

# Precision Metal Film Fixed Resistors

## Performance Specification

Temperature Coefficient	Within the maximum temperature coefficient specified.
Short Time Overload	$\pm(0.5\% + 0.05\Omega)$ Max, with no evidence of mechanical damage.
Insulation Resistance	Min. 10,000 Mega Ohm
Dielectric Withstanding Voltage	No evidence of flashover, mechanical damage, arcing or insulation breakdown.
Pulse Overload	$\pm(1.0\% + 0.05\Omega)$ Max, with no evidence of mechanical damage.
Terminal Strength	No evidence of mechanical damage.
Resistance to Soldering Heat	$\pm(1.0\% + 0.05\Omega)$ Max, with no evidence of mechanical damage.
Solderability	Min. 95% coverage.
Resistance to Solvent	No deterioration of protective coating and markings.
Temperature Cycling	$\pm(1.0\% + 0.05\Omega)$ Max, with no evidence of mechanical damage.
Humidity (Steady state)	$\pm(2.0\% + 0.05\Omega)$ Max, with no evidence of mechanical damage.
Load Life in Humidity	Normal type: $\pm(1.5\% + 0.05\Omega)$ Max Non-Flame type: $\pm(5.0\% + 0.05\Omega)$ Max
Load Life	Normal type: $\pm(1.5\% + 0.05\Omega)$ Max Non-Flame type: $\pm(5.0\% + 0.05\Omega)$ Max

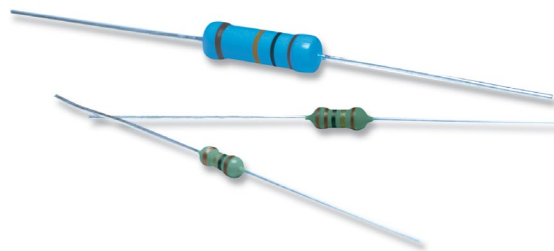
## Ordering Procedure: Ex.: MFR 1/2W, +/-5%, 200PPM, 10Ω, T/B-1000

M	F	0	W	2	J	J	0	1	0	0	A	1	0			
<p>Type: MF = Metal Film MT = Metal Film Tin plated cooper steel lead wire</p>		<p>Wattage: Normal size: W8 = 1/8W W4 = 1/4W W2 = 1/2W 1W = 1W 2W = 2W 3W = 3W</p> <p>Small size: S4 = 1/4W-S S3 = 1/3W-S 06 = 0.6W-S M7 = 0.75W-S 1S = 1W-S 2S = 2W-S 3S = 3W-S</p> <p>Extra small size: U2 = 1/2W-SS 04 = 0.4W-SS</p>		<p>Tolerance: B = <math>\pm 0.1\%</math> F = <math>\pm 1\%</math> C = <math>\pm 0.25\%</math> G = <math>\pm 2\%</math> D = <math>\pm 0.5\%</math> J = <math>\pm 5\%</math></p>		<p>PPM requirement: B = 15ppm C = 25ppm F = 50ppm G = 100ppm J = 200ppm</p>		<p>Resistance Value:</p> <ul style="list-style-type: none"> <li>E-24 series: 1<sup>st</sup> digit is "0" 2<sup>nd</sup> &amp; 3<sup>rd</sup> digits are significant figures of the resistance 4<sup>th</sup> indicates the number of zeros "J" ~ 0.1, "K" ~ 0.01 Ex. 4.7Ω ~ 47J, 4.7KΩ ~ 472</li> <li>E-96 series: 1<sup>st</sup> to 3<sup>rd</sup> digits are significant figures of the resistance 4<sup>th</sup> digit indicates the number of zeros. Ex.: 1.33KΩ = 1331</li> </ul>			<p>Packing Type: A = Tape/Box T = Tape/Reel B = Bulk/Box P = Tape/Box of PT-26mm</p>		<p>Packing Qty: 1 = 1,000 pcs. 2 = 2,000 pcs. 4 = 4,000 pcs. 5 = 5,000 pcs. A = 500 pcs. B = 2,500 pcs. 0 = Bulk/Box</p>		<p>Additional Information: P = Panasert type 1 = Avisert type 2 = Avisert type 2 3 = Avisert type 3 0 = PT-52mm, PT-26mm, Standard lead wire for Bulk/Box 8 = PT-58mm 9 = PT-64mm 7 = Lead wire (H) 38mm</p>	

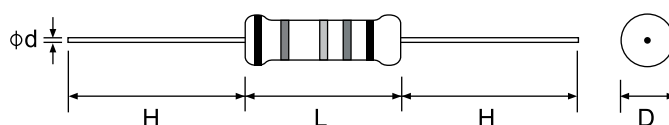
## Precision Metal Film Fixed Resistors

### Features

- EIA standard color coding
- Non-Flame type available
- Low noise & voltage coefficient
- Low temperature coefficient range
- Wide precision range in small package
- Too low or too high ohmic value can be supplied on a case to case basis
- Nichrome resistor element provides stable performance in various environment
- Multiple epoxy coating on vacuum deposited metal film provides superior moisture protection



Standard : 2% ,5% ,10% -- E - 24 series  
1% -- E - 96 series



Part No.	Style	Power Rating at 70°C	Dimension (mm)					Std Packing Qty
			D Max	L Max	H±3	d±0.05	PT	
<b>Normal Size</b>								
MF0W8	MF 12	1/8W (0.125W)	1.35	3.5	28	0.45	52	5,000
MF0W4	MF 25	1/4W(0.25W)	2.5	6.8	28	0.54 <sup>(1)</sup>	52	5,000
MF0W2	MF 50	1/2W (0.50W)	3.5	10.0	28	0.54	52	1,000
MF01W	MF 100	1W	5.0	12.0	25	0.70	52	1,000
MF02W	MF 200	2W	5.5	16.0	28	0.70	64	1,000
MF03W	MF 300	3W	5.5	17.5	28	0.75	64	500
<b>Small Size</b>								
MF0S4	MF 25-S	1/4W(0.25W)	1.85	3.5	28	0.45	52	5,000
MFF04	MF 40-SS	0.4W	1.9	3.7	28	0.45	52	5,000
MFFU2	MF 50-SS	1/2W (0.50W)	2.5	6.8	28	0.54 <sup>(1)</sup>	52	5,000
MF0D2	MF 50-S	1/2W (0.50W)	3.0	9.0	28	0.54	52	4,000
MF006	MF 60-S	0.6W	2.5	6.8	28	0.54 <sup>(1)</sup>	52	5,000
MF0M7	MF 75-S	0.75W	3.5	10.0	28	0.54	52	1,000
MF01S	MF 100-S	1W	3.5	10.0	28	0.54	52	1,000
MF02S	MF 200-S	2W	5.0	12.0	25	0.70	52	1,000
MF03S	MF 300-S	3W	5.5	16.0	28	0.70	64	1,000

**Note:**

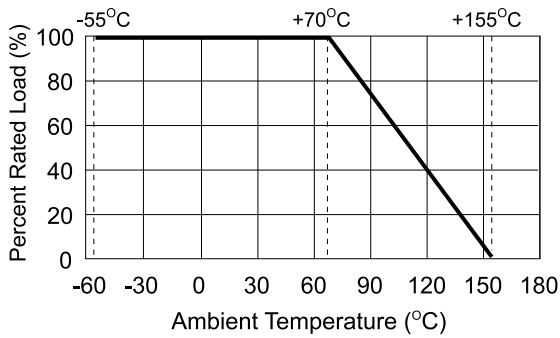
- Extra small size types (-SS) are Non flame coating (Dark Green color).
- <sup>(1)</sup> Lead diameter of MF0W4, MF006 & MFFU2 can be provided in 0.50mm, 0.54mm & 0.60mm

Precision Metal Film Fixed Resistors

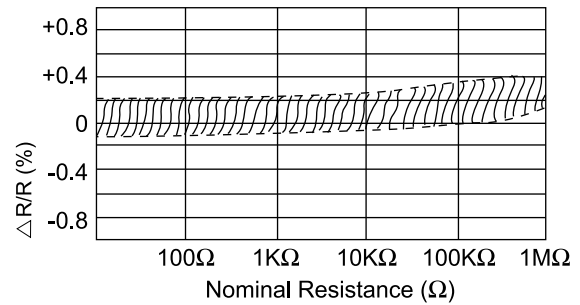
Part No.	Style	Max Working Voltage	Max Overload Voltage	Dielectric Withstanding Voltage	Tolerance %	Resistance Range	T.C.R.	Special Order		
								Tolerance %	Resistance Range	T.C.R.
MF0W8 MF0S4	MF 12 MF 25-S	200V	400V	400V	±1%	10Ω ~ 1MΩ	±50PPM/°C	±0.25%	51.1Ω ~ 200KΩ	±15PPM/°C
MFF04	MF 40-SS			200V	±2%	10Ω ~ 1MΩ	±100PPM/°C	±0.5%	51.1Ω ~ 511KΩ	±25PPM/°C
				200V	±5%	1Ω ~ 1MΩ	±200PPM/°C	±50PPM/°C		
MF0W4 MF006	MF 25 MF 60-S	250V	500V	500V	±1%	10Ω ~ 1MΩ	±50PPM/°C	±0.1%	100Ω ~ 100KΩ	±15PPM/°C
MFFU2	MF 50-SS	250V	500V	250V	±2%	10Ω ~ 1MΩ	±100PPM/°C	±0.25%	51.1Ω ~ 300KΩ	±25PPM/°C
					±5%	1Ω ~ 1MΩ	±200PPM/°C	±0.5%	10Ω ~ 1MΩ	±50PPM/°C
MF0W2 MF0S2 MF0M7 MF01S	MF 50 MF 50-S MF 75-S MF 100-S	350V	700V	700V	±1%	10Ω ~ 1MΩ	±50PPM/°C	±0.1%	100Ω ~ 330KΩ	±15PPM/°C
MF02S MF03S MF01W MF02W MF03W	MF 200-S MF 300-S MF 100 MF 200 MF 300				±2%	10Ω ~ 1MΩ	±100PPM/°C	±0.25%	51.1Ω ~ 511KΩ	±25PPM/°C
					±5%	1Ω ~ 1MΩ	±200PPM/°C	±0.5%	10Ω ~ 1MΩ	±50PPM/°C
MF02S MF03S MF01W MF02W MF03W	MF 200-S MF 300-S MF 100 MF 200 MF 300	500V	1,000V	1,000V	±1%	51.1Ω ~ 1MΩ	±50PPM/°C	±0.1%	100Ω ~ 330KΩ	±15PPM/°C
					±2%	51.1Ω ~ 1MΩ	±100PPM/°C	±0.25%	51.1Ω ~ 511KΩ	±25PPM/°C
					±5%	10Ω ~ 1MΩ	±200PPM/°C	±0.5%	51.1Ω ~ 1MΩ	±50PPM/°C

Note: MFFU2 (MF50-SS) Dielectric Withstanding Voltage Non flame 250V  
Epoxy 500V

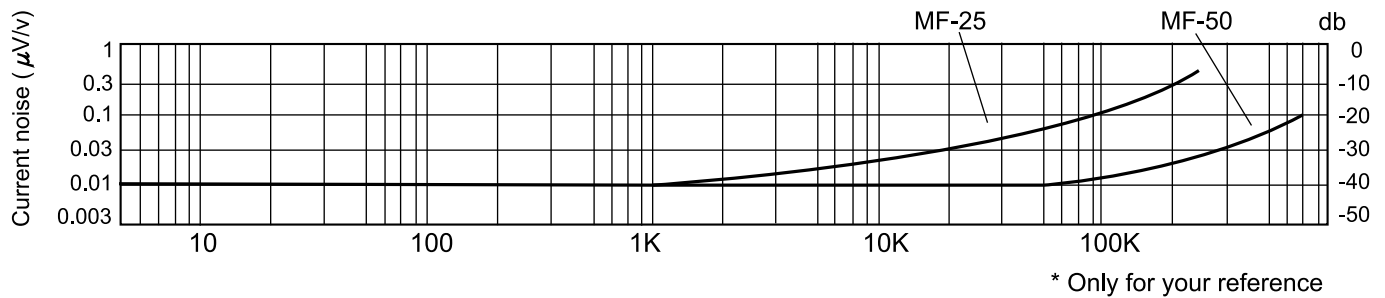
Derating Curve



Load Life



Current Noise Level



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