

DATA SHEET

FIBERGLASS CEMENT RESISTORS

Power, Wirewound, Vertical Mount
PSM Series

$\pm 5\%$, $\pm 10\%$

4W to 17W

RoHS compliant & Halogen Free



YAGEO

Product specification – August 31, 2023 V.1





APPLICATIONS

- Power applications
- Home appliance
- Industry

FEATURES

- Fiberglass core, high ohmic
- Miniaturization
- Axial terminal
- Flameproof ceramic case
- RoHS compliant and halogen free

ORDERING INFORMATION

Part number of the fiberglass cement resistor is identified by the series, power rating, tolerance, packing, temperature coefficient and resistance value.

PART NUMBER

PSM (1)	400 (2)	J (3)	B (4)	- (5)	100R (6)
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(1) SERIES

PSM series

(2) POWER RATING

400 = 4W

900 = 9W

500 = 5W

11A = 11W

7WS = 7 W

17A = 17W

700 = 7W

(3) TOLERANCE

J = $\pm 5\%$

K = $\pm 10\%$

(4) PACKAGING

B = Bulk

(5) TEMPERATURE COEFFICIENT OF RESISTANCE

- = Based on spec.

(6) RESISTANCE VALUE

E24 Series

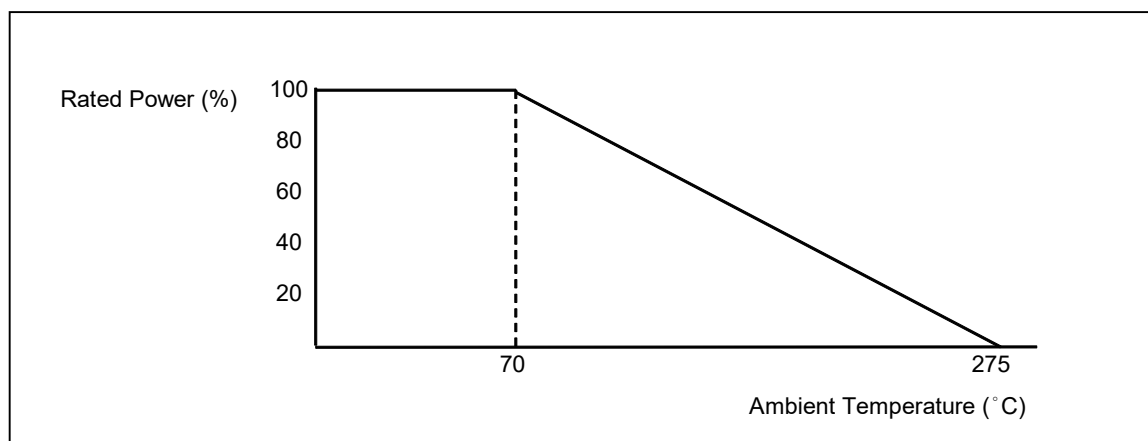
Example:

0R1 = 0.1 Ω , 100R = 100 Ω , 1K = 1,000 Ω

DIMENSIONS

Unit: mm

	Normal	Miniature	L	W	H	ψd
	PSM400	-	20±1.0	7.0±0.5	8.0±0.4	0.8±0.02
	PSM500	-	25±1.0	7.0±0.5	8.0±0.4	0.8±0.02
	-	PSM7WS	25±1.0	9.0±0.4	10.0±0.4	0.8±0.02
	PSM700	-	38±1.0	7.0±0.5	8.0±0.4	0.8±0.02
	PSM900	-	38±1.0	9.0±0.4	10.0±0.4	0.8±0.02
	PSM11A	-	50±1.0	9.0±0.4	10.0±0.4	0.8±0.02
	PSM17A	-	75±1.0	9.0±0.4	10.0±0.4	0.8±0.02
	* 6mm, reduced solderability in this area					

DERATING CURVE**ELECTRICAL CHARACTERISTICS**

CHARACTERISTICS	PSM400	PSM500	PSM7WS	PSM700	PSM900	PSM11A	PSM17A
Power Rating at 70 °C	4W	5W	7W	7W	9W	11W	17W
Voltage Proof on Insulation	2000V	2000V	2000V	2000V	2000V	2000V	2000V
Maximum Working Voltage	$\sqrt{P \times R}$						
Resistance Range	0.1Ω ~ 2.2KΩ	0.1Ω ~ 2.2KΩ	0.1Ω ~ 2.5KΩ	0.1Ω ~ 3.9KΩ	0.1Ω ~ 3.9KΩ	1Ω ~ 10KΩ	1Ω ~ 10KΩ
Operating Temp. Range	- 55°C to +275°C						
Temperature Coefficient	see table I						

Note: For resistance value out of above range is by request.

TABLE I TEMPERATURE COEFFICIENT

TYPE	TEMP. COEFFICIENT ± 400 PPM/ °C	TEMP. COEFFICIENT ± 100 PPM/ °C
PSM400	$\leq 0.2\Omega$	$\geq 0.22\Omega$
PSM500	$\leq 0.3\Omega$	$\geq 0.33\Omega$
PSM700	$\leq 0.68\Omega$	$\geq 0.75\Omega$
PSM7WS	$\leq 0.3\Omega$	$\geq 0.33\Omega$
PSM900	$\leq 0.68\Omega$	$\geq 0.75\Omega$
PSM11A	$\leq 1\Omega$	$\geq 1.1\Omega$
PSM17A	$\leq 1.6\Omega$	$\geq 1.8\Omega$

TEST AND REQUIREMENTS

TEST	TEST METHOD	PROCEDURE	APPRAISE
Short Time Overload	IEC 60115-1 4.13	10 times rated power for 5 sec.	$\pm 2.0\% + 0.05\Omega$
Voltage Proof on Insulation	IEC 60115-1 4.7	In V-Block for 60 sec. test voltage as above table	No Breakdown
Temperature Coefficient	IEC 60115-1 4.8	Between -55°C to +155°C	By Type
Insulation Resistance	IEC 60115-1 4.6	In V-Block for 60 sec.	$> 10,000M\Omega$
Solderability	IEC 60115-1 4.17	245 \pm 5°C for 3 \pm 0.5 Sec.	95% Min. coverage
Solvent Resistance of Marking	IEC 60115-1 4.30	IPA for 5 \pm 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	$\geq 50N$
Periodic-pulse Overload	IEC 60115-1 4.39	4 times RCWV 10,000 cycles (1 Sec. on, 25 Sec.off)	$\pm 2.0\% + 0.05\Omega$
Damp Heat Steady State	IEC 60115-1 4.24	40 \pm 2°C, 90-95% RH for 56 days, loaded with 0.1 times RCWV	$\pm 2.0\% + 0.05\Omega$
Endurance at 70°C	IEC 60115-1 4.25	70 \pm 2°C at RCWV(or Umax., whichever less) for 1,000 Hr.(1.5 Hr.on, 0.5 Hr. off)	$\pm 3.0\% + 0.05\Omega$
Temperature Cycling	IEC 60115-1 4.19	➔ -55°C ➔ Room Temp. ➔ +155°C Room Temp.(5 cycles)	$\pm 2.0\% + 0.05\Omega$
Resistance to Soldering Heat	IEC 60115-1 4.18	260 \pm 3°C for 10 \pm 1 Sec., immersed to a point 3 \pm 0.5mm from the body	$\pm 2.0\% + 0.05\Omega$

Note:

RCWV (Rated Continuous Working Voltage):

The DC or AC (rms) continuous working voltage corresponding to the rated power is determined by the following formula:

$$V = \sqrt{P \times R}$$

or max. working voltage whichever is less

Where

V=Continuous rated DC or
AC (rms) working voltage (V)

P=Rated power (W)

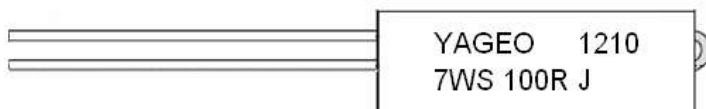
R=Resistance value (Ω)

BULK PACKING

Unit: Piece

Normal	Miniature	PACKAGE	Quantity
PSM400	-	Bulk	1,000
PSM500	-	Bulk	1,500
PSM700	-	Bulk	600
-	PSM7WS	Bulk	500
PSM900	-	Bulk	500
PSM11A	-	Bulk	500
PSM17A	-	Bulk	500

MARKING



Example:

YAGEO	= Brand
1210	= Date code
7WS	= Power rating
100R	= Resistance
J	= Tolerance

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version 1	Aug.31, 2023	-	- Revised LEGAL DISCLAIMER
Version 0	Aug.2, 2021	-	- First issue of this specification

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