

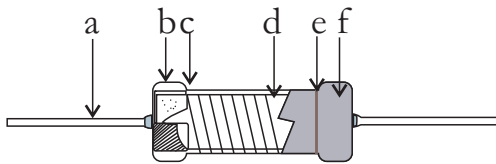
● Features

- I Surge withstand IEC 61000-4-5 1.2/50 μ s
- II Low thermal resistant ceramic core
- III E24 resistance values
- IV RoHS compliant*
- V Wide power range (1~8 W)
- VI Coating material meets UL 94V-0 requirements

● Applications

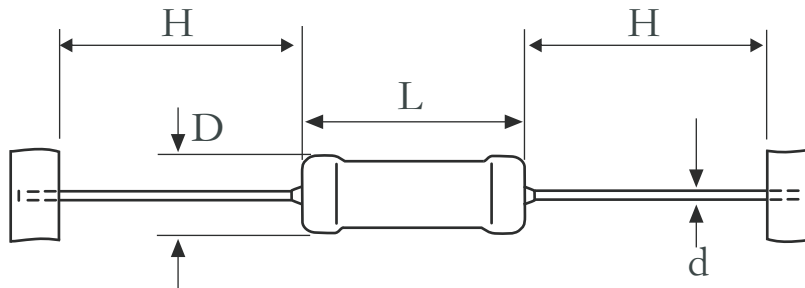
- I Smart meters
- II Renewable energy
- III Industrial
- IV Power supplies/chargers
- V Lighting
- VI Instruments/gauges
- VII White goods

● Constructions



a	Lead wire
b	Cap
c	Ceramic core
d	Wire wound
e	Marking or color code
f	Insulation coat

● Dimensions



Type	Power (W) @70°C	Dimensions(mm)				Range Resistance (Ω)
		L \pm 1.0	D \pm 1.0	d \pm 0.05	H \pm 3.0	
WRS01	1W	9.5	4.5	0.65	28	0.1 Ω ~5K Ω
WRS01A	1W	11.5	5.0	0.65	28	
WRS02	2W	11.5	5.0	0.65	28	
WRS02A	2W	15.5	5.5	0.75	28	
WRS03	3W	15.5	5.5	0.75	28	1 Ω ~10K Ω
WRS03A	3W	17.5	6.5	0.75	28	
WRS05	5W	17.5	6.5	0.75	28	
WRS05A	5W	24.5	8.5	0.75	38	
WRS07	7W	24.5	8.5	0.75	38	
WRS07A	7W	29.5	8.5	0.75	38	
WRS08	8W	29.5	8.5	0.75	38	

● Reference Standards

IEC 61000-4-5

Ordering Information

Example:

WRS	01	J	4R7
(1)	(2)	(3)	(4)
Series Name	Power Rating	Resistance Tolerance	Resistance

(1)Type: WRS SERIES

(2)Power Rating: 01=1W、02=2W、03=3W、05=5W、07=7W、08=8W

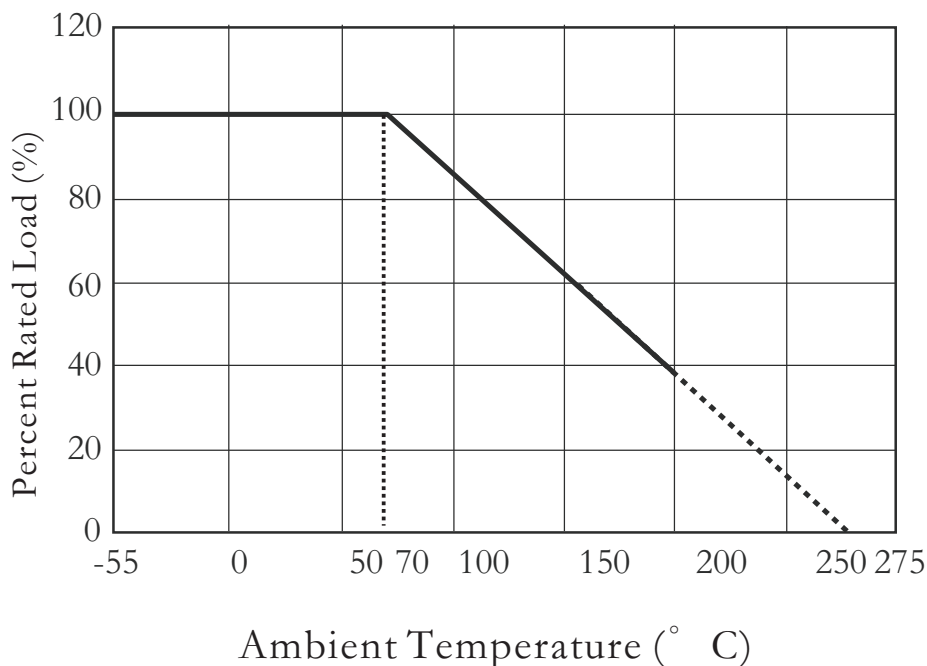
(3)Tolerance: J=±5%

(4)Resistance Value:R10=0.1Ω、4R7=4.7R、47R0=47Ω

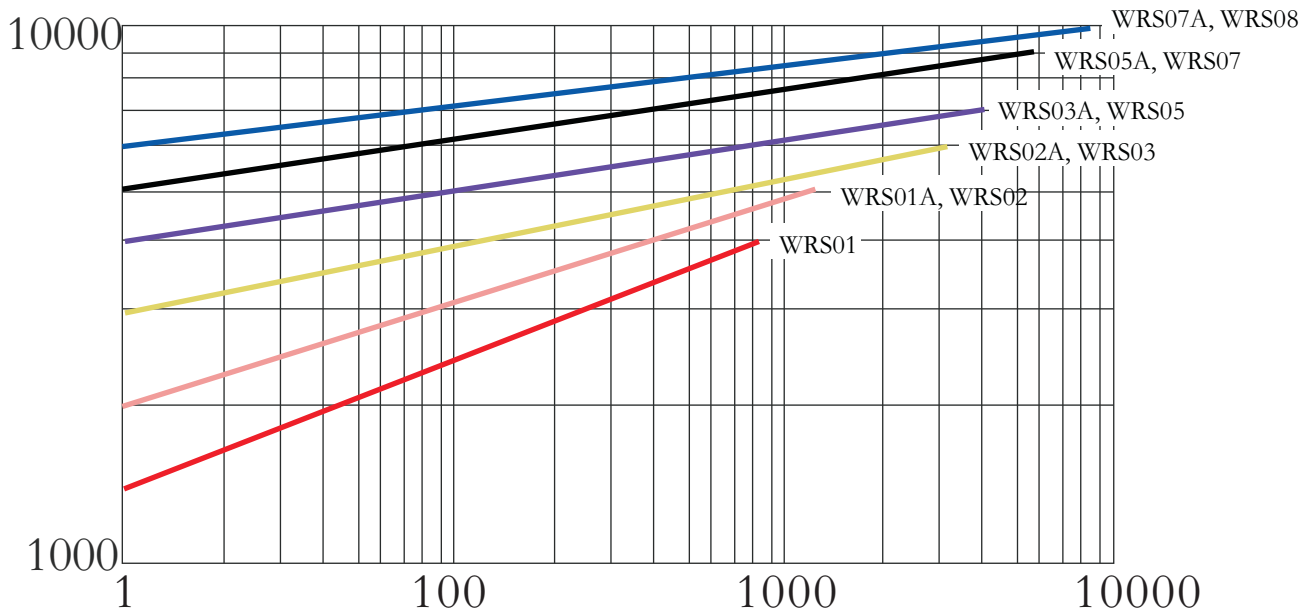
Applications And Ratings

Type	Power (W) @70°C	Range Resistance (Ω)	Max. voltage	Tolerance	Temperature Coefficient	Operating Temperature
WRS01	1W	0.1Ω~5KΩ	√ P*R	J=±5%	±200 ppm/°C	-55 °C to +200°C
WRS01A	1W					
WRS02	2W					
WRS02A	2W					
WRS03	3W	1Ω~10KΩ				
WRS03A	3W					
WRS05	5W					
WRS05A	5W					
WRS07	7W					
WRS07A	7W					
WRS08	8W					

Derating Curve



Surge Performance - 1.2/50 μ s Pulse Withstanding Curve



Environmental Characteristics

Test	Conditions	Specification
Short Time Overload	10 times rated power for 5 seconds.	$\Delta R \leq \pm(5\% \pm 0.05 \Omega)$
Solderability	$245 \pm 3^\circ\text{C}$ for 2.5 ± 0.5 seconds.	Over 95 % coverage
Resistance to Solder Heat	$260 \pm 5^\circ\text{C}$ for 10 ± 1 seconds.	$\Delta R \leq \pm(1\% + 0.05 \Omega)$
Temperature Cycle	5 cycles, $-55^\circ\text{C} \pm 3^\circ\text{C}$ for 30 minutes, Room temperature for 15 minutes, $+155 \pm 2^\circ\text{C}$ for 30 minutes, Room temperature for 15 minutes	$\Delta R \leq \pm(2\% + 0.05 \Omega)$
Dielectric Strength	Test voltage > 500 Vrms for > 1 minute.	Pass
Insulation Resistance	Test voltage > 500 Vrms for 1 minute.	$> 10^9 \Omega$
Load Life Humidity	Rated continuous voltage for 1000 hours, 1.5 hours ON and 0.5 hours OFF at 90~95 % relative humidity and test temperature of $40^\circ\text{C} \pm 2^\circ\text{C}$	$\Delta R \leq \pm(5\% + 0.05 \Omega)$
Load Life	Rated continuous voltage for 1000 hours, 1.5 hours ON and 0.5 hours OFF at a test temperature of $70^\circ\text{C} \pm 2^\circ\text{C}$. 1000 hours at rated power.	$\Delta R \leq \pm(5\% + 0.05 \Omega)$
Surge	IEC 61000-4-5 1.2/50 μ s exponential.	$\Delta R \leq \pm(5\% + 0.05 \Omega)$