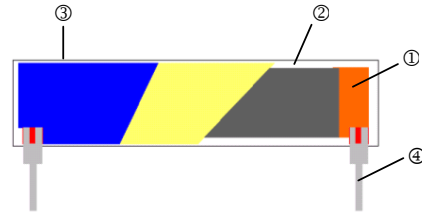


Thin Film Precision High Wattage Resistor – PHW Series

Construction



①	Inner Electrode (Ag)	③	Overcoat (Epoxy)
②	Resistor Layer (Ni/Cr)	④	Terminal (Cu/ Sn)

Features

- High power rating up to 3 Watts
- Resistance range from 5 ohm to 10K ohm.
- Low TCR down to ± 15 PPM/ $^{\circ}$ C
- Tight tolerance down to $\pm 0.1\%$

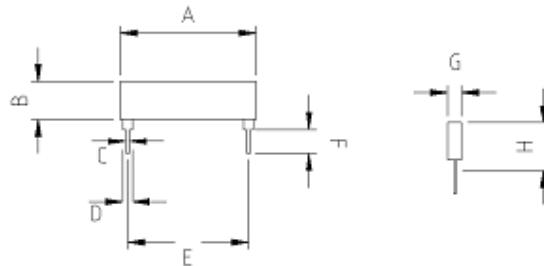
Dimensions

Unit: mm

Type	A	B	C	D	E	F	G	H max.	Weight (g) (1000pcs)
PHW 2500	28 \pm 0.2	6.35 \pm 0.2	0.5	1.4	25 \pm 0.5	3.3 \pm 0.7	0.55 \pm 0.1	8.5	0.38

Applications

- Medical Surge Protection
- Ideal Replacement of MELF Resistors
- Measurement Equipment



Part Numbering

PHW	2500	F	B	D	R	1001	N
Product Type	Dimensions (AxB)	Resistance Tolerance	Packaging Code	TCR (PPM/ $^{\circ}$ C)	Power Rating	Resistance	Marking
	2500: 28x6.35	B: $\pm 0.1\%$ C: $\pm 0.25\%$ D: $\pm 0.5\%$ F: $\pm 1\%$	B: Bulk	B: ± 15 C: ± 25 D: ± 50	R: 3W	0050: 5 Ω 1001: 1K Ω 1004: 1M Ω	: Standard Marking N: No Marking

Electrical Characteristics Specifications

Item Type	Power Rating at 70 $^{\circ}$ C	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Resistance Range				TCR (PPM/ $^{\circ}$ C)
					$\pm 0.1\%$	$\pm 0.25\%$	$\pm 0.5\%$	$\pm 1\%$	
PHW2500	3W	-40 ~ +85 $^{\circ}$ C	200V	400V	5 Ω - 10K Ω				± 15 ± 25 ± 50

Operating Voltage= $\sqrt{(P^*R)}$ or Max. operating voltage listed above, whichever is lower.

Overload Voltage= $2.5^*\sqrt{(P^*R)}$ or Max. overload voltage listed above, whichever is lower.

■ Environmental Characteristics

Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	+25/-55/+25/+125/+25°C
Short Time Overload	$\Delta R \pm 0.5\%$	RCWV*2.5 or Max. overload voltage for 5 seconds
Insulation Resistance	>1000M Ω	Apply 100V _{DC} for 1 minute
Endurance	$\Delta R \pm 0.5\%$	70 \pm 2°C, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat with Load	$\Delta R \pm 0.3\%$	40 \pm 2°C, 90~95% R.H. Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Dry Heat	$\Delta R \pm 0.2\%$	at +155°C for 1000 hrs
Bending Strength	$\Delta R \pm 0.2\%$	Bending amplitude 3mm for 10 seconds
Solderability	90% min. coverage	245 \pm 5°C for 3 seconds
Resistance to Soldering Heat	$\Delta R \pm 0.2\%$	260 \pm 5°C for 10 seconds
Dielectric Withstand Voltage	By Type	Apply Max. overload voltage for 1 minute
Thermal Shock	$\Delta R \pm 0.25\%$	-55°C~150°C, 100 cycles
Low Temperature Operation	$\Delta R \pm 0.2\%$	1 hour, -65°C, followed by 45 minutes of RCWV

■ Reference Standards: MIL-STD-202, JIS-C 5201-1

■ Storage Temperature: 25 \pm 3°C; Humidity < 80%RH