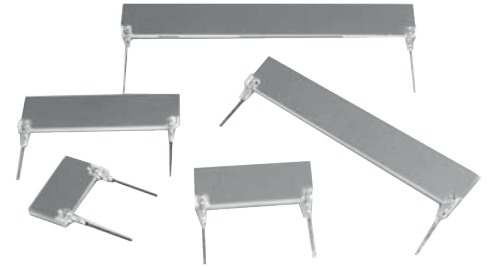


Pulse Withstanding Planar Resistors

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 parts are Pb-free and comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

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	V(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

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

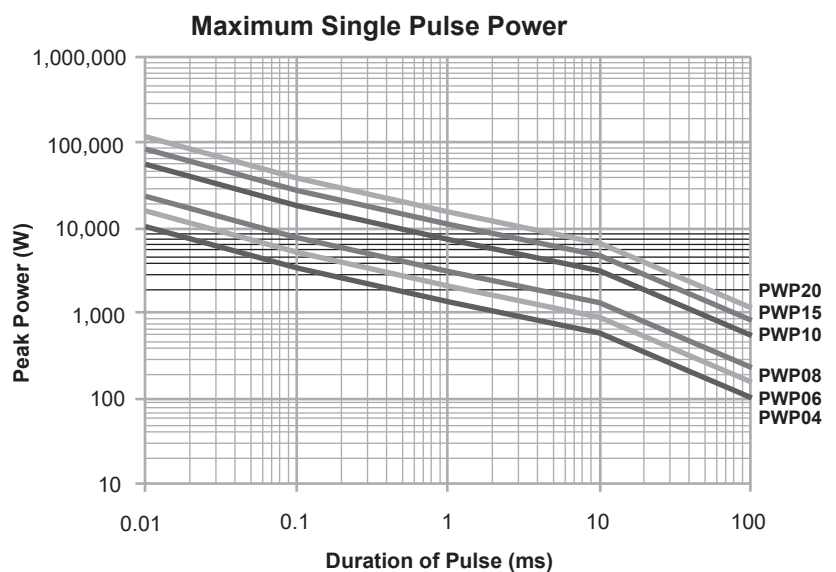
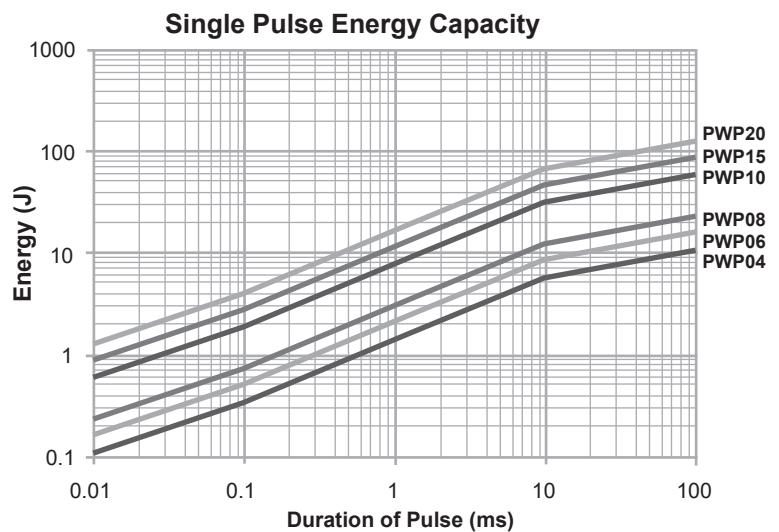
PWP Series

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%



General Note

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

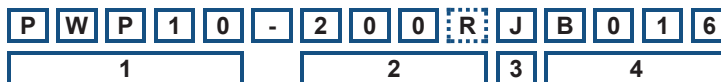
PWP Series

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: PWP10-200RJB016 (PWP10, 200 ohms $\pm 5\%$, Pb-free)



1 Type	2 Value	3 Tolerance	4 Packing & Finish		
PWP04	E24 = 3/4 characters R = ohms K = kilohms	F = $\pm 1\%$	Bulk pack, Pb-free		
PWP06		J = $\pm 5\%$	B048	PWP04	480/box
PWP08			B036	PWP06	360/box
PWP10			B024	PWP08	240/box
PWP15			B016	PWP10	160/box
PWP20			B012	PWP15	120/box
			B008	PWP20	80/box

General Note

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