

小型金屬膜電阻器

MFS Series

Resistance Range : 10R ~ 1MΩ

Miniature Style Metal Film Resistor

◆ ORDERING PROCEDURE:

Example: MFS050F4701FTB

Power:	Type:	T.C.R/°C	Resistance	Tolerance	Package
1/4WS	MFS025	D=±50ppm	0001=0.1Ω	J = ±5%	TB = T/Box.
1/2WS	MFS050	E=±100ppm	0010=1Ω	H = ±3%	B = Bulk
1WS	MFS100	K=±150ppm	0200=20Ω	G = ±2%	
2WS	MFS200	F=±200ppm	3300=33Ω	F = ±1%	
3WS	MFS300	G=±300ppm	4701=4.7KΩ	D = ±0.5%	
		H=±400ppm	5602=56KΩ	C = ±0.25%	
			1003=100KΩ	B = ±0.1%	
			1004=1MΩ		

Figure



Resistor body color : Bule

◆ PRODUCT FEATURE:

Low cost, high performance.

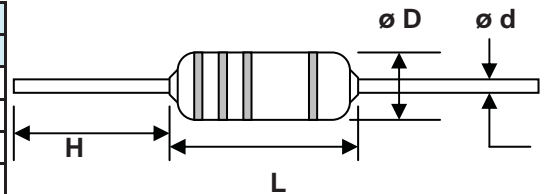
High power with small size for significant space savings.

Excellent long - term stability.

Variety of packing - bulk, strip pack, 26mm and 52mm tape and reel, cut and formed or radial Pana

◆ DIMENSION (mm)

Power:	STYLE	Dimension (mm)			
		L	ΦD	H	Φd
1/4WS	MFS025	3.2±0.2	1.8±0.3	28±2	0.430.02
1/2WS	MFS050	6.0±0.2	2.3±0.3	28±2	0.50.02
1WS	MFS100	9±0.5	3.2±0.5	26±2	0.60.02
2WS	MFS200	11.0±0.5	4.5±0.5	35±2	0.70.02
3WS	MFS300	15.0±0.5	5.0±0.5	32±2	0.80.02



◆ RATED POWER

Type	Power 70°C	Maximum Voltage		Dielectric withstanding Voltage (AC)	Max.intermittence Overload Voltage	Res. E96 Range(Ω)	Res. E192 Range(Ω)
		Working	Overload				
MFS025	1/4WS	200V	400V	300V	400V	10 ~1M	100R~100K
MFS050	1/2WS	250V	600V	500V	600V	10 ~1M	100R~100K
MFS100	1WS	350V	700V	700V	700V	10 ~1M	100R~100K
MFS200	2WS	500V	1000V	1000V	1000V	10 ~1M	100R~100K
MFS300	3WS	500V	1000V	1000V	1000V	10 ~1M	100R~100K
Operating temperature Range:		-55°C ~ 155°C					
Temperature Coefficient:		±15ppm/°C, ±25ppm/°C, ±50ppm/°C, ±100ppm/°C.					
Resistance Range:		E96 0.1R ~ 1M ohm Tolerance Range: ±1%, ±0.5%					
		E192 100R ~ 100K ohm Tolerance Range: ±0.25%, ±0.1%.					

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

■ Value Range for standard resistance, below over this resistance on request.



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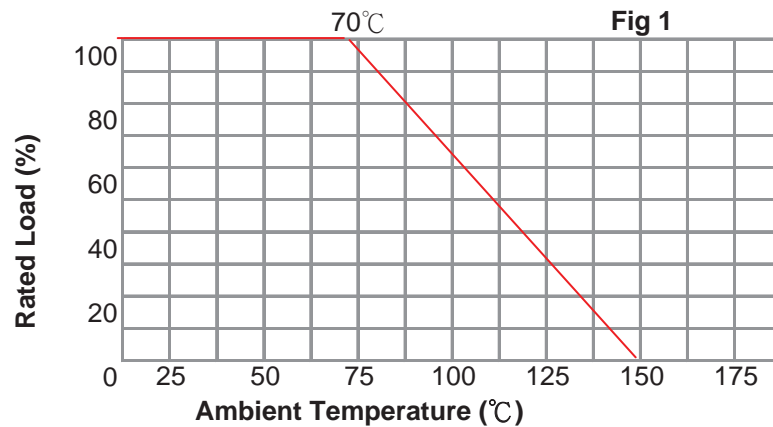
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◆ ENVIRONMENTAL CHARACTERISTICS

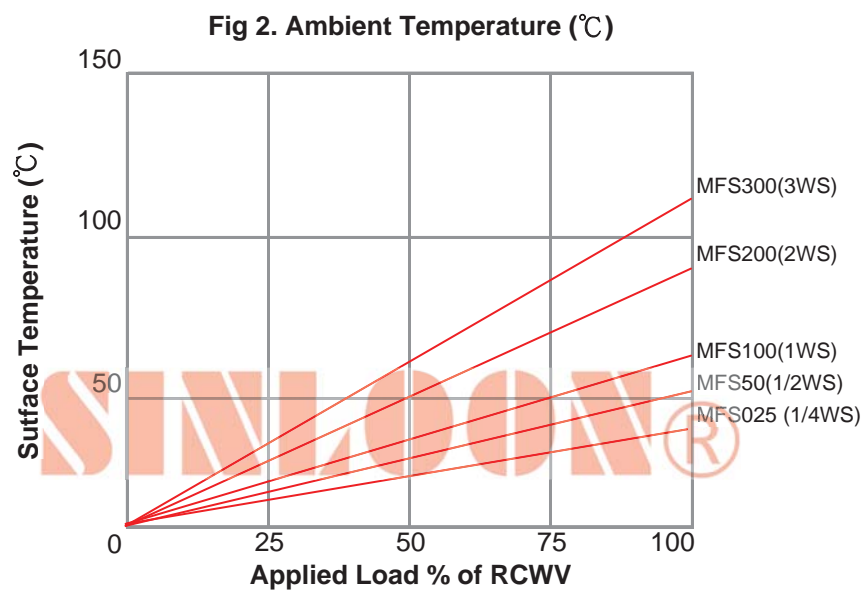
PERFORMANCE TEST	TEST METHOD	APPRAISE
SHORT TIME OVERLOAD	JIS-5202 5.5 2.5 times RCWV for 5 seconds.	±(0.25%+0.05Ω)
TEMPERATURE COEFFICIENT (T.C.R.)	Resistance value at room temperature and room temperature +100°C	By Type
DIELECTRIC WITHSTANDING VOLTAGE	JIS-C5202 5.7 in V-Block for 60 seconds.	By Type
PULSE OVERLOAD	JIS-C5202 5.8 4 times RCWV for 10000 cycles (1sec.on, 25secs.off)	±(0.75%+0.05Ω)
INSULATION RESISTANCE	JIS-C5202 5.6 In V-Block	>10000MΩ
LOAD LIFE	JIS-C-5202 7.10 70°C at RCWV for 1000hrs. (1.5hrs.on, 0.5hrs.off)	±(1.5%+0.05Ω)
LOAD LIFE IN HUMIDITY	JIS-C5202 7.9 40±2°C 90~95%RH at RCWV for 1000hrs.(1.5hrs.on,0.5hrs.off)	±(1.5%+0.05Ω)
SOLDER ABILITY	JIS-C5202 6.5 260±5°C for 2±0.5 seconds.	95% min. coverage
RESISTANCE TO SOLVENT	JIS-C5202 6.9 Trichroethane for 1 min. with ultrasonic.	No deterioration of coatings and makrings.
TERMINAL STRENGTH	Direct load for 10 sec. In the direction off the terminal leads.	Tensile: ≥2.5kg

■ Rated continuous Working Voltage (RCWV) = $\sqrt{POWER.RATING. * RESISTANCE.VALUE}$

◆ POWER GRAPH



◆ HOT-SPOT TEMPERATURE



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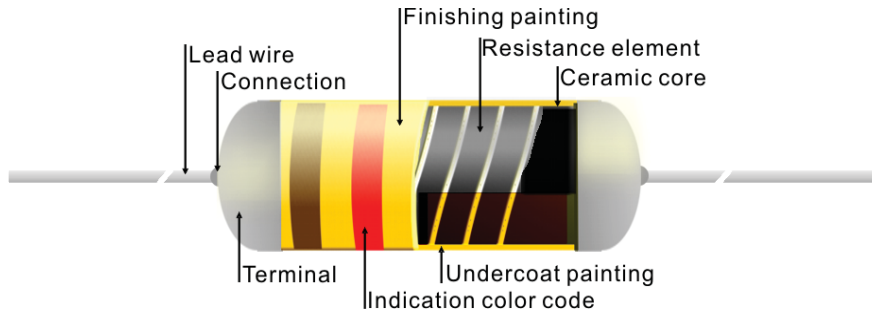
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◆ STRUCTURE DIAGRAM

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



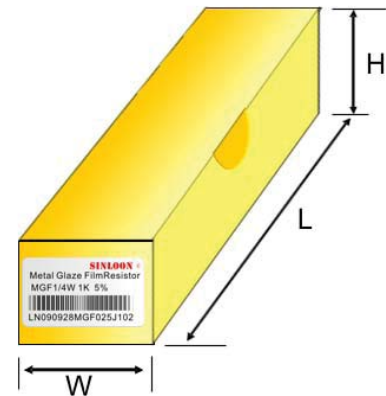
Item	Material
Ceramic Core	High alumina ceramic is used
Resistance element	The resistor element shall consist of metal glaze film.
Terminal	Tinned iron cap.
Connection	The lead wire, which is plated with solder, shall be mounted to the caps by welding process.
Lead Wire	Soldered or tinned annealed copper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

◆ Painting Resistor body color

(1)	Small size	
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◆ PACKAGE:

STYLE		Dimensions (mm)			Quantity
Normal	Power	L	W	H	
MFS025	1/4WS	264	80	75	5,000
MFS050	1/2WS	264	80	105	5,000
MFS100	1WS	264	80	35	1,000
MFS200	2WS	264	80	46	1,000
MFS300	3WS	265	103	82	1,000



※美隆電子產品規格特性參數的改變或更新,將不會另行通知。

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



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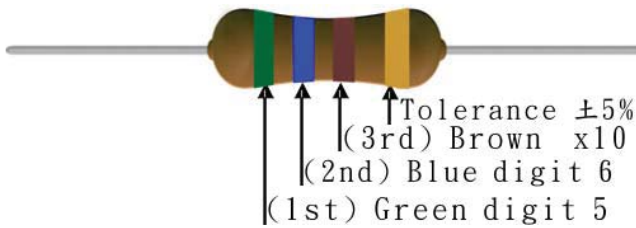
Standard Resistor Color Code (4 band code)

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	x10 ⁰	x10 ¹	x10 ²	x10 ³	x10 ⁴	x10 ⁵	x10 ⁶	x10 ⁷	x10 ⁸	x10 ⁹		
Tolerance		±1% (F)	±2% (G)			±0.5% (D)	±0.25% (C)	±0.1% (B)			±5% (J)	±10% (K)

Examples:

Fig-1:

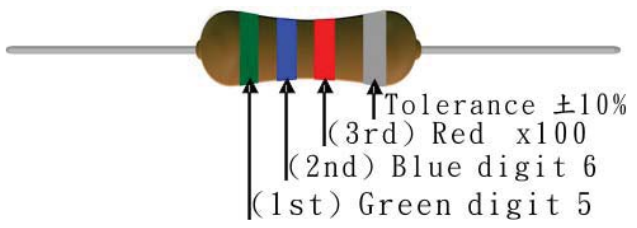
(E24) Resistor 560R 5%



Green, Blue, brown, silver tolerance band:
56 x 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 x 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

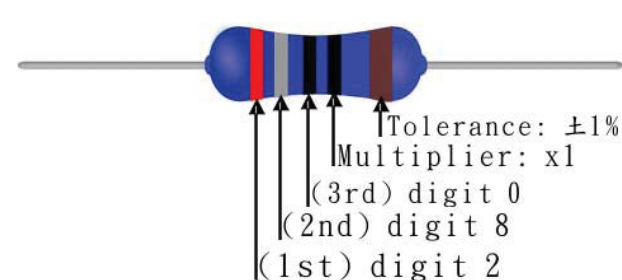
Standard Resistor Color Code (5 band code)

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	x10 ⁰	x10 ¹	x10 ²	x10 ³	x10 ⁴	x10 ⁵	x10 ⁶	x10 ⁷	x10 ⁸	x10 ⁹		
Tolerance		±1% (F)	±2% (G)			±0.5% (D)	±0.25% (C)	±0.1% (B)			±5% (J)	±10% (K)

Examples:

Fig-3:

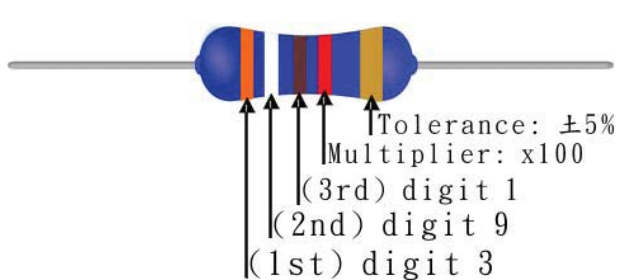
(E96) Resistor 280R ±1%



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

Fig-4:

(E96) Resistor 39.1K ±5%



Orange, White, Brown, Red, Gold tolerance band:
390 x 100 = 39.1K 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

