

Metal Film Resistors

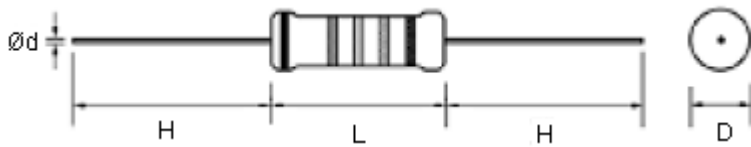
MF12, MF25 and MF50 Series



Features:

- EIA standard colour-coding
- Low noise and voltage coefficient
- Low temperature coefficient range
- Nichrome resistor element provides stable performance in various environments
- Multiple epoxy coating on vacuum-deposited metal film provides superior moisture protection

Dimension



Style	Power Rating at 70°C (W)	D Maximum	L Maximum	d $\begin{matrix} +0.02 \\ -0.05 \end{matrix}$	H ± 3
MF12	0.125	1.85	3.5	0.45	28
MF25	0.25	2.5	6.8	0.54	
MF50	0.5	3.5	10		

Supplied bandoliered on tape (Box = 5,000 pcs for MF12 and MF25 series)
(Box = 1,000 pcs for MF50 series)

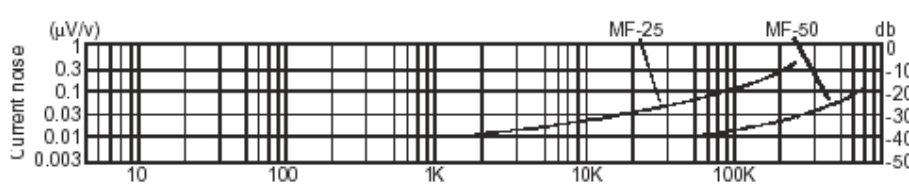
Dimensions : Millimetres

Specification Table

Style	Dielectric Withstanding Voltage (V)	Maximum Working Voltage (V)	Maximum Overload Voltage (V)	Resistance Tolerance	Temperature Coefficient	Resistance Range
MF12	400	200	400	$\pm 1\%$	± 50 ppm / °C	1 Ω to 1 M Ω
MF25	500	250	500			
MF50	700	350	700			

Current Noise Level

Dimensions : Millimetres

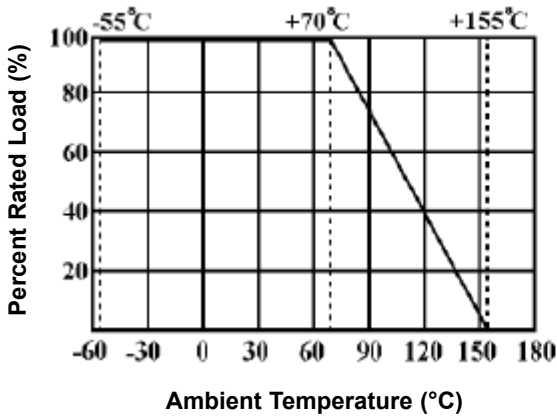


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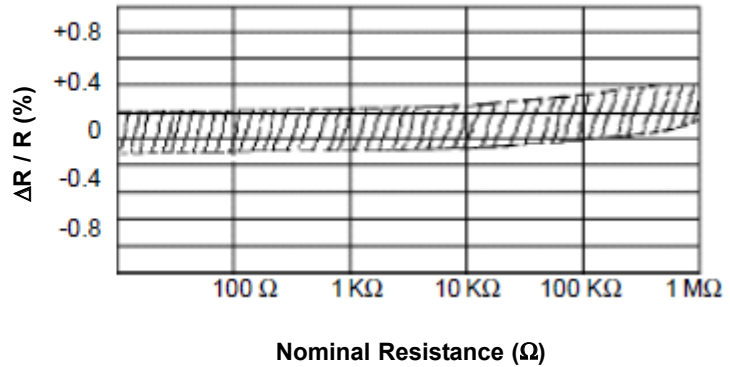


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Derating Curve



Load Life



Performance Specification

Characteristics	Test Methods	Limits	
Temperature Coefficient	Natural resistance change per temperature degree centigrade	Within the temperature coefficient specified below	
	$\frac{R_2 - R_1}{R_1(t_2 - t_1)} \times 10^6 \text{ (ppm / } ^\circ\text{C)}$	Maximum TCR	
	R ₁ : Resistance value at room temperature (t ₁) R ₂ : Resistance value at room temperature plus 100°C (t ₂)	±50 ppm / °C	
Dielectric Withstanding Voltage	Resistors shall be clamped in the trough of a 90° metallic V-block and shall be tested at AC potential respectively specified in the above list for 60 +10/-0 s	No evidence of flashover mechanical damage, arcing or insulation break down	
Temperature Cycling	Resistance change after continuous five cycles for duty cycle specified		
	Step	Temperature	Time
	1	-55°C ±3°C	30 minutes
	2	Room temperature	10-15 minutes
	3	+155°C ±3°C	30 minutes
4	Room temperature	10-15 minutes	
		Resistance change rate is ±(1% +0.05 Ω) No evidence of mechanical damage	
Short-Time Overload	Permanent resistance change after the application of a potential of 2.5 times RCWV for 5 s	Resistance change rate is ±(0.5% +0.05 Ω) No evidence of mechanical damage	
Pulse Overload	Resistance change after 10,000 cycles (1 second "on", 25 seconds "off") at 4 times RCWV	Resistance change rate is ±(1% +0.05 Ω) No evidence of mechanical damage	

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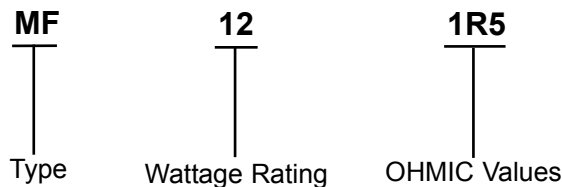
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Performance Specification

Characteristics	Test Methods	Limits	
Load Life in Humidity	Resistance change after 1,000 hours (1.5 hours "on", 0.5 hour "off") at RCWV in a humidity test chamber controlled at 40°C ±2°C and 90 to 95% relative humidity	Resistance value	ΔR / R
		Normal type	±1.5%
Load Life	Permanent resistance change after 1,000 hours operating at RCWV with duty cycle of 1.5 hours "on" 0.5 hours "off" at 70°C ±2°C ambient	Resistance value	ΔR / R
		Normal type	±1.5%
Terminal Strength	<p>Direct Load : Resistance to a 2.5 kgs direct load for 10 seconds in the direction of the longitudinal axis of the terminal leads</p> <p>Twist Test : Terminal leads shall be bent through 90° at a point of about 6 mm from the body of the resistor and shall be rotated through 360° about the original axis of the bent terminal in alternating direction for a total of 3 rotations</p>	No evidence of mechanical damage	
Resistance to Soldering Heat	Permanent resistance change when leads immersed to 3.2 - 4.8 mm from the body in 350°C ±10°C solder for 3 ±0.5 seconds	Resistance change rate is ±(1% +0.05 Ω) No evidence of mechanical damage	
Solderability	<p>The area covered with a new, smooth, clean, shiny and continuous surface free from concentrated pinholes</p> <p>Test temperature of solder : 235°C ±5°C</p> <p>Dwell time in solder : 3+0.5/-0 s</p>	95% coverage minimum	
Resistance to Solvent	Specimens shall be immersed in a bath of trichroethane completely for 3 minutes with ultrasonic	No deterioration of protective coating and markings	

RCWV = Rated Continuous Working Voltage = $\sqrt{\text{Rated Power} \times \text{Resistance Value}}$

Part Number Explanation:



Wattage Rating : 12 = 0.125 W, 25 = 0.25 W and 50 = 0.5 W

OHMIC Values : Where R = Ohms = Ω

K = Kilo ohms = KΩ

M = Mega ohms = MΩ

and replaces the decimal point

eg :1R5 = 1.5 Ω, 4K5 = 4.5 KΩ, 6M8 = 6.8 MΩ

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Stocked Values

Tolerance	Wattage	Range Value
1%	0.125 W	1R - 1M
1%	0.25 W	1R - 1M
1%	0.5 W	1R - 1M

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