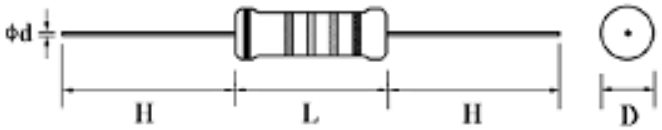
MF12, MF25 & MF50 Series

Metal Film Resistors

Materials and 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 +0.02 -0.05	H±3
MF 12	0.125	1.85	3.5	0.45	28.0
MF 25	0.25	2.5	6.8	0.54	
MF 50	0.5	3.5	10.0		

Dimensions : Millimetres

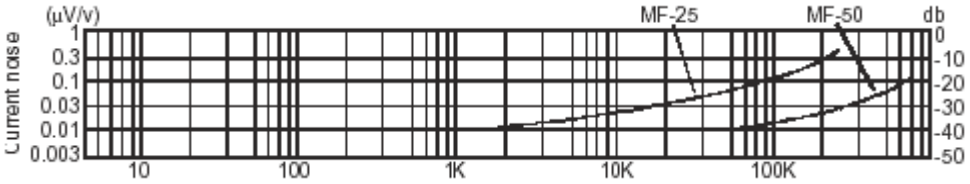
Supplied bandoliered on tape (Box = 5000 pcs. for MF12 and MF25 Series)
(Box = 1000 pcs. for MF50 Series).

General Specification

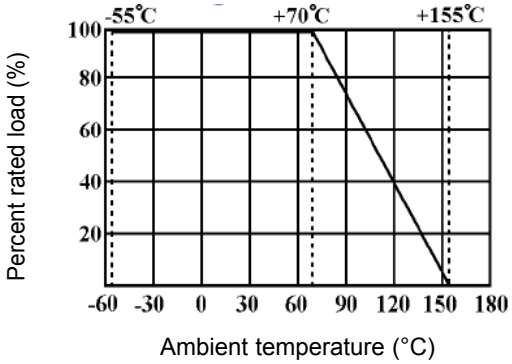
Style	Dielectric withstanding voltage (V)	Maximum working voltage (V)	Maximum overload voltage (V)	Resistance Tolerance	Temperature Coefficient	Resistance Range
MF 12	400	200	400	±1%	±50ppm/°C	1Ω to 1MΩ
MF 25	500	250	500			
MF 50	700	350	700			

Dimensions : Millimetres

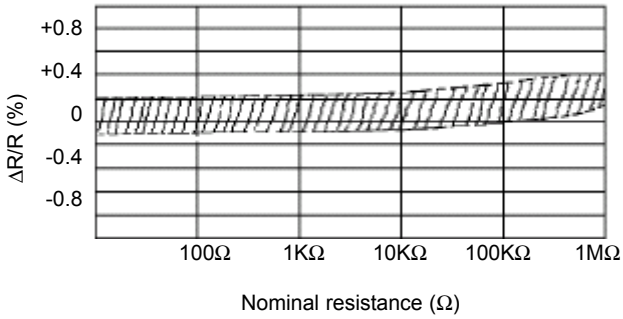
Current Noise Level



Derating Curve



Load Life



Performance Specification

Characteristics	Test Methods	Limits
Temperature coefficient	Natural resistance change per temperature degree centigrade. $\frac{R_2 - R_1}{R_{1(t2-t1)}} \times 10^6$ (ppm/°C) R_1: Resistance value at room temperature (t_1) R_2: Resistance value at room temperature plus 100°C (t_2).	Within the temperature coefficient specified below **Maximum TCR** ±50ppm/°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 seconds.	No evidence of flashover mechanical damage, arcing or insulation break down.
Temperature cycling	Resistance change after continuous five cycles for duty cycle specified	Resistance change rate is ±(1% +0.05Ω). No evidence of mechanical damage.

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

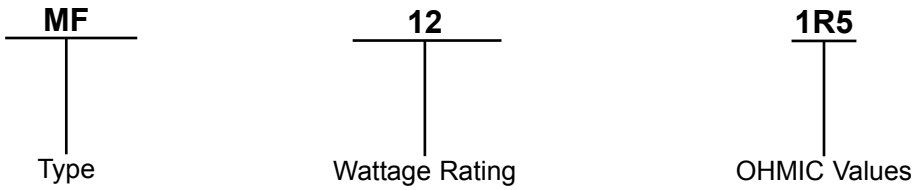
Short-time overload	Permanent resistance change after the application of a potential of 2.5 times RCWV for 5 seconds.	Resistance change rate is ±(0.5% +0.05Ω). No evidence of mechanical damage.
Pulse overload	Resistance change after 10,000 cycles (1 second "on", 25 seconds "off") at 4 times RCWV.	Resistance change rate is ±(1% +0.05Ω). No evidence of mechanical damage.

Performance Specification

Characteristics	Test Methods	Limits	
Load life in humidity	Resistance change after 1000 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 1000 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	**Direct Load:** Resistance to a 2.5kgs direct load for 10 seconds in the direction of the longitudinal axis of the terminal leads. **Twist test:** Terminal leads shall be bent through 90° at a point of about 6mm 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.	No evidence of mechanical damage.	
Resistance to soldering heat	Permanent resistance change when leads immersed to 3.2 - 4.8mm from the body in 350°C ±10°C solder for 3 ±0.5 seconds.	Resistance change rate is ±(1% +0.05Ω). No evidence of mechanical damage.	
Solderability	The area covered with a new, smooth, clean, shiny and continuous surface free from concentrated pinholes. Test temperature of solder : 235°C ±5°C. Dwell time in solder : 3+0.5/-0 seconds.	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 = $\sqrt{\text{Rated Power X Resistance Value}}$

Part Number Explanation:



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

OHMIC Values : Where R = Ohms = Ω
K = Kilo ohms = KΩ.
M = Mega ohms = MΩ.
and replaces the decimal point.
eg : 1R5 = 1.5Ω.
4K5 = 4.5KΩ.
6M8 = 6.8MΩ.

Stocked Values

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

Notes:

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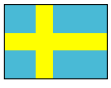

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