

SINLOON®

耐脈衝保險絲金屬膜電阻

PWFR

Pulse Withstanding Fusible Flameproof Metal Film Resistor

◆ FEATURES

- Complete Flameproof Construction UL1412
- Exceptional long-term stability.
- High Power to Size Ratio for Significant Space Savings
- High Surge/Overload Capability
- Controlled temperature Coefficient
- Resistance Standard Tolerance: ±10%, ±20%.

Figure:



FlameProof: Silicone Coating - Pink

◆ EXTERNAL DIMENSIONS

STYLE	Power	DIMENSION (mm)			
		L	ΦD	H	Φd
PWFR	2WS	11.0±0.5	4.5±0.5	35±2	0.78±0.02



\* The type designation shall be in the following form and as specified.

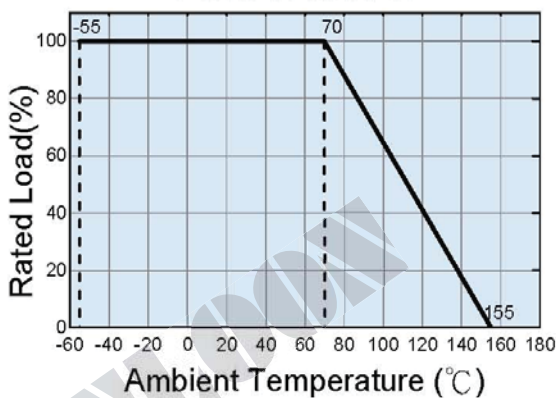
◆ RATED POWER

Type	Power	Maximum Voltage		Dielectric withstanding Voltage (AC)	Resistance Range	Operating temperature Range
		Working	Overload			
PWFR	2WS	500V	1KV	500V	1R~100Ω	-55°C ~ +155°C

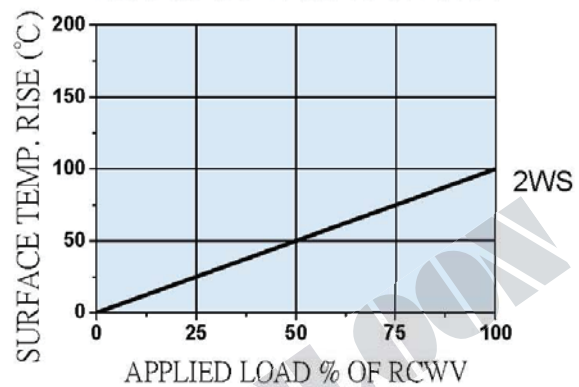
\* Rated power is maximum power which can continuously loaded at specified ambient determined 70°C, however when the ambient temperature exceeds 70°C, rated power should be determined from the derating Curve of Fig 1.

$$\text{Rated continuous working voltage (RCWV)} = \sqrt{\text{Power rating} \times \text{Resistance value}}$$

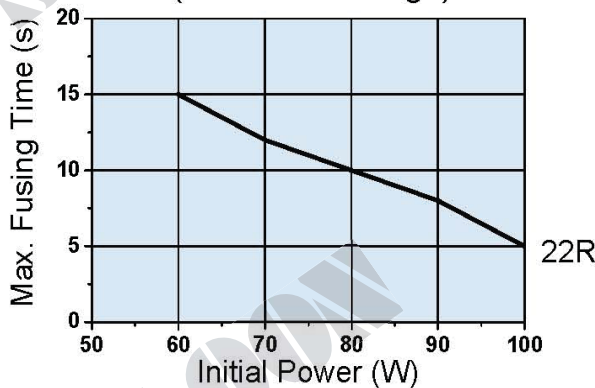
● POWER GRAPH



● HOT-SPOT TEMPERATURE



● Fusing Characteristic (Constant Voltage)



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◆ ORDERING

Example: PWFR2WSE22R0KTB (2WS-22R 10%)

Type	Power	TCR/°C ppm	Resistance	Tolerance	Package
PWFR	2WS	E=±100	100 =10Ω	J = ±5%	T = T/Box
		K=±150	101 =100Ω	K = ±10%	B = Bulk
		F=±200	102=1KΩ	M = ±20%	R = Reel

◆ PERFORMANCE SPECIFICATIONS

PERFORMANCE TEST	TEST METHOD	APPRAISE
SHORT TIME OVERLOAD	2.5 times RCWV for 5 seconds	±(0.25%+0.05Ω)
TEMPERATURE COEFFICIENT(T.C.R.)	Resistance value at room Temperature and room Temperature+100°C	By Type
DIELECTRIC WITHSTANDING VOLTAGE	In V-Block for 60 seconds	By Type
PULSE OVERLOAD	4 times RCWV for10000cycles(1sec.on , 25secs.off)	±(0.75%+0.05Ω)
INSULATION RESISTANCE	In V-Block	>100MΩ
LOAD LIFE	70°C at RCWV for1000hrs.(1.5hrs. on , 0.5hrs.off)	±(1.5%+0.05Ω)
LOAD LIFE IN HUMIDITY	40±2°C 90~95%RH at RCWV for1000hrs. (1.5hrs. on , 0.5hrs.off)	±(1.5%+0.05Ω)
SOLDER ABILITY	260±5°C for 2±0.5 seconds	95% min. coverage
RESISTANCE TO SOLVENT	Trichloroethane for 1 min. with ultrasonic	No deterioration of coatings and markings
TERMINAL STRENGTH	Direct load for 10 sec. In the direction off the terminal leads.	Tensile: ≥2.5kg

Reference Standards: IEC 60115-1

Storage Temperature: 25±3°C; Humidity < 80%RH

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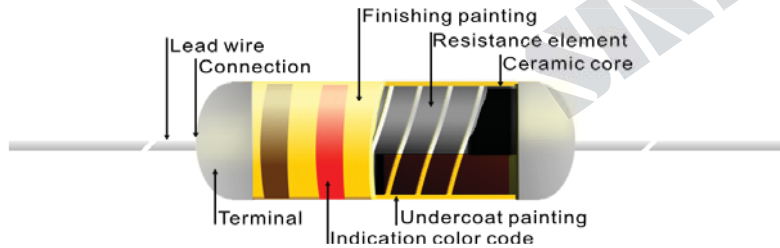
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PWDR

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◆ STRUCTURE DIAGRAM

The construction of resistor (PWFR Series) shall be Figure.



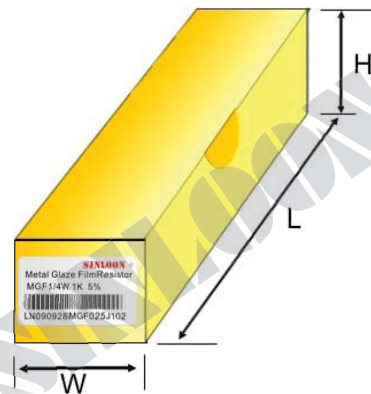
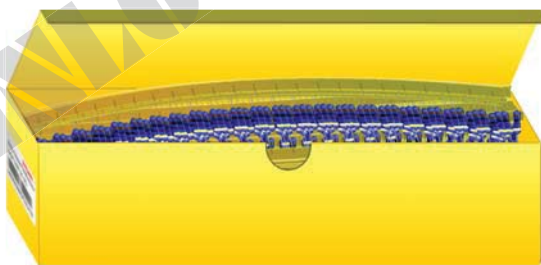
Item	Material
Ceramic Core	High alumina ceramic is used
Resistance element	The resistor element shall consist of metal glaze film.
Terminal	Tinned iron cap.
Connection	The lead wire, Which is plated with solder, shall be mounted to the caps by welding process.
Lead Wire	Soldered or tinned annealed copper wire.
Undercoat Painting	Electric insulation varnish.
Finishing painting	Epoxy resin is used.
Indiction	Color code.

◆ Painting Resistor body color



◆ PACKAGE:

Type	Power	Form	Dimensions (mm)		
			L	W	H
PWFR	2WS	T52	265	107	102
		T63	265	107	102



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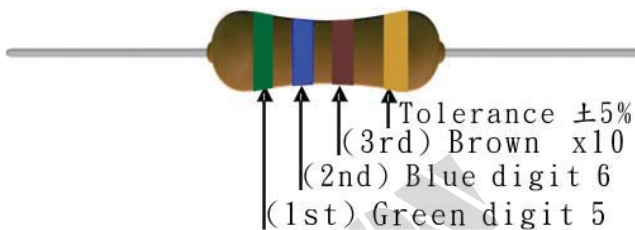
□ **Standard Resistor Color Code ( 4 band code)**

Color	Black	Brown	Red	Orange	Yellow	Green	Blue	Violet	Gray	White	Gold	Silver
1st digit	0	1	2	3	4	5	6	7	8	9		
2nd digit	0	1	2	3	4	5	6	7	8	9		
Multiplier	$\times 10^0$	$\times 10^1$	$\times 10^2$	$\times 10^3$	$\times 10^4$	$\times 10^5$	$\times 10^6$	$\times 10^7$	$\times 10^8$	$\times 10^9$		
Tolerance		$\pm 1\%$ (F)	$\pm 2\%$ (G)			$\pm 0.5\%$ (D)	$\pm 0.25\%$ (C)	$\pm 0.1\%$ (B)			$\pm 5\%$ (J)	$\pm 10\%$ (K)

□ **Examples:**

Fig-1:

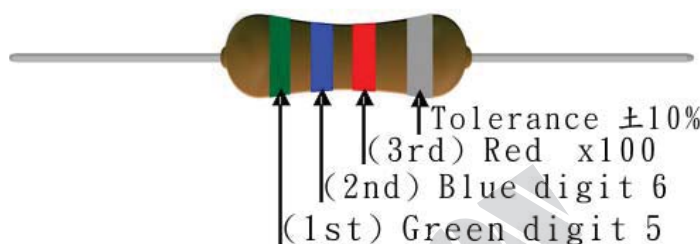
(E24) Resistor 560R 5%



Green, Blue, brown, silver tolerance band:  
 $56 \times 10 = 560$  ohms (560 ohms), with a tolerance of 5%

Fig-2:

(E24) Resistor 5.6K 10%



Green, blue, red, with silver tolerance band:  
 $56 \times 100 = 5.6$  kohms, with a tolerance of 10%

□ **Standard EIA Decade Resistor Value E24 series: (5% tolerance)**

10, 11, 12, 13, 15, 16, 18, 20, 22, 24, 27, 30, 33, 36, 39, 43, 47, 51, 56, 62, 68, 75, 82, 91

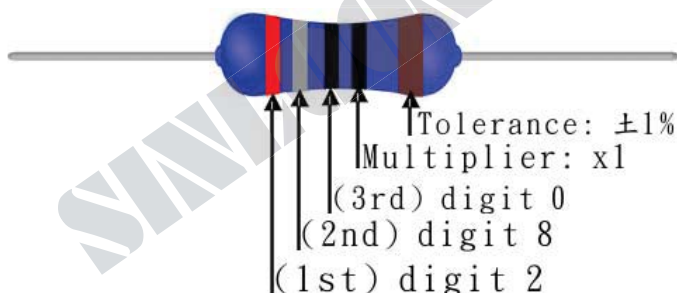
□ **Standard Resistor Color Code ( 5 band code)**

Color	Black	Brown	Red	Orange	Yellow	Green	Blue	Violet	Gray	White	Gold	Silver
1st digit	0	1	2	3	4	5	6	7	8	9		
2nd digit	0	1	2	3	4	5	6	7	8	9		
3rd digit	0	1	2	3	4	5	6	7	8	9		
Multiplier	$\times 10^0$	$\times 10^1$	$\times 10^2$	$\times 10^3$	$\times 10^4$	$\times 10^5$	$\times 10^6$	$\times 10^7$	$\times 10^8$	$\times 10^9$		
Tolerance		$\pm 1\%$ (F)	$\pm 2\%$ (G)			$\pm 0.5\%$ (D)	$\pm 0.25\%$ (C)	$\pm 0.1\%$ (B)			$\pm 5\%$ (J)	$\pm 10\%$ (K)

□ **Examples:**

Fig-3:

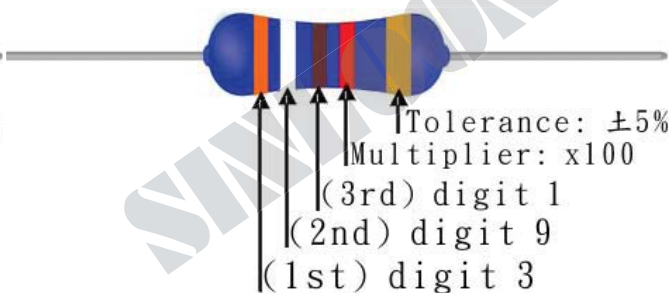
(E96) Resistor 280R  $\pm 1\%$



Red, Gray, Black, Black, Brown tolerance band:  
 $280 \times 1 = 280$  ohms (280 ohms), with a tolerance of 1%

Fig-4:

(E96) Resistor 39.1K  $\pm 5\%$



Orange, White, Brown, Red, Gold tolerance band:  
 $390 \times 100 = 39.1$ K ohms (39.1K ohms),  
with a tolerance of 5%

**E96 series: (1% tolerance)**

100, 102, 105, 107, 110, 113, 115, 118, 121, 124, 127, 130, 133, 137, 140, 143, 147, 150, 154, 158, 162, 165, 169, 174, 178, 182, 187, 191, 196, 200, 205, 210, 215, 221, 226, 232, 237, 243, 249, 255, 261, 267, 274, 280, 287, 294, 301, 309, 316, 324, 332, 340, 348, 357, 365, 374, 383, 392, 402, 412, 422, 432, 442, 453, 464, 475, 487, 491, 511, 523, 536, 549, 562, 576, 590, 604, 619, 634, 649, 665, 681, 698, 715, 732, 750, 768, 787, 806, 825, 845, 866, 887, 909, 931, 959, 976

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※Mayloon characteristic parameters of electronic product specification changes or updates without prior notice.