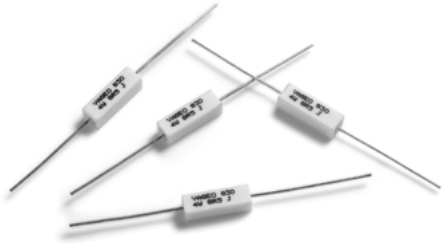
Fiberglass Cement Resistors

Power Wirewound & Axial Lead Type

Normal & Miniature Style [PSP Series]



INTRODUCTION

The PSP Series Resistors are wound on Fiberglass core. The materials used and the construction techniques ensure excellent flame resistance, arc resistance and moisture resistance as well as self-extinguishing capabilities. They will withstand the most rigorous loading test.

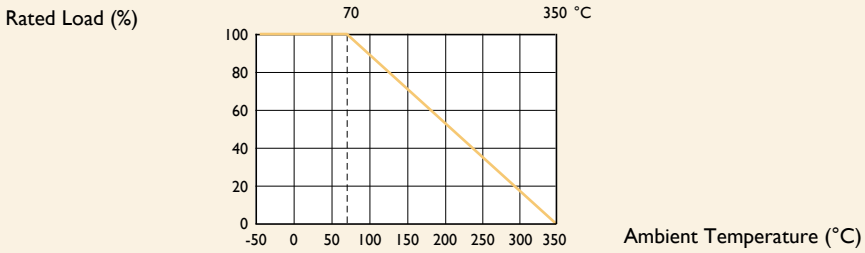
As resistors in radio and television receivers, hazardous conditions such as smoking and redheat can be completely prevented by the proper choice of power resistors.

FEATURES

Power Rating	4W, 5W, 7W, 9W, 11W, 17W
Resistance Tolerance	±5%, ±10%
T.C.R	±10ppm/°C, ±40ppm/°C, 400±50ppm/°C

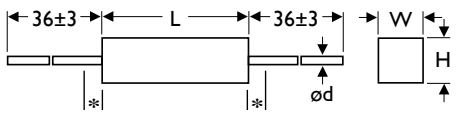
DERATING CURVE

For resistors operated in ambient temperatures above 70°C, power rating must be derated in accordance with the curve below.



DIMENSIONS

Unit: mm



* 6mm, reduced solderability in this area

STYLE		DIMENSION			
Normal	**Miniature**	**L**	**W**	**H**	**ød**
PSP400	-	20±1.0	6.4±0.3	6.4±0.3	0.8±0.02
PSP500	-	25±1.0	6.4±0.3	6.4±0.3	0.8±0.02
-	PSP7WS	25±1.0	9.0±0.3	9.0±0.3	0.8±0.02
PSP700	-	38±1.0	6.4±0.3	6.4±0.3	0.8±0.02
PSP900	-	38±1.0	9.0±0.3	9.0±0.3	0.8±0.02
PSP11A	-	50±1.5	9.0±0.3	9.0±0.3	0.8±0.02
PSP17A	-	75±2.0	9.0±0.3	9.0±0.3	0.8±0.02

Note:

ELECTRICAL CHARACTERISTICS

STYLE	PSP400	PSP500	PSP7WS	PSP700	PSP900	PSP11A	PSP17A
Power Rating at 70°C	4W	5W	7W		9W	11W	17W
Maximum working voltage	$\sqrt{PxR}$						
Voltage Proof on Insulation	2000V						
Resistance Range	0.1 Ω - 9.1K Ω	0.15 Ω - 15K Ω		0.33 Ω - 33K Ω		0.51 Ω - 47K Ω	0.91 Ω - 82K Ω
Operating Temp. Range	-55°C to +350°C						
Temperature Coefficient	±10ppm/°C, ±40ppm/°C, 400±50ppm/°C						

Note: Special value is available on request

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD		APPRAISE
Short Time Overload	IEC 60115-1 4.13	10 times rated power for 5 Sec.	±2.0%+0.05Ω
Voltage Proof on Insulation	IEC 60115-1 4.7	in V-block for 60 Sec., test voltage by type	By type
Temperature Coefficient	IEC 60115-1 4.8	-55°C to +155°C	By type
Insulation Resistance	IEC 60115-1 4.6	in V-block for 60 Sec.	>10,000MΩ
Solderability	IEC 60115-1 4.17	235±5°C for 3±0.5 Sec.	95% Min. coverage
Solvent Resistance of Marking	IEC 60115-1 4.30	IPA for 5±0.5 Min. with ultrasonic	No deterioration of coatings and markings
Robustness of Terminations	IEC 60115-1 4.16	Direct load for 10 Sec. in the direction of the terminal leads	≥50N
Periodic-pulse Overload	IEC 60115-1 4.39	4 times RCWV 10,000 cycles (1 Sec. on, 25 Sec. off)	±2.0%+0.05Ω
Damp Heat Steady State	IEC 60115-1 4.24	40±2°C, 90-95% RH for 56 days, loaded with 0.1 times RCWV	±2.0%+0.05Ω
Endurance at 70°C	IEC 60115-1 4.25	70±2°C at RCWV for 1,000 Hr. (1.5 Hr. on, 0.5 Hr. off)	±3.0%+0.05Ω
Temperature Cycling	IEC 60115-1 4.19	-55°C ⇨ Room Temp. ⇨ +155°C ⇨ Room Temp. (5 cycles)	±2.0%+0.05Ω
Resistance to Soldering Heat	IEC 60115-1 4.18	260±3°C for 10±1 Sec., immersed to a point 3±0.5mm from the body	±0.2%+0.05Ω

Note: RCWV (Rated Continuous Working Voltage) = $\sqrt{\text{Power Rating} \times \text{Resistance Value}}$ or Max. working voltage listed above, whichever less.

EXPLANATIONS OF ORDERING CODE

MFR	-12	F	T	F	52-	100R
Code 1 - 3 **Series Name** See Index	Code 4 - 6 **Power Rating** -05 = ød0.5mm -06 = ød0.6mm -07 = ød0.7mm -08 = ød0.8mm -10 = ød1.0mm -14 = ød1.4mm -12 = 1/6W -25 = 1/4W 25S = 1/4WS -50 = 1/2W 50S = 1/2WS 100 = 1W 1WS = 1WS 200 = 2W 2WS = 2WS 204 = 0.4W 207 = 0.6W 300 = 3W 3WS = 3WS 3WM = 3WM 400 = 4W 500 = 5W 5WS = 5WS 5SS = 5WSS 700 = 7W 7WS = 7WS 10A = 10W 20A = 20W 30A = 30W 40A = 40W 50A = 50W 10S = 10WS 15A = 15W 25A = 25W 10B = 100W 25B = 250W	Code 7 **Tolerance** P = ±0.02 % A = ±0.05 % B = ±0.1 % C = ±0.25% D = ±0.5 % F = ±1 % G = ±2 % J = ±5 % K = ±10 % - = Base on Spec.	Code 8 **Packing Style** T = Tape/Box R = Tape/Reel B = Bulk	Code 9 **Temperature Coefficient of Resistance** - = Base on Spec. A = ±5 ppm/°C B = ±10 ppm/°C C = ±15 ppm/°C S = ± 20ppm/°C D = ±25 ppm/°C E = ±50 ppm/°C F = ±100 ppm/°C G = ±200 ppm/°C H = ±250 ppm/°C I = ±300 ppm/°C J = ±350 ppm/°C	Code 10 - 12 **Forming Type** 26- = 26mm 52- = 52.4mm 73- = 73mm 81- = 81mm 91- = 91mm F = F Type FK = FK Type FKK = FKK Type FFK = F-form Kink M = M-Type Forming MB = M-form W/flat MT = MT Type Forming MR = MR Type AV = AVIsert PN = PANAsert	Code 13 - 17 **Resistance Value** 0R1 = 0.1 100R = 100 10K = 10,000 10M = 10,000,000

EXCEPTION:

• Cement series:

<Code 8>: Special packing style code

B: Bulk with wirewound or metal oxide sub-assembly for resistance value
W: Bulk with ceramic based wirewound sub-assembly for resistance value
M: Bulk with metal oxide sub-assembly for resistance value
F: Bulk with Fiberglass based wirewound sub-assembly for resistance value

<Code 10-12>: Without forming code

Example: SQP500J**B**-10R

• JPW series:

<Code 13-17>: without resistance value code

Example: JPW-06-T-52-

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