

Metal Film Resistors - MF/MF-S series



FEATURES

- Power Rating: 1/8W to 2W at 70°C
- Superior electrical performance
- Standard T.C.R : $\pm 50\text{PPM}$ (15/25 ppm is available), FMF 5W is 100ppm
- Standard Tolerance: $\pm 1\%$ (available 0.1% - 5%)
- Standard Value: 10R-1Meg in E24/E96 series
- Body Color: blue
- Flameproof coating available (As FMF type)
- Mini size available (As MF-S type)
- Operating Temperature : $-55^{\circ}\text{C} \sim +155^{\circ}\text{C}$

MATERIAL

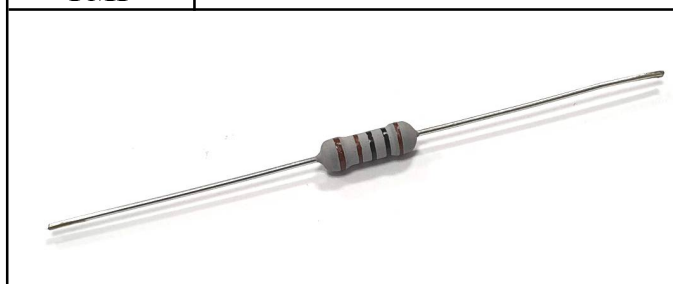
- Element: Vacuum-deposited Ni-Cr Alloy
- Core: High purity ceramic Al_2O_3
- Termination: Standard solder-plated cooper lead
- Coating: Epoxy (FMF is silicone)



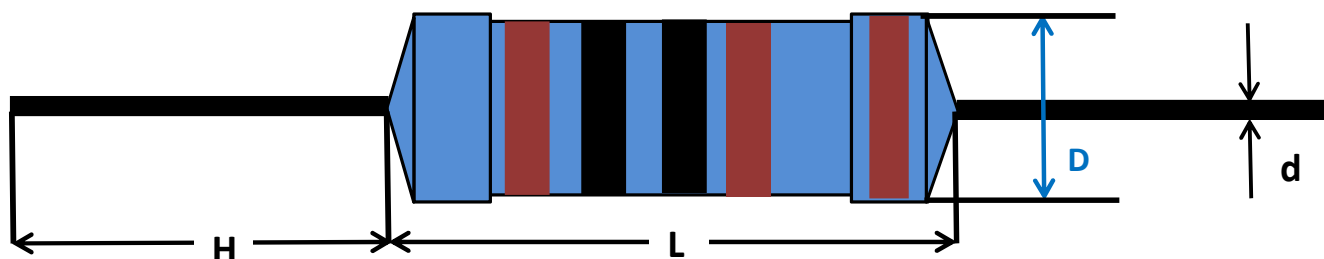
MF



FMF



GENERAL SPECIFICATION



MF-series								
TYPE	DIMENSION (mm)				POWER	MAXIMUM WORKING VOLTAGE	MAXIMUM OVERLOAD VOLTAGE	RESISTANCE RANGE $\pm 1\%$
	L	D	H	d				
MF-1/8W	3.2 ± 0.2	1.6 ± 0.2	27 ± 3.0	0.45 ± 0.05	1/8W	200V ★	400V ★★	$1\Omega \sim 10\text{M}\Omega$
MF-1/4W	6.0 ± 0.5	2.3 ± 0.3	27 ± 3.0	0.55 ± 0.05	1/4W	250V	500V	$1\Omega \sim 10\text{M}\Omega$
MF-1/2W	9.0 ± 0.5	3.0 ± 0.5	27 ± 3.0	0.59 ± 0.05	1/2W	350V	700V	$1\Omega \sim 10\text{M}\Omega$
MF-1W	11 ± 2.0	4.0 ± 1.0	33 ± 3.0	0.8 ± 0.05	1W	500V	1000V	$1\Omega \sim 10\text{M}\Omega$
MF-2W	15 ± 2.0	5.0 ± 1.0	33 ± 3.0	0.8 ± 0.05	2W	500V	1000V	$1\Omega \sim 10\text{M}\Omega$
FMF-3W	17 ± 2.0	6.0 ± 1.0	33 ± 3.0	0.8 ± 0.05	3W	500V	1000V	$1\Omega \sim 10\text{M}\Omega$
FMF-5W	24 ± 2.0	8.0 ± 1.0	38 ± 3.0	0.8 ± 0.05	5W	500V	1000V	$1\Omega \sim 10\text{M}\Omega$

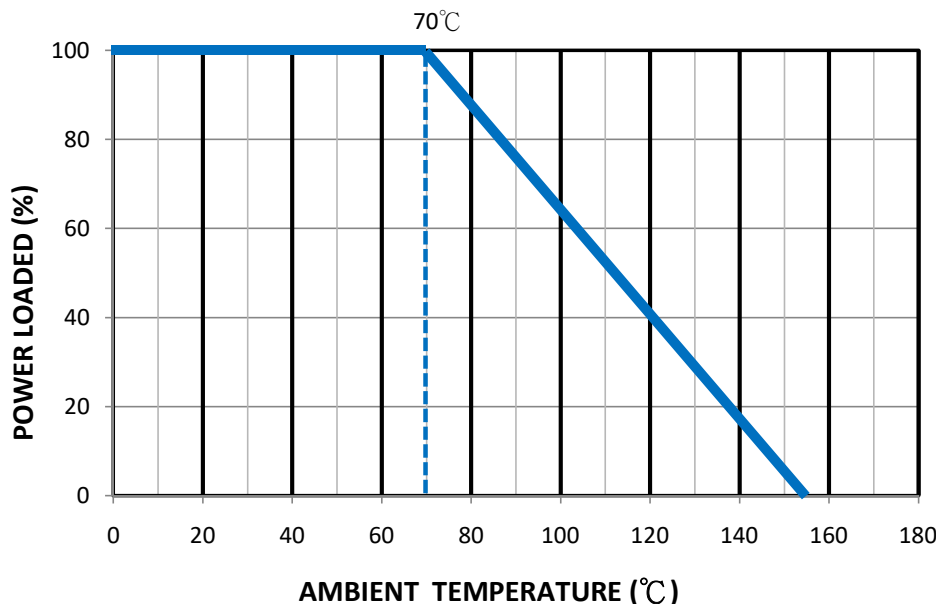
MF-S-series								
TYPE	DIMENSION (mm)				POWER	MAXIMUM WORKING VOLTAGE	MAXIMUM OVERLOAD VOLTAGE	RESISTANCE RANGE $\pm 5\%$
	L	D	H	d				
MF-1/4WS	3.2 ± 0.2	1.6 ± 0.2	27 ± 3.0	0.45 ± 0.05	1/4W	200V ★	400V ★★	$1\Omega \sim 10\text{M}\Omega$
MF-1/2WS	6.0 ± 0.5	2.3 ± 0.3	27 ± 3.0	0.55 ± 0.05	1/2W	250V	500V	$1\Omega \sim 10\text{M}\Omega$
MF-1WS	9.0 ± 0.5	3.0 ± 0.5	27 ± 3.0	0.59 ± 0.05	1W	350V	700V	$1\Omega \sim 10\text{M}\Omega$
MF-2WS	11 ± 2.0	4.0 ± 1.0	33 ± 3.0	0.8 ± 0.05	2W	500V	1000V	$1\Omega \sim 10\text{M}\Omega$
MF-3WS	15 ± 2.0	5.0 ± 1.0	33 ± 3.0	0.8 ± 0.05	3W	500V	1000V	$1\Omega \sim 10\text{M}\Omega$

* Maximum Working Voltage determined by $E = \sqrt{P \times I}$ where E should not exceed value listed in column above.

** Maximum Overload Voltage equals to $2.5 \times E$, but should not exceed value listed in column above

*** Consult factory for resistance is not included in the column

DERATING CURVE



CHARACTERISTIC

TEST	TEST METHOD	APPRAISE
Temperature Coefficient	IEC 60115-1 4.8 -55°C~155°C	By type
Load Life (1000 hours)	IEC 60115-1 4.25 70±2°C at RCWV for 1000 hours (1.5 Hr. on , 0.5 Hr. off)	<±0.5%+0.05 Ω
Shorttime Overload	IEC 60115-1 4.13 2.5 times rated power for 5 sec.	<±0.25%+0.05 Ω
Temperature Cycling	IEC 60115-1 4.19 -55°C → room temp. → +155°C → room temp. (5 cycles)	<±0.5%+0.05 Ω
Moisture Resistance	IEC 60115-1 4.24 40±2°C , 90-95% RH for 56 days , with 0.1 times RCWV	<±0.5%+0.05 Ω
Solderability	IEC 60115-1 4.17 235±5°C for 3±0.5 sec.	95% min. coverage
Effect of Soldering	IEC 60115-1 4.18 260±3°C for 10±1 sec. immersed to point 3±0.5mm from the body	<±0.2%+0.05 Ω

HOW TO ORDER :

SERIES	WATTAGE	RESISTANCE	TOLERANCE	PACKAGE	TCR
MF	1/8W	0R1=0.1Ω	1%	T=TAPING BOX	50ppm
FMF	1/4WS	10R=10Ω	0.5%	R=TAPING REEL	25ppm
	:	1K=1KΩ	0.25%	B=BULK	15ppm
	3WS		0.1%		:
	5W				

PACKAGE STANDARD PACKAGE QUANTITY :

TYPE	T=TAPING BOX	R=TAPING REEL	B=BULK
1/8W-1/4WS	5000	5000	1000 pcs/bag , 10kpcs/box
1/4W-1/2WS	5000	5000	1000 pcs/bag , 10kpcs/box
1/2W-1WS	2000	2500	500 pcs/bag , 5kpcs/box
1W-2WS	1000	2000	500 pcs/bag , 2kpcs/box
2W-3WS	1000	1000	500 pcs/bag , 1kpcs/box
3W-5WS	500	1000	500 pcs/bag , 1kpcs/box
5W	250	500	