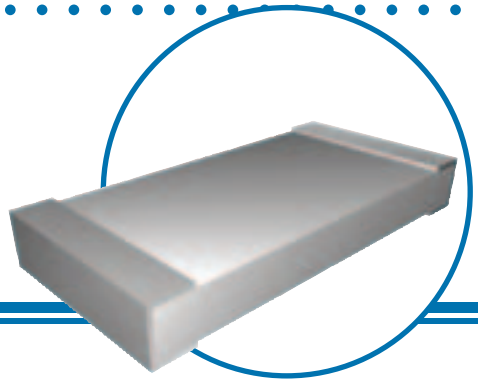
Pulse Withstanding Chip Resistors

TT electronics
IRC Advanced Film Division

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
Power @ 70°C	125mW	330mW	750mW	1.5W
Max voltage rating	150V	200V	400V	500V
Resistance range				
±1%, ±5%	1.0Ω to 10MΩ			
±0.5%	10Ω to 1MΩ			
Absolute TCR	<10R = ±200ppm ≥ 10R = ±100ppm/°C			
Operating temperature	–55°C to +155°C			
Termination	Wrap-around Sn/Pb or Pb-free with leach resistant Ni barrier			
Thermal impedance	220°C/W	160°C/W	80°C/W	50°C/W
Pad/trace area	40mm²*	50mm²*	60mm²*	100mm²*

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

Environmental Data

Test		Maximum[1]	Typical
Load life at rated power (1000 hours @ 70°C)	ΔR%	1.0	0.25
Overload (6.25 X rated power for 5 seconds)	ΔR%	1.0	0.1
High temperature storage (1000 hours @ 155°C)	ΔR%	1.0	0.2
Moisture resistance	ΔR%	1.0	0.25
Thermal shock	ΔR%	0.25	0.05
Resistance to soldering heat	ΔR%	0.25	0.05

Note [1]: 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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TTelectronics plc
PWC Series Issue January 2006

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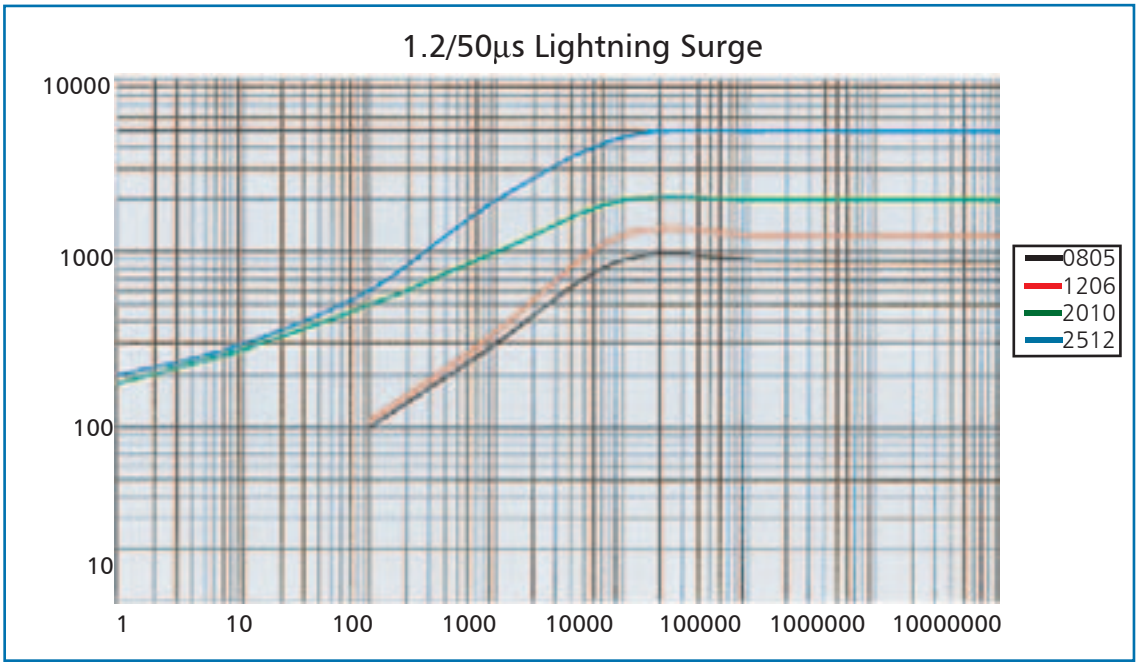
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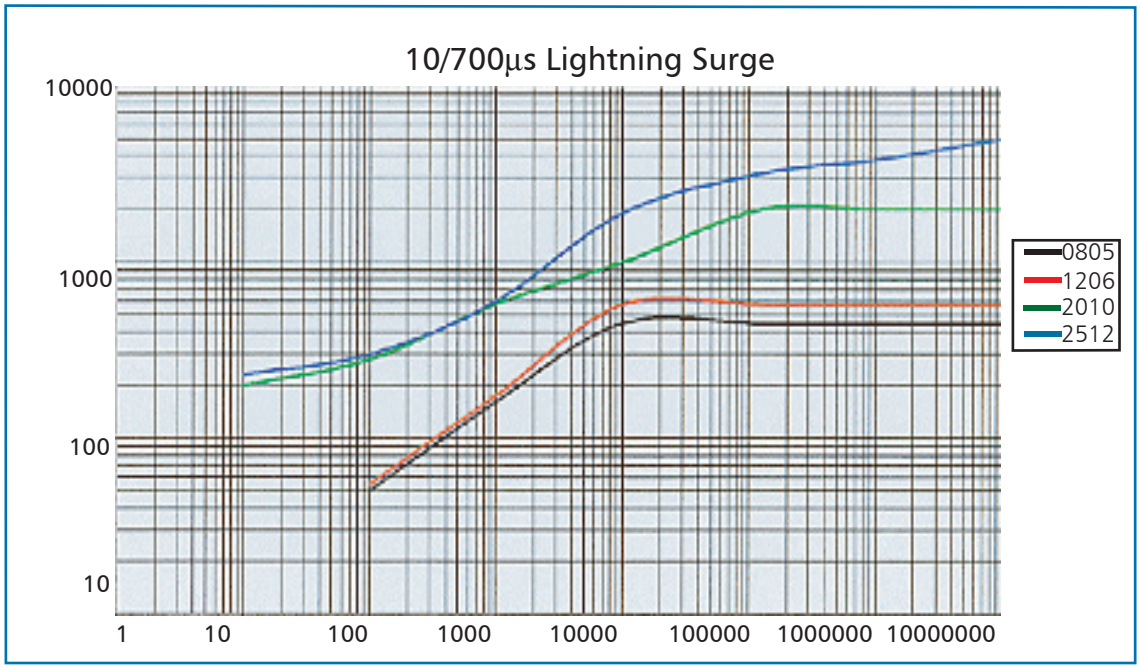
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Pulse Performance Data

Lighting Surge

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





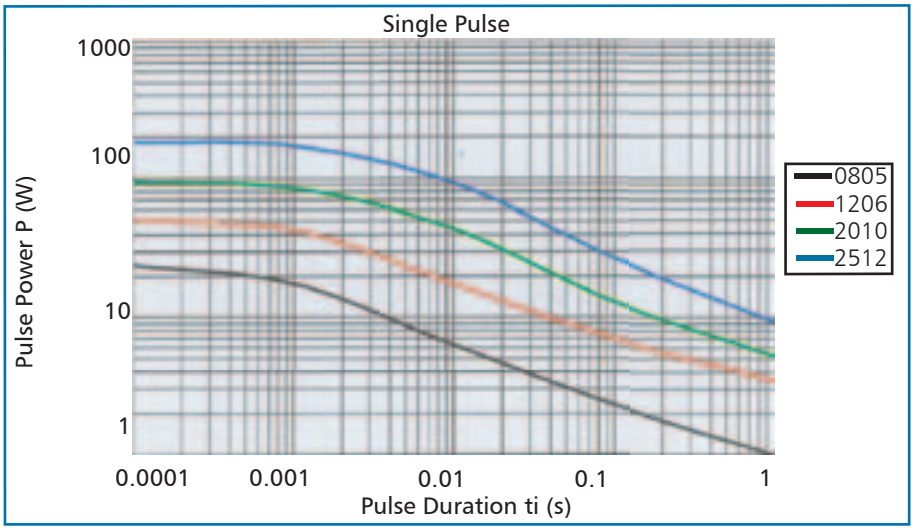
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Pulse Withstanding Chip Resistors

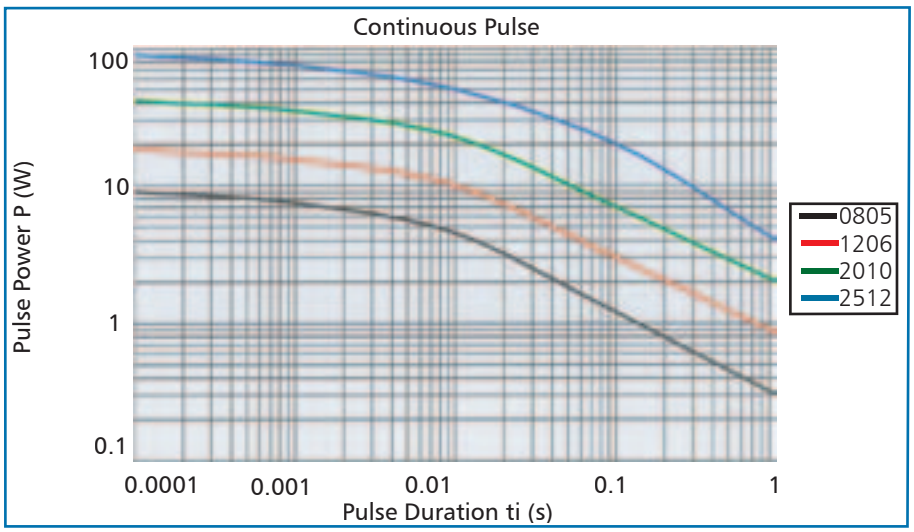
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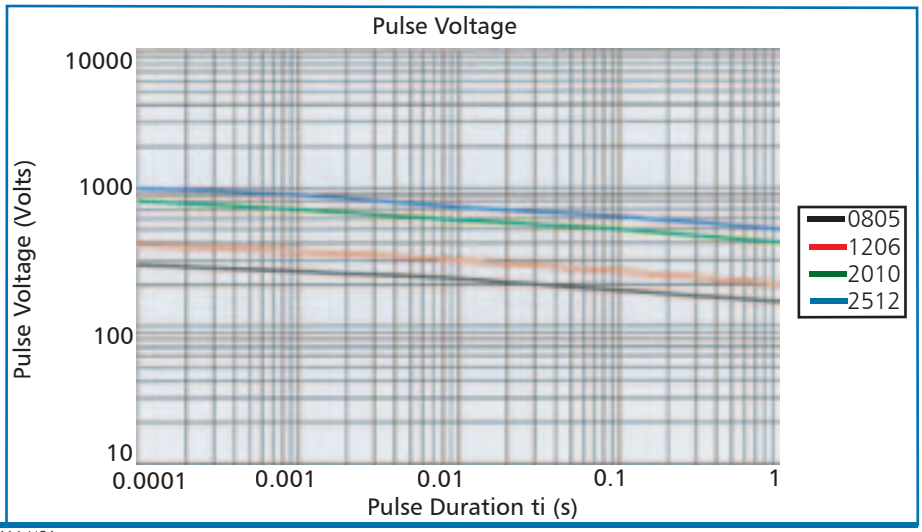
Pulse Performance Data

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.





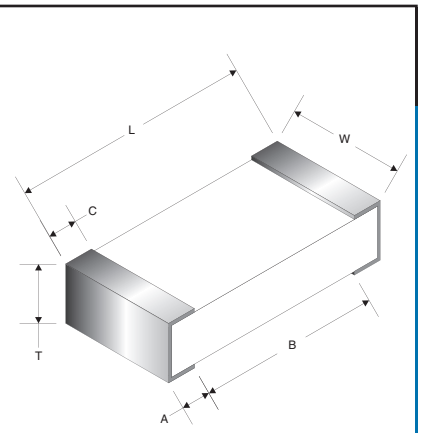
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Pulse Withstanding Chip Resistors

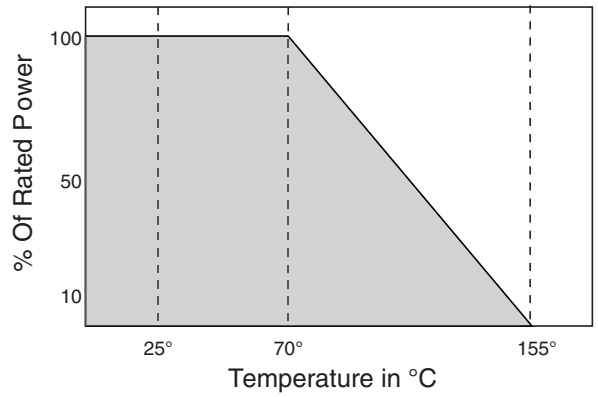
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Physical Data

	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



Power Derating Data



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 coating, 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.

Ordering Data

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

Chip Type
PWC

Chip Size and Termination
0805LF = 100% Tin (pb-free) termination
1206 = 60/40 solder termination
1206LF = 100% Tin (pb-free) termination
2010 = 60/40 solder termination
2010LF = 100% Tin (pb-free) termination
2512 = 60/40 solder termination
2512LF = 100% Tin (pb-free) termination

Resistance Value (Use IEC62 code)

Tolerance Code
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.

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