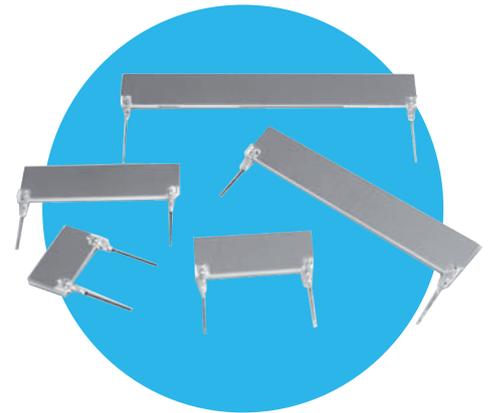


Pulse Withstanding Planar Resistors

PWP Series

- Excellent pulse withstand capability
- Energy ratings 5J to 70J
- Excellent reliability
- Ideally suited for medical applications
- Custom design service available
- RoHS compliant



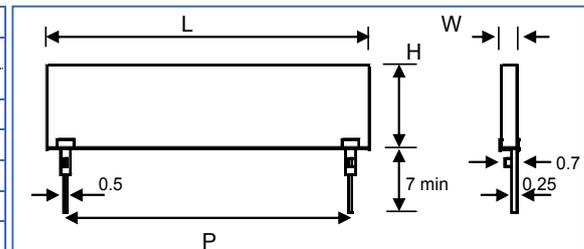
 All Pb-free parts comply with EU Directive 2011/65/EU (RoHS2)

Electrical Data

		PWP04	PWP06	PWP08	PWP10	PWP15	PWP20
Energy rating (10msec pulse, 25°C)	joules	6	11	13	33	50	70
Power rating at 70°C	watts	0.4	0.6	0.8	1	1.5	2
Resistance range	ohms	100 to 200K					
Limiting element voltage (dc or ac rms)	volts	$\sqrt{(P.R)}$					
TCR (20°C to 70°C)	ppm/°C	PWP04, 06, 08: 100: PWP10, 15, 20 <200R: 200: ≥ 200R: 100					
Resistance tolerance	%	1, 5					
Standard values		E24 preferred					
Ambient temperature range	C	-55 to 155					

Physical Data

All Dimensions in mm and nominal weight in g					
Type	L ±0.75	H ±0.5	W ±0.5	P ±0.5	Weight
PWP04	10.16	6.35	2	7.62	0.31
PWP06	12.7	6.35	2	10.16	0.38
PWP08	17.78	6.35	2	15.24	0.51
PWP10	25.4	6.35	2	22.86	0.69
PWP15	38.1	6.35	2	35.56	1.1
PWP20	50.8	6.35	2	48.26	1.33



Construction

Conductor pads are printed to the rear and front faces of a 96% alumina substrate. A specially selected high voltage thick film resistor ink, based on a ruthenium oxide/glass system, is printed between the front face conductors and then covered in an overglaze before being protected with a special screen printed material which gives excellent high voltage and climatic performance.

Marking Type, resistance value and tolerance are legend marked in black ink on the rear of the component. The resistance value conforms to IEC 62.

Solvent Resistance The component protection and marking are resistant to all normal industrial cleaning solvents suitable for printed circuit boards

Terminations Solder coated phosphor bronze leadframe terminations are solder dipped in SnAgCu and meet the following IEC requirements: IEC 68.2.21 – Strength, IEC 115-1, Clause 4.17.3.2 – Solderability

General Note

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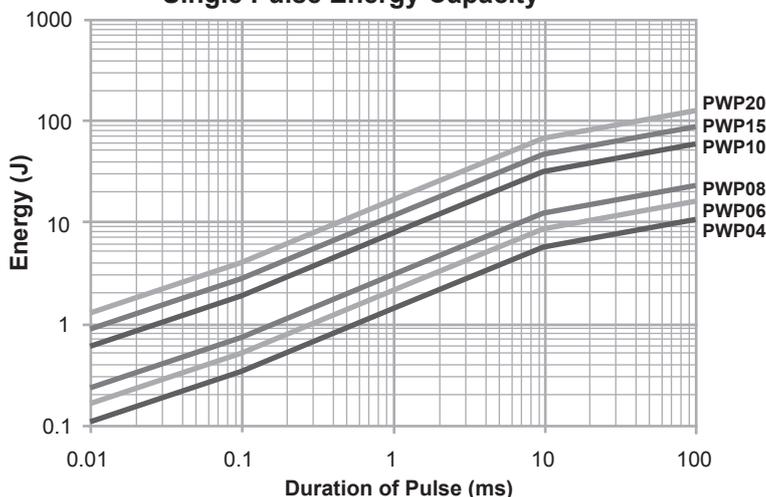
Performance Data

		Maximum	Typical
Load at rated power: 1000 hours at 70°C	ΔR%	1	0.25
Dry heat: 1000 hours at 155°C	ΔR%	1	0.25
Shelf life: 12 months at room temperature	ΔR%	0.3	<0.1
Derating from power at 70°C		Zero at 155°C	
Climatic	ΔR%	1	0.3
Climatic category		-55/155/56	
Long term damp heat	ΔR%	1	0.3
Temperature rapid change	ΔR%	0.25	0.02
Resistance to solder heat	ΔR%	0.25	0.02

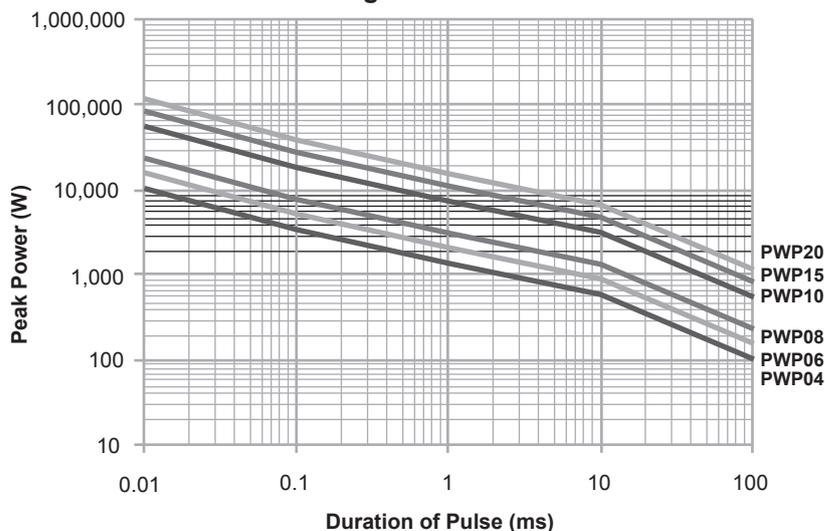
Pulse / Surge Performance

Data based on testing performed at 100R using Single Pulse conditions, i.e. with mean power negligible compared to rated power. The maximum allowed ΔR is 1%.

Single Pulse Energy Capacity



Maximum Single Pulse Power



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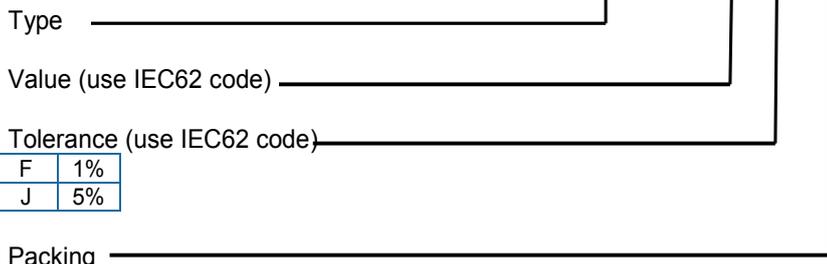
PWP Series

Design Flexibility The experience of TT electronics engineers has been used to design this generation of pulse withstanding planar resistors to be suitable for the majority of applications. However, should an application require particular consideration, TT electronics designers are able to provide advice and, where applicable, to recommend a non-standard product. Special sizes, designs etc, can be prototyped at short notice.

Ordering Procedure

Example: PWP10 at 200 ohms and 5% tolerance and packed in a box of 160 pieces:

P W P 1 0 - 2 0 0 R J B 0 1 6



F	1%
J	5%

B048	Bulk Pack	PWP04	480 / box	Standard
B036		PWP06	360 / box	
B024		PWP08	240 / box	
B016		PWP10	160 / box	
B012		PWP15	120 / box	
B008		PWP20	80 / box	

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