

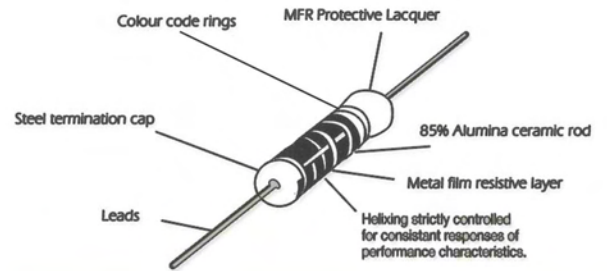
PRECISION METAL FILM RESISTORS

Series: MF P / MFS P

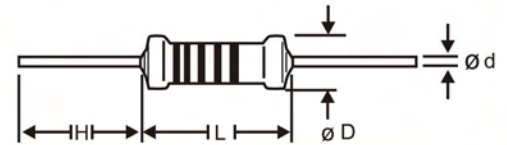
Features:

- ▶ Meet performance requirements of JSS Std. & MIL Std.
- ▶ Close Tolerance available 0.01% ~ 0.5 %.
- ▶ Flameproof Coating available on request.
- ▶ Miniature Size available for Space savings.
- ▶ TCR available 5, 10, 15, 25, 50 ppm/° C.
- ▶ Available ranges from 10 Ohm ~ 1M Ohms.
- ▶ Lower Tolerances available on request.

Construction:



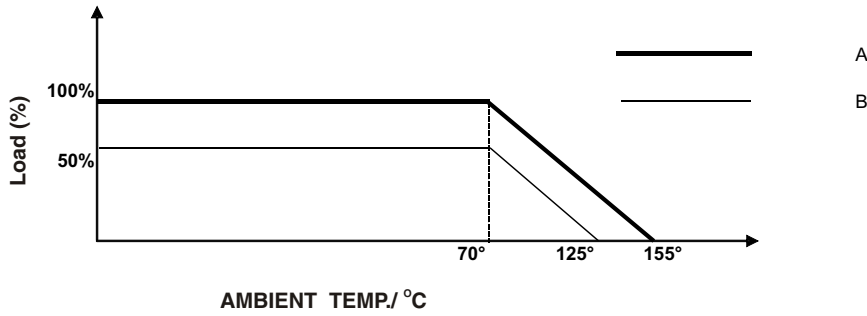
Dimensions



Physical Data :

TYPE	POWER RATING	TOL (±)	DIMENSION (mm)				Max. Working Voltage	Max. Overload Voltage
			L	D	H (min)	d		
MF 125P	0.125W	0.1%	3.3±0.5	1.7±0.2	28	0.45 ± 0.05	200V	400V
MFS 40P	0.125W	0.1%	3.3±0.5	1.7±0.2	28	0.45 ± 0.05	200V	400V
	0.4W							
MF 25P	0.25W	0.02%, 0.1%, 0.25%, 0.5%	6.3±0.5	2.3±0.2	25	0.60 ± 0.05	250V	500V
MFS 60P	0.25W	0.02%, 0.1%, 0.25%, 0.5%	6.3±0.5	2.3±0.2	25	0.60 ± 0.05	250V	500V
	0.6W	0.1%, 0.25%, 0.5%						
MF 50P	0.5W	0.025%, 0.1%, 0.25%, 0.5%	9.5±1	3.5 ± 0.5	25	0.60 ± 0.05	350V	700V
MFS 100P	0.5W	0.1%, 0.25%, 0.5%	9.5±1	3.5 ± 0.5	25	0.60 ± 0.05	350V	700V
	1W							
MF 100P	2W	0.1%, 0.25%, 0.5%	12±1	5.5 ± 0.5	25	0.80± 0.05	500V	1000V
MFS 200P	1W	0.1%, 0.25%, 0.5%	12±1	4.5 ± 0.5	25	0.80± 0.05	500V	1000V
	2W							
MF 200P	2W	0.1%, 0.25%, 0.5%	16±1	5.5 ± 0.5	32	0.80± 0.05	500V	1000V
MFS 300P	2W	0.1%, 0.25%, 0.5%	16±1	5.5 ± 0.5	32	0.80± 0.05	500V	1000V
	3W							

Derating Curve



Performance Data :

A	B
MF 25P, MFS40 (0.4W)	MFS40P (0.125W)
MF 25P, MFS60P (0.6W)	MFS60P (0.25W)
MF 50P, MFS100P (1W)	MFS100 P(0.50W)
MF 100P, MF200P (2W)	MFS200P(1W)
MF 200P, MFS300P	

TEST	PROCEDURE	SPEC.	ACTUAL PERFORMANCE			
			MAX.	TYPICAL	MAX.	TYPICAL
Dielectric Withstanding Voltage	V-Block Method, 3X Rated Voltage Duration : 1 Min.	$\Delta R = (0.2\% + 0.1 \text{ Ohm})$	0.06%	0.02%	0.05%	0.01%
Insulation Resistance	V-Block Method, DC 500V Duration : 1 Min.	10, 000 M Ohm				
Temp. Cycling	5 cycles of - 65°C, 25°C, +155°C, 25°C	$\Delta R = (0.2\% + 0.02 \text{ Ohm})$	0.15%	0.05%	0.05%	0.03%
Short Time Overload	2.5X Rated Voltage Duration : 5 sec.	$\Delta R = (0.2\% + 0.01 \text{ Ohm})$	0.1%	0.02%	0.05%	0.02%
Damp Heat Steady State	40°C95% relative humidity, Duration : 56 Day.	$\Delta R = (0.5\% + 0.01 \text{ Ohm})$	0.3%	0.1%	0.05%	0.03%
Load Life	Rated Voltage at 70°C ambient Duration : 2000 Hrs.	$\Delta R = (0.5\% + 0.01 \text{ Ohm})$	0.3%	0.1%	0.1%	0.05%
Robustness of Terminations	Tensile: 10N Duration: 10 Sec. Bending : 180°, > 3 Bends Torsion : 3 Rotation of 360° Each	$\Delta R = (0.2\% + 0.01 \text{ Ohm})$	0.06%	0.02%	0.03%	0.01%
Resistance to Soldering Heat	Temp. 260°C ± 5°C Duration : 10 Sec.	$\Delta R = (0.1\% + 0.01 \text{ Ohm})$	0.06%	0.03%	0.03%	0.01%
Shock (Medium Impact)	1 Km/S ²	$\Delta R = (0.2\% + 0.01 \text{ Ohm})$	0.06%	0.02%	0.05%	0.01%
Vibration (High Frequency)	10 to 2000 Hz: m/S ²	$\Delta R = (0.2\% + 0.01 \text{ Ohm})$	0.06%	0.02%	0.05%	0.01%
Low Temp. Exposure	At - 65°C Duration : 2 Hrs.	$\Delta R = (0.2\% + 0.01 \text{ Ohm})$	0.15%	0.05%	0.05%	0.03%
High Temp. Exposure	At +155°C Duration : 16 Hrs. No Load Condition	$\Delta R = (0.5\% + 0.01 \text{ Ohm})$	0.3%	0.1%	0.05%	0.03%
Solderability	Dip Method, Solder Bath Temp. 230°C ± 5 °C. Duration 5 Sec.	95% Coverage	95% Coverage	95% Coverage	95% Coverage	95% Coverage
Resistance to Solvent	Solvent : Trichloroethylene Duration : 3 Min.	Marking should be legible	No effect on Marking	No effect on Marking	No effect on Marking	No effect on Marking