

# High Power Type

Normal Style [ PNP V Series ]



### **FEATURES**

Power Rating	IW, 3W, 4W, 5W, 7W, IOW
Resistance Tolerance	±1%, ±5%
T.C.R.	±100ppm/°C, ±300ppm/°C
Flameproof Multi-layer Coating Meets	UL-94V-0
Flameproof Feature Meets Overload Test	UL-1412

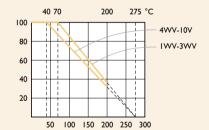
#### **INTRODUCTION**

The resistor element is a resistive wire which is wound in a single layer on a ceramic rod, with tinned connecting wires of electrolytic copper welded to the end-caps. The ends of the resistive wire are connected to the caps by welding. The resistors are coated with layers of green color flame-proof lacquer. High power in small package. The 5th color band is violet to represent PNPV series.

#### **DERATING CURVE**

For resistors operated in ambient temperatures above 40°C, power rating must be derated in accordance with the curve below.

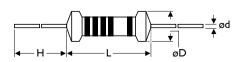
Rated Load (%)



Ambient Temperature (°C)

## **DIMENSIONS**

		OIII.11II11
STYLE	DIMENSION	



5th color code: violet

STYLE	DIMENSION	DIMENSION					
Normal	L	øD	н	ød			
PNPIWV	10±1.0	4.3±0.5	26±2.0	0.8±0.05			
PNP3WV	13±1.0	5.5±0.5	34±2.0	0.8±0.05			
PNP4WV	17±1.0	5.5±0.5	32±2.0	0.8±0.05			
PNP5WV	17±1.0	7.5±0.5	32±2.0	0.8±0.05			
PNP7WV	25±1.0	7.5±0.5	38±2.0	0.8±0.05			
PNP10V	44±1.0	8.0±0.5	28±2.0	0.8±0.05			

Note:			

## **ELECTRICAL CHARACTERISTICS**

STYLE	PNPIWV	PNP3WV	PNP4WV	PNP5WV	PNP7WV	PNPI0V
Power Rating at 40°C			4W	5W	7W	10W
Power Rating at 70°C	IW	3W				
Maximum working voltage	√P×R					
Voltage Proof on Insulation	300V					
Resistance Range (±1%)	0.ΙΩ - ΙΚΩ	0.1Ω - 2.8ΚΩ	0.ΙΩ - 4.3ΚΩ	0.1Ω - 8.2ΚΩ	0.1Ω - 10ΚΩ	0.ΙΩ - Ι7ΚΩ
Resistance Range (±5%)	0.047Ω - ΙΚΩ	0.047Ω - 2.8ΚΩ	0.047Ω - 4.3ΚΩ	0.047Ω - 8.2ΚΩ	0.1Ω - 10ΚΩ	0.1Ω - 17ΚΩ
Operating Temp. Range	-40°C to +200°C					
Temperature Coefficient	±300ppm/°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.	>100ΜΩ
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	≥2.5kg (24.5N)
Damp Heat Steady State	IEC 60115-1 4.24	40±2°C, 90-95% RH for 56 days, loaded with 0.1 times RCWV	±5.0%+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)	±5.0%+0.05Ω
Temperature Cycling	IEC 60115-1 4.19	-55°C ⇒ Room Temp. ⇒ +155°C ⇒ Room Temp. (5 cycles)	±1.0%+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
Accidental Overload Test	IEC 60115-1 4.26	4 times RCWV for 1 Min.	No evidence of flaming or arcing