SINLOON®

高精密金屬膜電阻 HPMF Series

High Precision Metal Film Resistor

Precision tolerance tight to ±0.05%

☐ **Scope**

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

☐ **Features**

- ◆ High thermal conductivity and specific gravity rods.
- ◆ Power Rating : 0.25W~1W
- ◆ Precision tolerance tight to ±0.05.
- ◆ Superior electrical TCR performances narrowed to±5ppm/°C.
- ◆ Epoxy coating, precision metal film, Lead (Pb)-free and

Fig-1

☐ **Applications**

- ◆ Telecom
- ◆ Measuring and Calibration Equipment,
- ◆ Industrial Process Control Systems,
- ◆ Audio, Video

☐ **ORDERING**

Example: HPMF0623V100ASR (1/4W 10R ±0.05% ±5ppm)

Type	Power	Resistance	Tolerance	T.C.R/℃	Package	Figure
HPMF0623	V = 1/4W	100 =10Ω	A = ±0.05%	S=±5ppm	B = Bulk	
HPMF0932	U = 1/2W	101 =100Ω	B = ±0.1%	B=±10ppm	T = T-Box	
HPMF0623S	U = 1/2W	102=1KΩ	C = ±0.25%	N=±15ppm	R = Reel	Fig-1
HPMF0623R	P = 3/5W	103=10KΩ	D = ±0.5%	C=±25ppm		
HPMF0932S	S = 1W	104=100KΩ	F = ±1%	D=±50ppm		

☐ **EXTERNAL DIMENSIONS**

Type	Din Size	Dimensions (mm)			
		L	ΦD	Φd	H
HPMF 1/4W	0623	6.5±0.5	2.3±0.3	0.55±0.05	28±3.0
HPMF 1/2W	0932	9.0±1.0	3.2±0.5	0.65±0.05	26±3.0

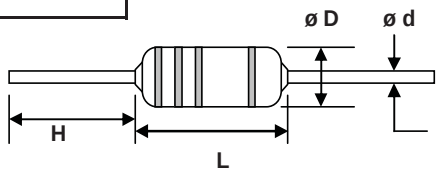

Fig-2

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

☐ **RATED STANDARD POWER**

Type	Power	Max. Operating Vol.		Precision Tolerance					T.C.R
		Working	Overload	±0.05%	±0.1%	±0.25%	±0.5%	±1%	℃
HPMF0623	1/4W	250V	500V	10~1M Ω	10~1M Ω	10~1M Ω	10~1M Ω		±5ppm
									±10ppm
							10~10M Ω		±15ppm
									±25ppm
HPMF0932	1/2W	350V	700	10~1M Ω	10~1M Ω	10~1M Ω	10~1M Ω		±5ppm
									±10ppm
							10~10M Ω		±15ppm
									±25ppm
Operating Temperature Range:		-55 ~ +155℃							

☐ **RATED HIGH POWER**

Type	Power	Max. Operating Vol.		Tolerance					T.C.R
		Working	Overload	±0.05%	±0.1%	±0.25%	±0.5%	±1%	℃
HPMF0623S	1/2W	300V	600V	10~1M Ω	10~1M Ω	10~1M Ω	10~1M Ω		±5ppm
									±10ppm
							10~10M Ω		±15ppm
									±25ppm
HPMF0623R	3/5W	350V	700V	---	10~1M Ω	10~1M Ω	10~5MΩ		±15ppm
							10~10MΩ		±25ppm
HPMF0932S	1W	350V	700	10~1M Ω	10~1M Ω	10~1M Ω	10~1M Ω		±5ppm
									±10ppm
							10~10M Ω		±15ppm
									±25ppm
Operating Temperature Range:		-55 ~ +155℃							

* Rated power is maximum power which can continuously loaded at specified ambient determined 70℃, howe
ambient temperature exceeds 70℃, rated power should be determined from the rating curve of Fig-3.

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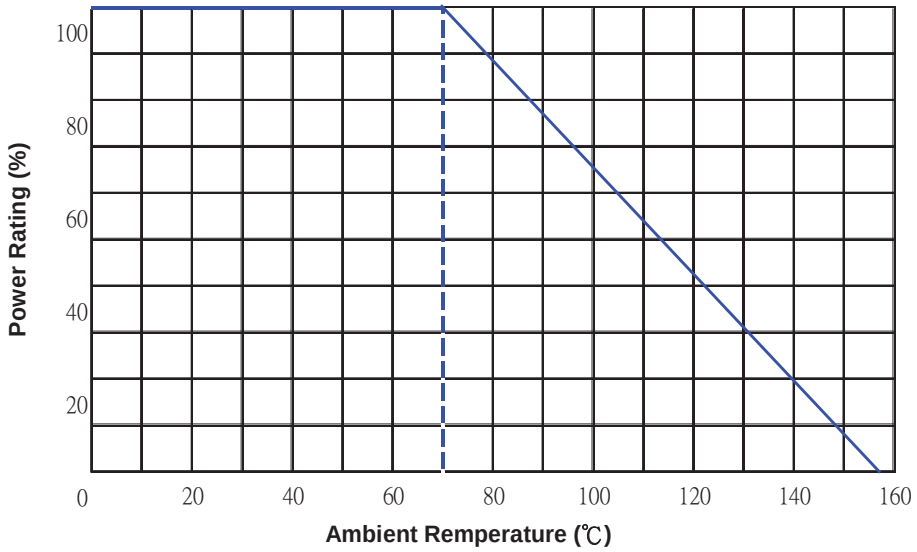
☐ POWER DERATING CURVE Fig-3



☐ ENVIRONMENTAL CHARACTERISTICS

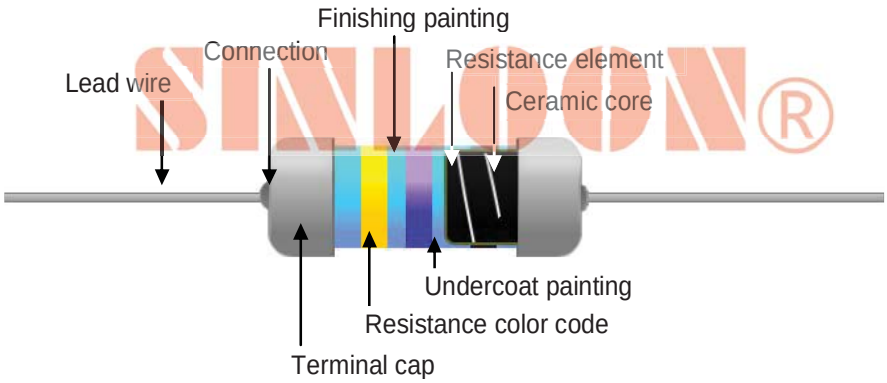
PERFORMANCE TEST	TEST METHOD	APPRAISE
SHORT TIME OVERLOAD	JIS-5202 5.5 2.5 times RCWV for 5 seconds.	±(0.25%+0.05Ω)
TEMPERATURE COEFFCIENT (T.C.R.)	Resistance value at room temperature and room temperature +100	By Type
DIELECTRIC WITHSTANDING VOLTAGE	JIS-C5202 5.7 in V-Block for 60 seconds.	By Type
PULSE 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℃ at RCWV for 1000hrs. (1.5hrs.on, 0.5hrs.off)	±(1.5%+0.05Ω)
LOAD LIFE IN HUMIDITY	JIS-C5202 7.9 40±2℃ 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℃ 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) $\sqrt{POWER \times RATING \times RESISTANCE \times VALUE}$

＊Stardard Test: MIL-STD-202, JIS-C 5201-1

＊Control Room: 25±3℃ Humidity: <80%RH

☐ Structure Diagram Fig-4



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☐ **PACKAGE:**

Type	Power	Form	Tape Box Dimensions (mm)			Quantity Inner Box	Weight	Quantity Cartons	Gross Weight
			L	W	H				
HPMF0623	V = 1/4W	Axial	264	80	105	5000 Pcs	750g	100K pcs	17Kgs
HPMF0932	U = 1/2W	Axial	264	80	46	1000 Pcs	350g	20K pcs	8.5Kgs
HPMF0623S	U = 1/2W	Axial	264	80	105	5000 Pcs	750g	100K pcs	17Kgs
HPMF0623R	P = 3/5W	Axial	264	80	105	5000 Pcs	750g	100K pcs	17Kgs
HPMF0932S	S = 1W	Axial	264	80	46	1000 Pcs	350g	20K pcs	8.5Kgs

Ammo Tape

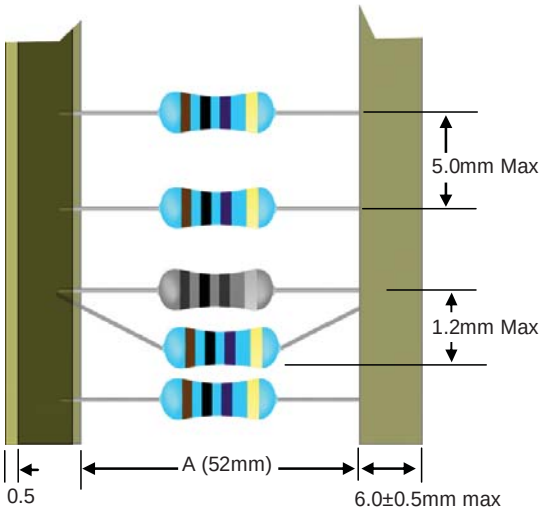

Fig-5

Inner Box

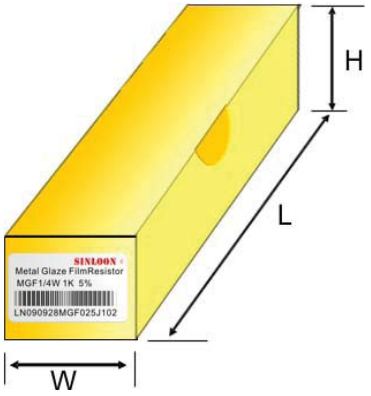

Fig-6

Carton Package

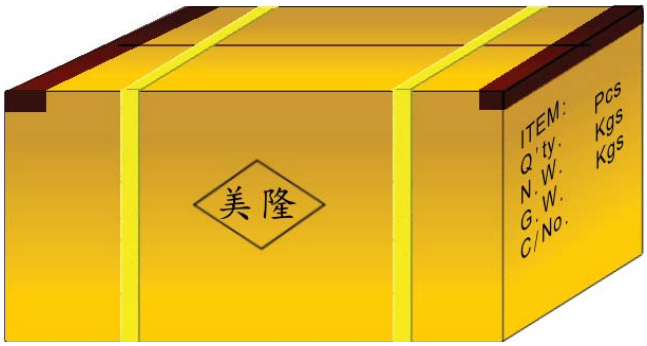

Fig-7

※ 美隆公司產品規格及其特性參數的改變或更新恕不另行通知。

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

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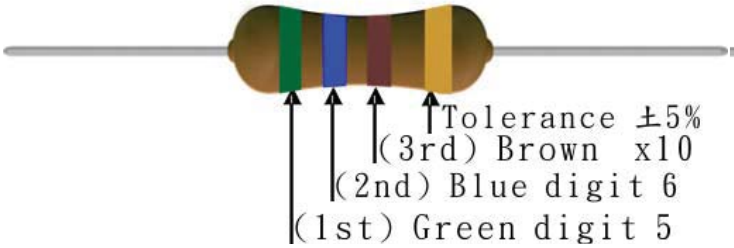
☐ Standard Resistor Colar Code (4 band code)

ecision Meta	Black	Brown	Red	Orange	Yellow	Green	Blue	Violet	Gray	White	Gold	Silver
uality-controlle	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)

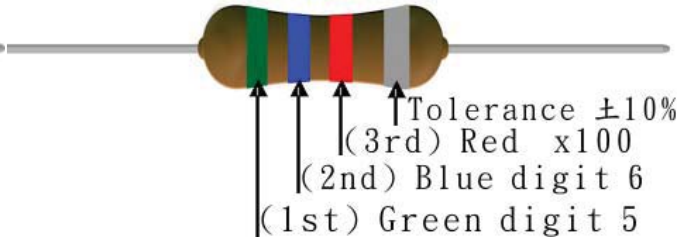
☐ Examples:

Fig-7 (E24) Resistor 560R 5%



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

Fig-8 (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)

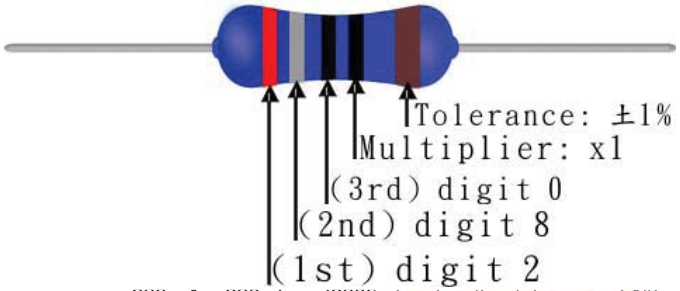
10, 11, 12, 13, 15, 16, 18, 20, 22, 24, 27, 30, 33, 36, 39, 43, 47, 51, 56, 62, 68, 75, 82, 91

☐ Standard Resistor Colar 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)

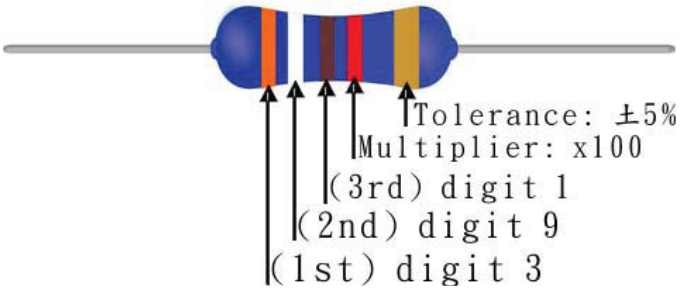
☐ Examples:

Fig-9 (E96) Resistor 280R ±1%



280 x 1 = 280 ohms (2800 ohms), with a tolerance of 1%

Fig-10 (E96) Resistor 39.1K ±5%



Orange ,White, Brown, Red, Gole 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

RoHS Compliant
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