

金屬釉高壓電阻器

Resistance Range: 1K ~ 100M ohm

MGF Series

Metal Glaze Resistor

Figure



□ SCOPE:

This specification is available for Metal Glaze Resistor manufactured by Mayloon.  
The resistor is manufactured highly quality-controlled process and guaranteed high reliability.

□ STANDARD MEASURING CONDITIONS

Temperature 20±2°C, Humidity 65±5%.  
Being on aoubt about the judgment, measurements can be made within the following  
Temperature 5 ~ 35°C, Humidity 45 ~ 85%.

□ ORDERING

Example: MGF1/4WT52J103P

Type	Power	Package	Form	Tolerance	Resistance	Figure
MGF	1/4W	T = T/Box	52mm	F = ±1%	100 =10Ω	P
MGF	1/2W	B = Bulk	63mm	G = ±2%	101 =100Ω	
MGF	1W	R = Reel	73mm	J = ±5%	102=1KΩ	
MGF	2W			K = ±10%	103=10KΩ	

□ EXTERNAL DIMENSIONS

Type	Dimensions (mm)			
	L	ΦD	Φd	H
MGF1/4W	6.5±0.5	2.3±0.3	0.52±0.05	25±3.0
MGF1/2W	9.0±1.0	3.2±0.5	0.56±0.05	25±3.0
MGF1W	11.0±1.0	4.5±1.0	0.75±0.05	32±3.0
MGF2W	15.0±1.0	5.0±1.0	0.75±0.05	35±1.0



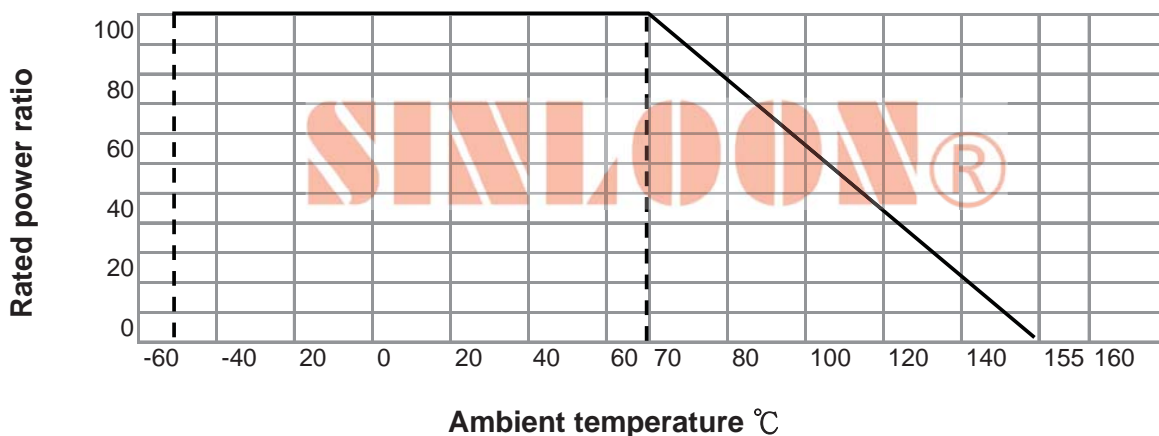
\* The type designation shall be in the following form and as specified.

□ RATED POWER

Type	Power	Maximum Voltage		Dielectric withstanding Voltage	Resistance Range	Operating temperature Range
		Working	Overload			
MGF	1/4W	1600V	2000V	500V	1KΩ ~ 5.1M Ω	-55°C ~ 155°C
MGF	1/2W	2000V	2500V	700V	1KΩ ~ 33M Ω	
MGF	1W	3500V	500V	1000V	100KΩ ~ 56M Ω	
MGF	2W	3500V	500V	1000V	100KΩ ~ 100M Ω	

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

□ POWER DERATING CURVE



金屬釉高壓電阻器

MGF Series

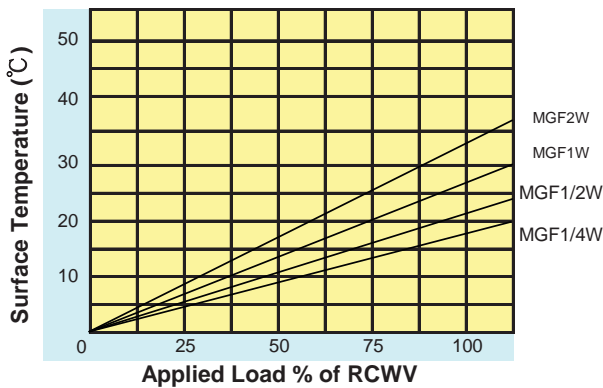
Resistance Range: 1K ~ 100M ohm

Metal Glaze Resistor

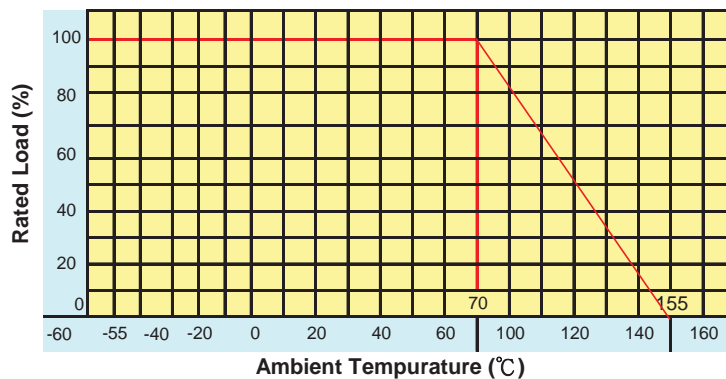
PERFORMANCE SPECIFICATIONS

TEST ITEMS	Test Methods	SPECIFICATIONS
Short time overload	Rated Voltage X 2.5 or Max. overload Vol., whichever is lower, for 5sec.	± ( 1.0% + 0.05Ω )
Moisture resistance	40°C ± 2°C, 90%~95%RH, 1000h 90 min 【ON】 30 min 【OFF】	± ( 5.0% + 0.05Ω )
Load life	1000hours at rated voltage, 70°C 90 min 【ON】 30 min 【OFF】	± ( 3.0% + 0.05Ω )
Insulation resistance	500±50V DC During 1 min V-Block method	±10,000MΩ
Dielectric withstanding voltage	In V-Block for 60 seconds	1/4W 400V 1W 800V 1/2W500V 2W2000V
Resistance to soldering	260°C ± 5°C, 10s ± 1s or 350°C ± 10°C, 3.5s ± 0.5s	± ( 1.0% + 0.05Ω )
Temperature cycling		± ( 1.0% + 0.05Ω )
Terminal strength	Direct load for 10 sec. In the direction off the terminal leads.	Tensile: ≥ 2.5kg
Anti-surge characteristics	R ≥ 100KR: 8KV/10nF	Rmax. ±10%
	R < 100KR: 10KV/10nF	No damage
	2.5sec on/off 10 Cycle	

Surface Temperature (°C) (表面溫度上升曲線)

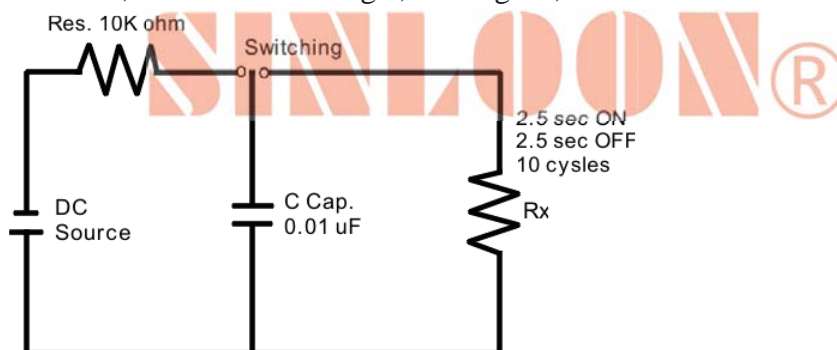


POWER GRAPH



Hi Voltage Surge Test

10 discharges from a 10nf capacitor charged to Vmax :12 discharges/min  
no evidence of flash over , mechanical damage , arching or , insulation breakdown.



**金屬釉高壓電阻器**

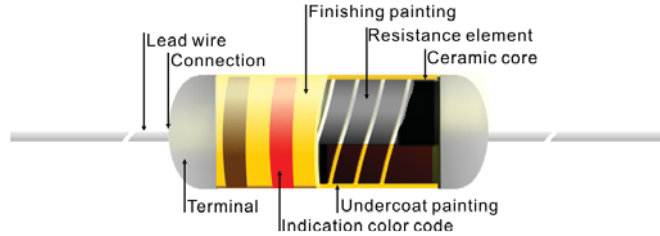
**Resistance Range: 1K ~ 100M ohm**

**MGF Series**

**Metal Glaze Resistor**

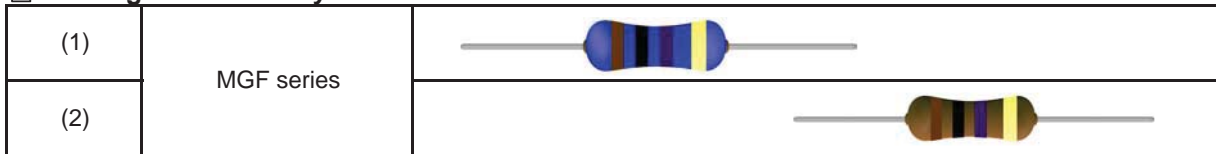
**STRUCTURE DIAGRAM**

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



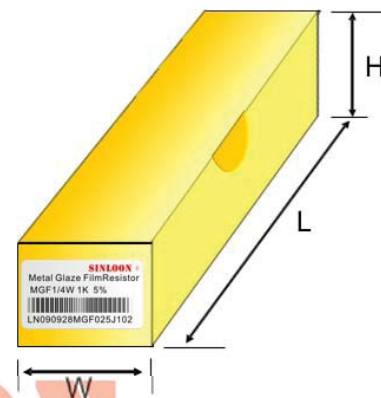
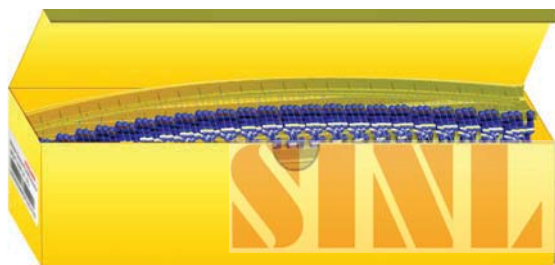
Item	Material
Ceramic Core	High alumina ceramic is used
Resistance element	The resistor element shall consist of metal glaze film.
Terminal	Tinned iron cap.
Connection	The lead wire, Which is plated with solder, shall be mounted to the caps by welding process.
Lead Wire	Soldered or tinned annealed copper 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
MGF	1/4W	T52	262	80	105
MGF	1/2W	T52	262	80	89
MGF	1W	T52	262	107	102
		T63	262	107	102
MGF	2W	T52	262	80	105
		T63	262	107	102
		T73	262	107	102



金屬釉高壓電阻器

MGF Series

Resistance Range: 1K ~ 100M ohm

Metal Glaze Resistor

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%

Tolerance  $\pm 5\%$   
(3rd) Brown  $\times 10$   
(2nd) Blue digit 6  
(1st) Green digit 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%

Tolerance  $\pm 10\%$   
(3rd) Red  $\times 100$   
(2nd) Blue digit 6  
(1st) Green digit 5

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  $\pm 1\%$

Tolerance:  $\pm 1\%$   
Multiplier:  $\times 1$   
(3rd) digit 0  
(2nd) digit 8  
(1st) digit 2

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  $\pm 5\%$

Tolerance:  $\pm 5\%$   
Multiplier:  $\times 100$   
(3rd) digit 1  
(2nd) digit 9  
(1st) digit 3

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

