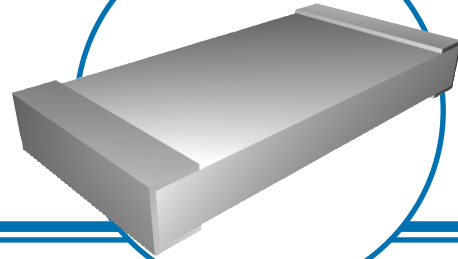


# Pulse Withstanding Chip Resistors

## PWC Series

- Higher power ratings
- Improved working voltage ratings
- Excellent pulse withstanding performance
- Sn/Pb or Pb-free wrap-around terminations
- Standard chip sizes available from 0805 to 2512



## Electrical Data

Characteristic	0805	1206	2010	2512
<b>Resistance Range</b> ±1%, ±5% ±0.5%	1.0Ω to 10MΩ 10Ω to 1MΩ			
<b>Power @ 70°C</b>	125mW	500mW	1.0W	2.0W
<b>Max Voltage Rating</b>	150V	200V	400V	500V
<b>Absolute TCR</b>	<6Ω = 0 – 350ppm; ≥6Ω = ±100ppm/°C			
<b>Operating Temperature</b>	-55°C to +155°C			
<b>Thermal Impedance</b>	220°C/W	160°C/W	80°C/W	40°C/W
<b>Pad/Trace Area</b>	40mm <sup>2</sup> *	125mm <sup>2</sup> *	250mm <sup>2</sup> *	500mm <sup>2</sup> *
<b>Termination</b>	Wrap-around Sn/Pb or Pb-free with leach resistant Ni barrier			

\*Recommended minimum pad and adjacent trace area for each termination for rated power on FR4 PCB.

## Environmental Data

Test	Maximum <sup>1</sup> ΔR	Typical ΔR
Load life at rated power (1000 hours @ 70°C)	1.00%	0.25%
Overload (5.0 X rated power for 2512, 6.25 X rated power for other sizes, 5 secs)	1.00%	0.10%
High temperature storage (1000 hours @ 155°C)	1.00%	0.20%
Moisture resistance	1.00%	0.25%
Thermal shock	0.25%	0.05%
Resistance to soldering heat	0.25%	0.05%

Note <sup>1</sup>: 0.01Ω added for all resistance values <10Ω.

### General Note

IRC reserves the right to make changes in product specification without notice or liability. All information is subject to IRC's own data and is considered accurate at time of going to print.

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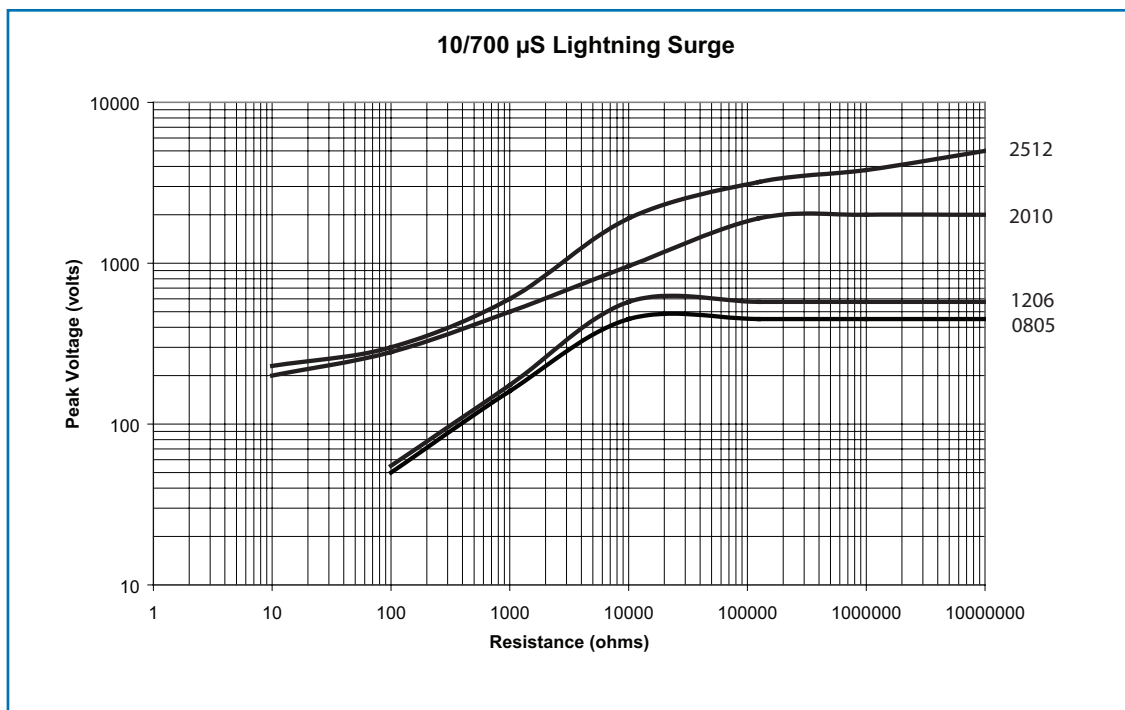
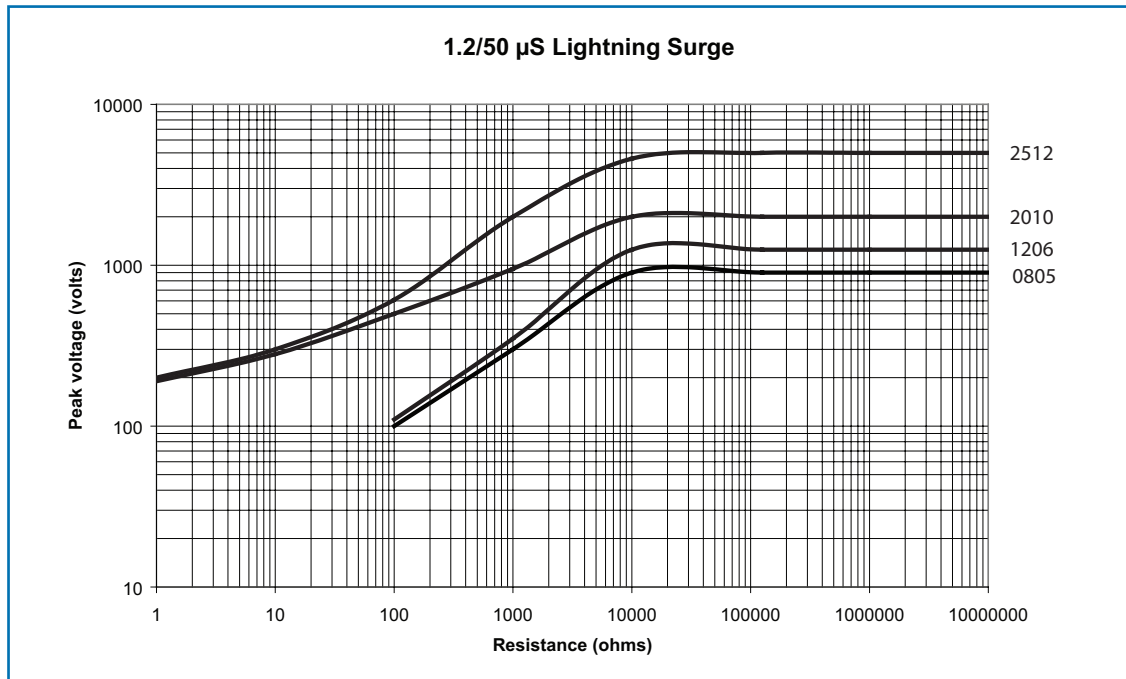
# Pulse Withstanding Chip Resistors



## Pulse Performance Data

### Lighting Surge

Resistors are tested in accordance with IEC 60 115-1 using both 1.2/50 $\mu$ s and 10/700 $\mu$ s pulse shapes. The limit of acceptance is a shift in resistance of less than 1% from the initial value.



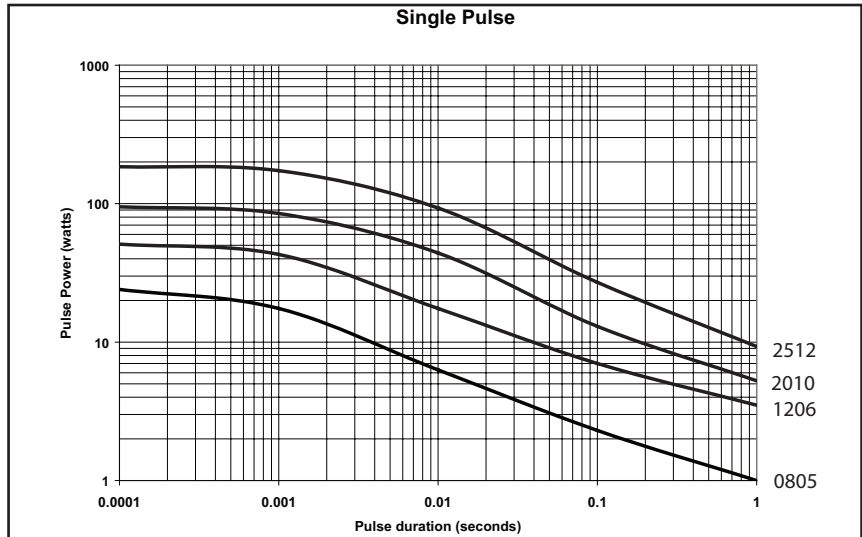
# Pulse Withstanding Chip Resistors



## Pulse Performance Data

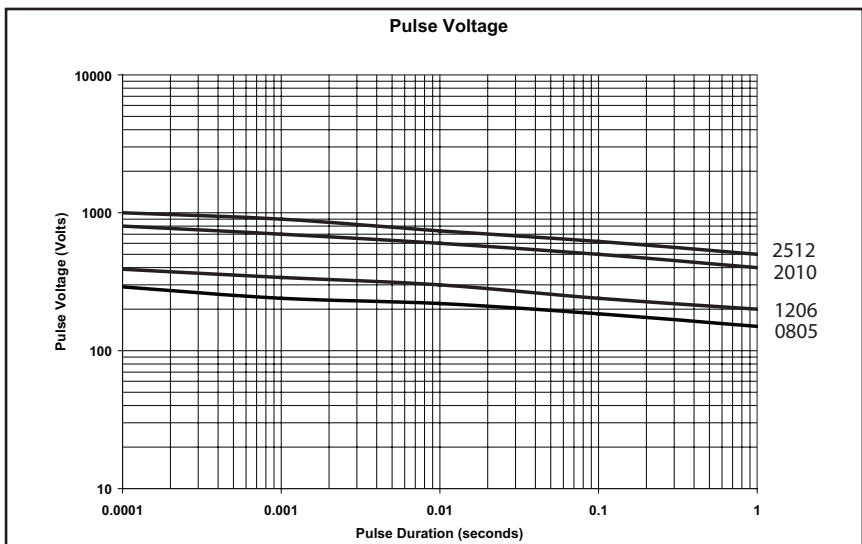
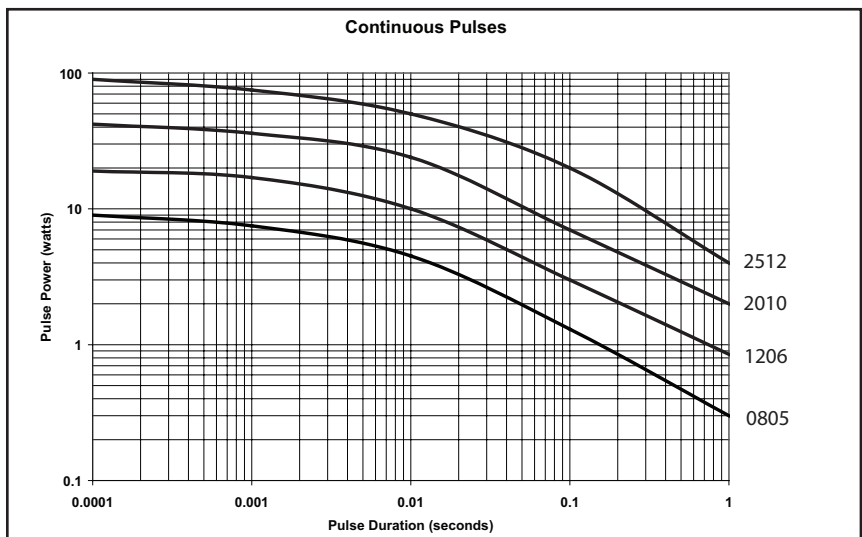
### Single impulse:

The single impulse graph is the result of 50 impulses of rectangular shape applied at one minute intervals. The limit of acceptance was a shift in resistance of less than 1% from the initial value. The power applied was subject to the restrictions of the maximum permissible impulse voltage graph shown.



### Continuous load due to repetitive pulses:

The continuous load graph was obtained by applying repetitive rectangular pulses where the pulse period was adjusted so that the average power dissipated in the resistor was equal to its rated power at 70°C. Again the limit of acceptance was a shift in resistance of less than 1% from the initial value.



# Pulse Withstanding Chip Resistors

## Physical Data

	L (mm)	W (mm)	T max (mm)	A (mm)	B min (mm)	C (mm)	Weight (grams)
0805	2.0±0.3	1.25±0.2	0.6	0.3±0.15	0.9	0.3±0.1	0.009
1206	3.2±0.4	1.6±0.2	0.7	0.4±0.2	1.7	0.4±0.15	0.020
2010	5.1±0.3	2.5±0.2	0.8	0.6±0.3	3.0	0.6±0.25	0.036
2512	6.5±0.3	3.2±0.2	0.8	0.6±0.3	4.4	0.6±0.25	0.055

### Construction:

Thick film resistor material, overglaze and organic protection are screen printed on a 96% alumina substrate. Wrap-around terminations have an electroplated nickel barrier and tin-lead solder or matte-tin finish, ensuring excellent 'leach' resistance properties and solderability.

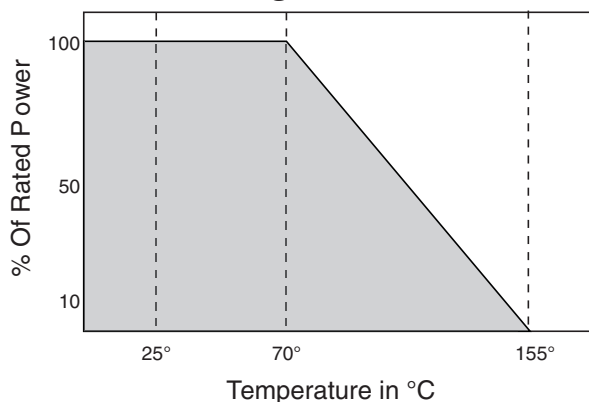
### Marking:

Components are not marked. Reels are marked with type, value, tolerance, date code and quantity.

### Solvent resistance:

The body protection is resistance to all normal industrial cleaning solvents suitable for printed circuits.

## Power Derating Data



## Ordering Data

Prefix ..... **PWC** - **PWC** **2512LF** - **100R** - **F**

Chip Type ..... PWC

Chip Size and Termination ..... 2512LF - 100R - F

0805 = Sn/Pb solder termination  
 0805LF = 100% Tin (pb-free) termination  
 1206 = Sn/Pb solder termination  
 1206LF = 100% Tin (pb-free) termination  
 2010 = Sn/Pb solder termination  
 2010LF = 100% Tin (pb-free) termination  
 2512 = Sn/Pb solder termination  
 2512LF = 100% Tin (pb-free) termination

Resistance Value (Use IEC62 code) ..... 100R - F

Tolerance Code ..... F

J = ±5%; F = ±1%; D = ±0.5%

For additional information or to discuss your specific requirements, please contact our Applications Team using the contact details below.