Innovative Service Around the Globe YAGEO

# DATA SHEET

## FIBERGLASS CEMENT RESISTORS

Power, Wirewound, Axial Lead

PSP Series

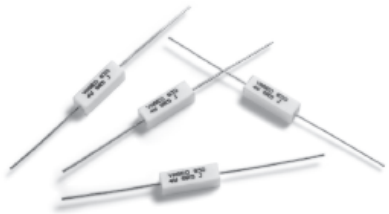
±5%, ±10%

**4W to 17W**

**RoHS compliant & Halogen Free**

YAGEO

Product specification – August 12, 2021 V.0



## APPLICATIONS

- All general purpose applications

## FEATURES

- Fiberglass core, high ohmic
- Miniaturization
- Vertical 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

| PSP | 400 | J | B | - | 100R |
|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) |

### (1) SERIES

PSP Series

### (2) POWER RATING

| | | |
|---|---|---|
| 400 = 4W | 700 = 7W | 17A = 17W |
| 500 = 5W | 900 = 9W | |
| 7WS = 7W | 11A = 11W | |

### (3) TOLERANCE

J = ±5% K = ±10%

### (4) PACKAGING

B = Bulk

### (5) TEMPERATURE COEFFICIENT OF RESISTANCE

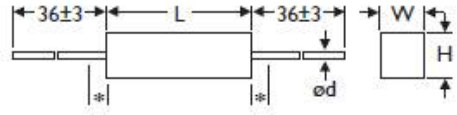
- = Based on spec.

### (6) RESISTANCE VALUE

E24 Series
Example:
0R1 = 0.1Ω, 100R = 100Ω, 1K = 1,000Ω

## DIMENSIONS

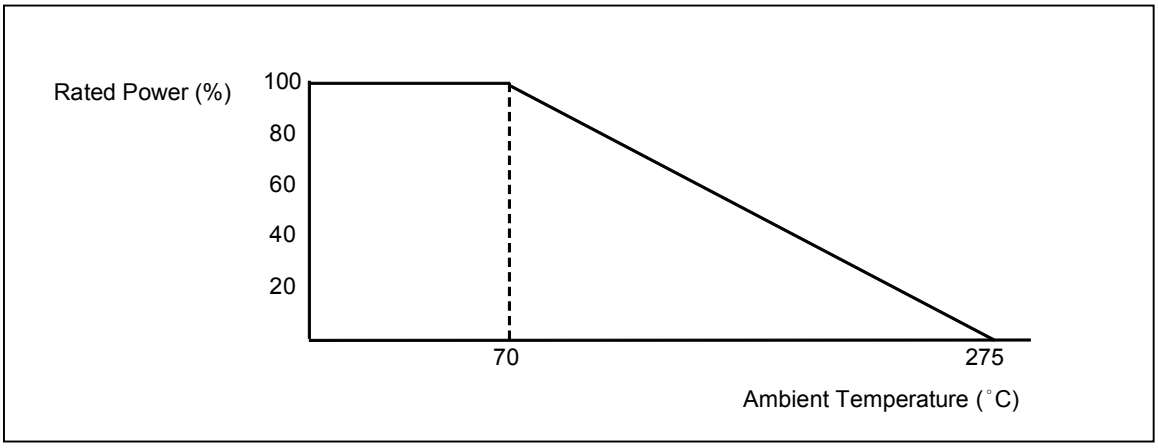
Unit: mm




* 6mm, reduced solderability in this area

| Normal | Miniature | L | W | H | ψd |
|---|---|---|---|---|---|
| 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±1.0 | 9.0±0.3 | 9.0±0.3 | 0.8±0.02 |
| PSP17A | - | 75±1.0 | 9.0±0.3 | 9.0±0.3 | 0.8±0.02 |

## DERATING CURVE




## ELECTRICAL CHARACTERISTICS

| CHARACTERISTICS | PSP400 | PSP500 | PSP7WS | PSP700 | PSP900 | PSP11A | PSP17A |
|---|---|---|---|---|---|---|---|
| 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 | √(P X 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 |
|---|---|---|
| PSP400 | ≤0.2Ω | ≥0.22Ω |
| PSP500 | ≤0.3Ω | ≥0.33Ω |
| PSP700 | ≤0.68Ω | ≥0.75Ω |
| PSP7WS | ≤0.3Ω | ≥0.33Ω |
| PSP900 | ≤0.68Ω | ≥0.75Ω |
| PSP11A | ≤1Ω | ≥1.1Ω |
| PSP17A | ≤1.6Ω | ≥1.8Ω |

## TEST AND REQUIRMENTS

| TEST | TEST METHOD | PROCEDURE | 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 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. | >10,000MΩ |
| Solderability | IEC 60115-1 4.17 | 245±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(or Umax., whichever less) 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 | ±1.0%+0.05Ω |

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)

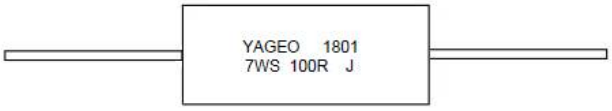
R=Resistance value (Ω)

## BULK PACKING

Unit: Piece

| Normal | Miniature | PACKAGE | Quantity |
|---|---|---|---|
| PSP400 | - | Bulk | 1,700 |
| PSP500 | - | Bulk | 1,800 |
| PSP700 | - | Bulk | 1,200 |
| - | PSP7WS | Bulk | 600 |
| PSP900 | - | Bulk | 600 |
| PSP11A | - | Bulk | 600 |
| PSP17A | - | Bulk | 400 |

## MARKING




**Example:**

| | |
|---|---|
| YAGEO | = Brand |
| 1801 | = Date code |
| 7WS | = Power rating |
| 100R | = Resistance |
| J | = Tolerance |

## REVISION HISTORY

| REVISION | DATE | CHANGE NOTIFICATION | DESCRIPTION |
|---|---|---|---|
| Version 0 | Aug.2, 2021 | - | - First issue of this specification |

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