Metal Film Resistors

MFR Series

Normal & Miniature Style

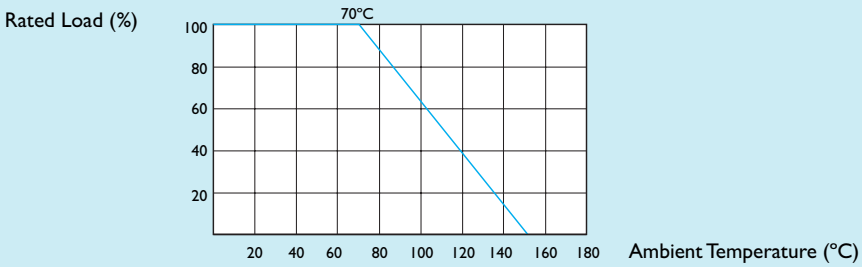
INTRODUCTION

The MFR Series Metal Film Resistors are manufactured using vacuum sputtering system to deposit multiple layers of mixed metals and passivative materials onto a carefully treated high grade ceramic substrate, the resistors are coated with layers of blue lacquer.

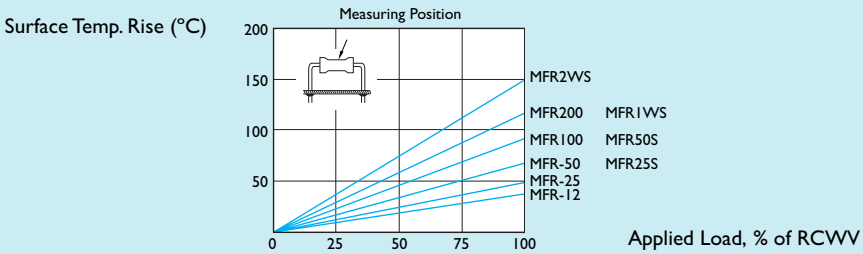
FEATURES

Power Rating	1/6W, 1/4W, 1/2W, 1W, 2W
Resistance Tolerance	±0.1%, ±0.25%, ±0.5%, ±1%
T.C.R.	±15ppm/ºC, ±25ppm/ºC, ±50ppm/ºC, ±100ppm/ºC

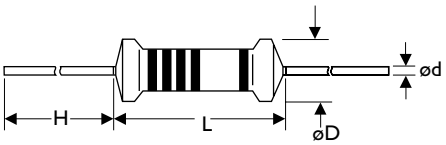
DERATING CURVE



HOT-SPOT TEMPERATURE



DIMENSIONS



Unit : mm

STYLE		DIMENSION			
Normal	**Miniature**	**L**	**øD**	**H**	**ød**
MFR-12	MFR25S	3.3±0.4	1.8±0.3	28±2.0	0.5±0.05
MFR-25	MFR50S	6.3±0.5	2.3±0.3	28±2.0	0.6±0.05
MFR-50	MFR1WS	9.0±0.5	3.2±0.5	26±2.0	0.6±0.05
MFR100	MFR2WS	11.5±1.0	4.5±0.5	35±2.0	0.8±0.05
MFR200	–	15.5±1.0	5.0±0.5	33±2.0	0.8±0.05

Note :

ELECTRICAL CHARACTERISTICS

STYLE	MFR-12	MFR25S	MFR-25	MFR50S	MFR-50	MFR1WS	MFR100	MFR2WS	MFR200
Power Rating at 70ºC	1/6W	1/4W		1/2W		1W		2W	
Operating Temp. Range	-55ºC to +155ºC								
Maximum Working Voltage	200V	200V	250V	300V	350V	400V	500V	500V	500V
Maximum Overload Voltage	400V	400V	500V	600V	700V	800V	1000V	1000V	1000V
Dielectric Withstanding Voltage	300V	400V	500V	500V	500V	700V	1000V	1000V	1000V
Value Range ±0.5%, ±1%	10Ω~1MΩ								
Value Rang ±0.1%, ±0.25%	100Ω~100KΩ								
Temperature Coefficient (by Type)	±15ppm/ºC, ±25ppm/ºC, ±50ppm/ºC, ±100ppm/ºC								

* Resistance Range for standard resistance, below or over this resistance on request.

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD		APPRAISE
Short Time Overload	JIS-C-5202 5.5	2.5 Times RCWV for 5 Seconds	±(0.25%+0.05Ω)
Dielectric Withstanding Voltage	JIS-C-5202 5.7	in V-Block for 60 Seconds	by Type
Temperature Coefficient of Resistance	JIS-C-5202 5.2	-55ºC to +155ºC	by Type
Insulation Resistance	JIS-C-5202 5.6	in V-Block	>10000MΩ
Solderability	JIS-C-5202 6.5	235ºC for 5±0.5 Seconds	95% Min. Coverage
Resistance to Solvent	JIS-C-5202 6.9	Trichroethane for 1 Min. with Ultrasonic	No Deterioration of Coatings and Markings
Terminal Strength	Direct load for 10 Sec. in The Direction of The Terminal Leads		≥2.5kg (24.5N)
Pulse Overload	JIS-C-5202 5.8	4 Times RCWV 10000 Cycles (1 Sec. on , 25 Sec. off)	±(2%+0.05Ω)
Load Life in Humidity	JIS-C-5202 7.9	40±2ºC, 90~95% RH at RCWV for 1000 Hrs. (1.5 Hrs. on , 0.5 Hrs. off)	±(1.5%+0.05Ω)
Load Life	JIS-C-5202 7.10	70ºC at RCWV for 1000 Hrs. (1.5 Hrs. on , 0.5 Hrs. off)	±(1.5%+0.05Ω)
Temperature Cycling	JIS-C-5202 7.4	-55ºC→Room Temp.→+155ºC→Room Temp. for 5 Cycles	±(0.25%+0.05Ω)
Resistance to Soldering Heat	JIS-C-5202 6.4	350ºC±10ºC for 3±0.5 Seconds	±(0.25%+0.05Ω)

* Rated Continuous Working Voltage (RCWV)= $\sqrt{\text{Power Rating x Resistance Value}}$