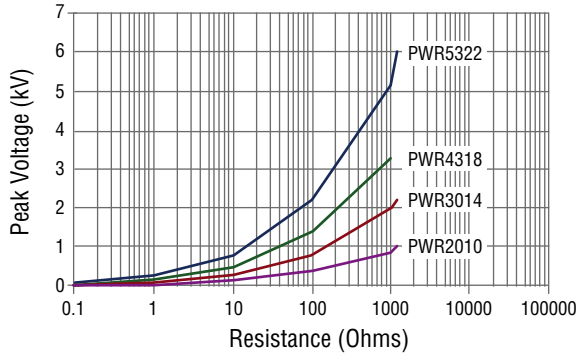
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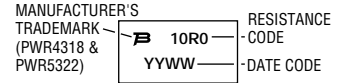
Users should verify actual device performance in their specific applications.

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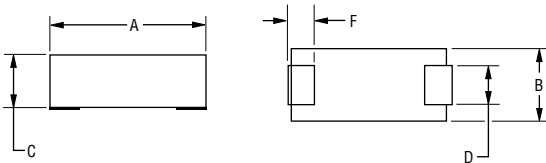
**Surge Performance (IEC 61000-4-5 1.2 μs / 50 μs)**



**Typical Part Marking**

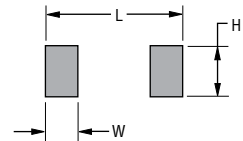


**Product Dimensions**



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

**Recommended Pad Layout**

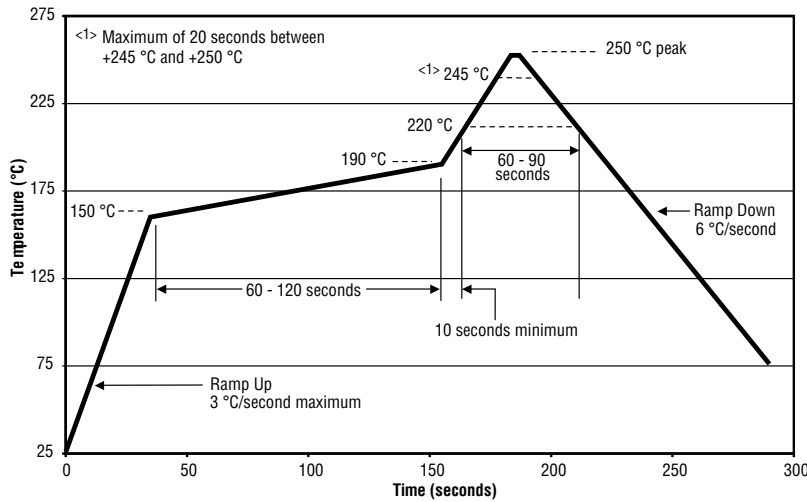


Model	A	F	L	C	B	D	W	H
PWR2010	$\frac{5.08}{(0.20)}$	$\frac{1.28}{(0.05)}$	$\frac{6.48}{(0.255)}$	$\frac{3.25}{(0.128)}$	$\frac{2.54}{(0.10)}$	$\frac{1.663}{(0.065)}$	$\frac{1.98}{(0.078)}$	$\frac{2.16}{(0.085)}$
PWR3014	$\frac{7.5}{(0.29)}$	$\frac{1.75}{(0.069)}$	$\frac{8.9}{(0.35)}$	$\frac{4.64}{(0.183)}$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

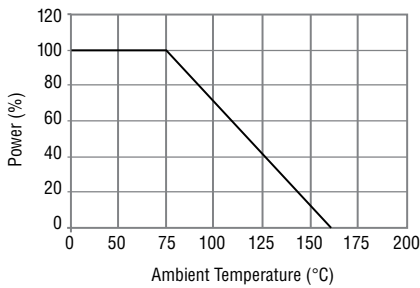
**Packaging Specifications**

Model	Tape Width	Reel Diameter	Pieces per Reel	Bulk Pkg. Quantity
PWR2010	$\frac{12.0}{(0.472)}$	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

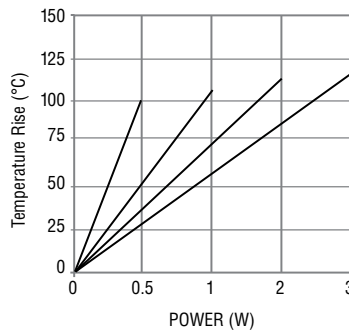
**Soldering Profile**



**Power Derating Curve**



**Temperature Rise**



**How to Order**

**PWR4318 W 10R0 J E**

Model \_\_\_\_\_  
 PWR2010  
 PWR3014  
 PWR4318  
 PWR5322

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

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