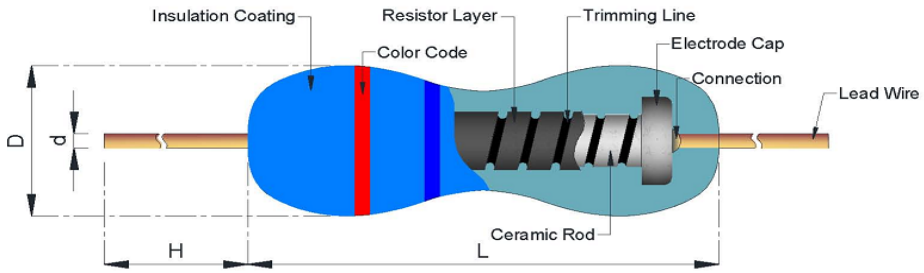
MF series
Metal Film Fixed Resistors

◆ Features

» Body Coating: Epoxy is Light Blue. Silicone Flame proof is Gray (FMF Type).
» Low T.C.R. 200ppm, 100ppm, 50ppm, 25ppm, 15ppm, 10ppm, 5ppm.
» High precision 5%, 1%, 0.5%, 0.25%, 0.1%

◆ Power Ratings Dimensions

» Standard Type: 1/8W ~ 5W
» Miniature Type: 1/4Ws~5Ws



Type	DIMENSION(mm)			
	L	ØD	H	Ød
MF12 (1/8W)	3.3 +0.4 -0.2	1.8 ± 0.3	29 ± 2.0	0.45 ± 0.05
MF16 (1/6W)				
MFS25 (1/4WS)				
MF0204 (0.4W)	3.3 +0.7 -0.2			
MF25 (1/4W)	6.3 ± 0.5	2.3 ± 0.3	28 ± 2.0	0.55 ± 0.05
MFS50 (1/2WS)				
MF0207 (0.6W)				
MF50 (1/2W)	9.0 ± 0.5	3.2 ± 0.5	26 ± 2.0	0.55 ± 0.05
MFS100 (1WS)				
MF100 (1W)	11.5 ± 1.0	4.5 ± 0.5	35 ± 2.0	0.8 ± 0.05
MFS200 (2WS)				
MF200 (2W)	15.5 ± 1.0	5.0 ± 0.5	32 ± 2.0	0.8 ± 0.05
MFS300 (3WS)				
MF300 (3W)	17.5 ± 1.0	6.2± 0.5	32 ± 2.0	0.8 ± 0.05
MFS500 (5WS)				
MF500 (5W)	24.0 ± 1.0	8.5± 0.5	37 ± 2.0	0.8 ± 0.05

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◆ Part Number

MF	12	F	2K3	T	
Type	**Watt**	**Tolerance**	**R value**	**Packing**	**TCR Value**
MF	1/8W = 12	J = ± 5%	2.3K = 2K3	T = Taping Box	Blank= Standard
MFS	1/6W = 16	G = ± 2%	10KΩ = 10K	B = Bulk	D = ±50ppm
	1/4W = 25	F = ± 1%		R = Taping Reel	C = ±25ppm
	0.4W = 0204	D = ± 0.5%		M = M Type	N = ±15ppm
	1/2W = 50	C = ± 0.25%		MK = MK Lead Form	B = ±10ppm
	0.6W = 0207	B = ± 0.1%		F = F Lead Form	S = ±5ppm
	1W = 100	A= ± 0.05%		FC = FC Lead Form	E = ±100ppm
	2W = 200			FK = FK Lead Form	F = ±200ppm
	3W = 300			FCK = FCK Lead Form	
	5W = 500			FKK = FKK Lead Form	
				PANA = PNAN Lead Form (Only for 1/8W & 1/4W)	

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◆ Electrical Characteristics

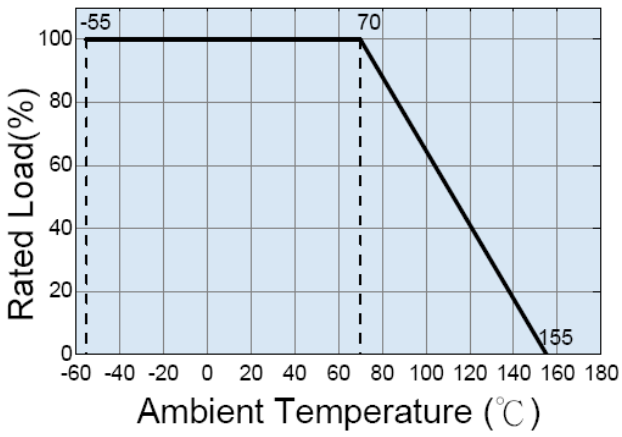
Power rating at 70℃	Resistance		Operating Temp. Range	Max. Working Voltage	Max. Overload Voltage	Dielectric withstanding voltage
	Range (Ω) 0.5% / 1% / 5%	Range (Ω) 0.25% / 0.1%				
1/8W	0.1Ω~10M	10Ω~1M	-55℃ to +155℃	150V	300V	300V
1/6W				150V	300V	
0.4W				200V	400V	
1/4W				250V	500V	400V
0.6W				300V	500V	400V
1/2W				350V	500V	500V
1W				500V	700V	700V
2W				500V	1000V	1000V
3W	0.1Ω~1M	---		500V	1000V	1000V
5W		---		500V	1000V	1000V
1/4WS	0.1Ω~1M	10Ω~1M		200V	400V	300V
1/2WS				300V	500V	400V
1WS				400V	600V	500V
2WS				500V	700V	700V
3WS				500V	1000V	1000V
5WS	0.1Ω~100K	---		500V	1000V	1000V

Value range for standard resistance, below or over this resistance on request.

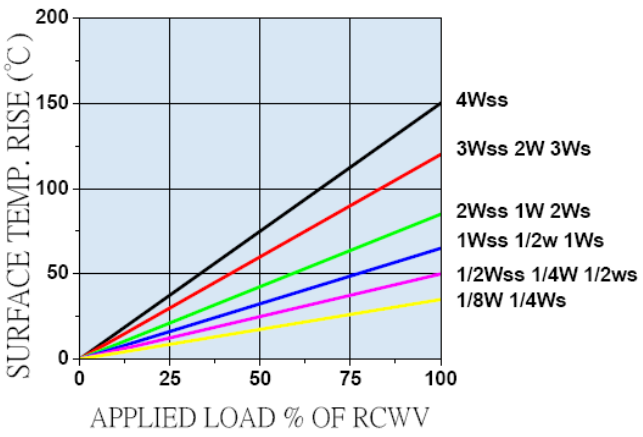
Rated continuous Working Voltage (RCWV) = $\sqrt{POWER.\ RATING * RESISTANCE.VALUE}$

PS. Standard TCR: 1R-9R9=>200ppm; 10R-1M=>100ppm

●POWER GRAPH



●HOT-SPOT TEMPERATURE



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◆ Environmental Characteristics

Performance Test	Test Method	Appraise
SHORT TIME OVERLOAD	2.5 times RCWV for 5 seconds	As request
TEMPERATURE COEFFICIENT(T.C.R.)	Resistance value at room Temperature and room Temperature+100℃	By Type
VOLTAGE PROOF	In V-Block for 60 seconds	By Type
PULSE OVERLOAD	4 times RCWV for 10000 cycles (1sec.on，25secs.off)	±(0.75%+0.05Ω)
INSULATION RESISTANCE	In V-Block	＞10000MΩ
LOAD LIFE	70℃ at RCWV for 1000hrs.(1.5hrs. on，0.5hrs.off)	±(1.5%+0.05Ω)
LOAD LIFE IN HUMIDITY	40±2℃ 90~95%RH at RCWV for 1000hrs. (1.5hrs. on，0.5hrs.off)	±(1.5%+0.05Ω)
TEMPERATURE CYCLING	-40 ℃/85℃ with 1000 cycles. (20min for both low and high Temperature , transfer time less 30s)	±(0.75%+0.05Ω)
SOLDER ABILITY	260±5℃ for 2±0.5 seconds	95% min. coverage
RESISTANCE TO SOLDERING HEAT	The solder iron heated to 350°C ±10°C and applied to the termination for a duration of 4 seconds to 5 seconds.	±(0.25%+0.05Ω)
RESISTANCE TO SOLVENT	Trichloroethane for 1 min. with ultrasonic	No deterioration of coatings and markings
TERMINAL STRENGTH	Direct load for 10 sec. In the direction off the terminal leads.	Tensile:≧2.5kg

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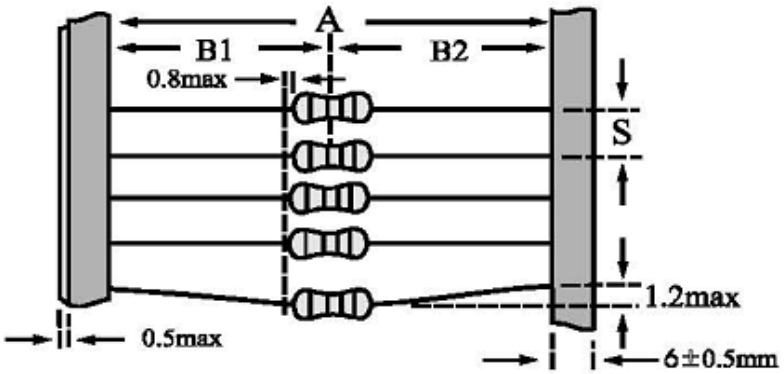
◆ Packing Methods Bandoleer for Axial leads



Type	Dimensions (mm)				
	A		B1-B2	S (spacing)	Max. deviation of spacing
1/8W 1/6W 1/4WS 0.4W (0204)	52	+1 -0	1.2	5	1 mm per 10 spacing
	26	+1 -0	1		
1/4W 1/2WS 0.6W(0207)	52	+1 -0	1.2	5	
	26	+1 -0	1		
1/3W	52	+1 -0	1.2	5	
1/2W 1WS	52	+1 -0	1.2	5	
1W 2WS	52	+1 -0	1.5	5	
	73	+1 -0			
2W 3WS	52	+1 -0	1.5	10	
	73	+1 -0			
3W 5WS	52	+1 -0	1.5	10	
	73	+1 -0			
5W 7WS	88	+1 -0	1.5	10	

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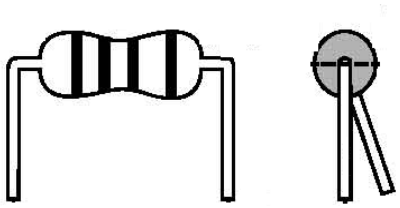
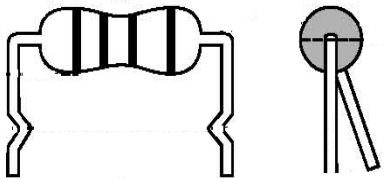
◆ Lead Forming

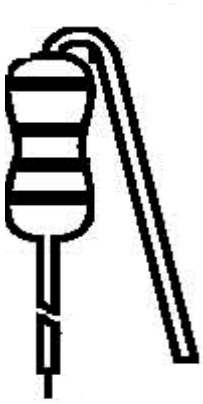
M Lead Form



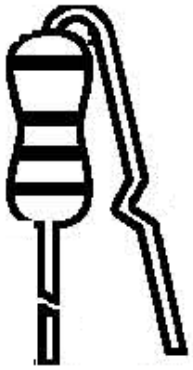
MK Lead Form



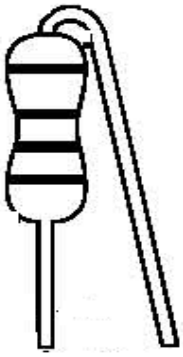
F Lead Form



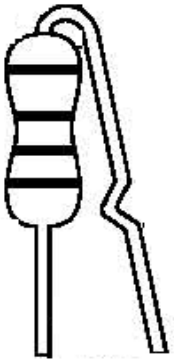
FK Lead Form



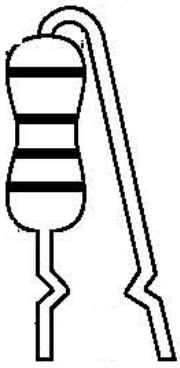
FC Lead Form



FCK Lead Form



FKK Lead Form



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