

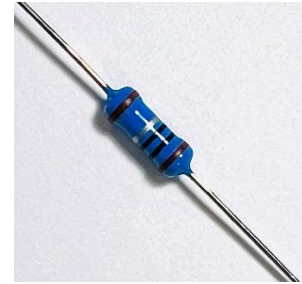
Lumimax Optoelectronic Technology

MF Series

Metal Film Fixed Resistors

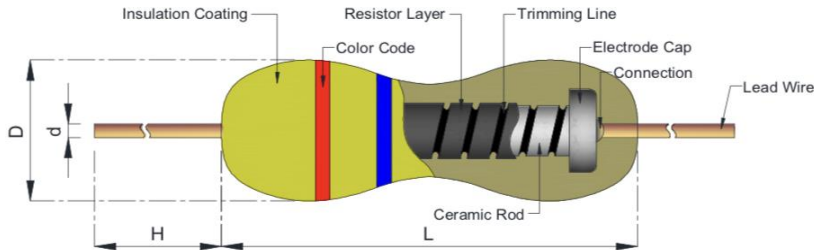
Product Features

- Low Noise
- Low T.C.R. 200ppm, 100ppm, 50ppm, 25ppm, 15ppm, 10ppm
- High precision 1%, 0.5%, 0.25%, 0.1%
- Products with lead-free terminations meet EU RoHS and China RoHS requirements
- All general purpose and Power applications
- AECQ-200 Qualified



**Pb-Free and
RoHS Compliant**

Power rating and Dimensions



Style	Dimensions (mm)			
	L	D	H	d
CF-1/8W	3.3 + 0.4 ~ -0.2	1.8 ± 0.3	29 ± 2.0	0.45 ± 0.03
CF-1/4W	6.3 ± 0.5	2.3 ± 0.3	28 ± 2.0	0.55 ± 0.03
CF-1/2W	9.0 ± 0.5	3.2 ± 0.5	26 ± 2.0	0.65 ± 0.03
CF-1W	11.5 ± 1.0	4.5 ± 0.5	35 ± 2.0	0.78 ± 0.03
CF-2W	15.5 ± 1.0	5.0 ± 0.5	32 ± 2.0	0.78 ± 0.03

Electrical Characteristics

Power rating at 70°C	1/8W	1/4W	1/2W	1W	2W
Body Size (D x L mm)	1.8 x 3.3	2.3 x 6.3	3.2 x 9.0	4.5 x 11.5	5.0 x 15.5
(D x L inch)	0.071 x 0.13	0.091 x 0.248	0.126 x 0.354	0.177 x 0.453	0.197 x 0.61
Operating temp. range	-55°C + 155°C				
Max. working voltage	150V	250V	350V	450V	500V
Max. overload voltage	300V	500V	500V	700V	1000V
Dielectric withstanding voltage	300V	500V	500V	700V	1000V
Value range ± 1%	0.1Ω ~ 10M E24 series; 1Ω ~ 1MΩ E96 series				
Value range ±0.25%, ±0.1%, and ±0.05%	10Ω ~ 100KΩ E24 and E192 series				

44611 S. Grimmer Blvd., Fremont, CA 94538

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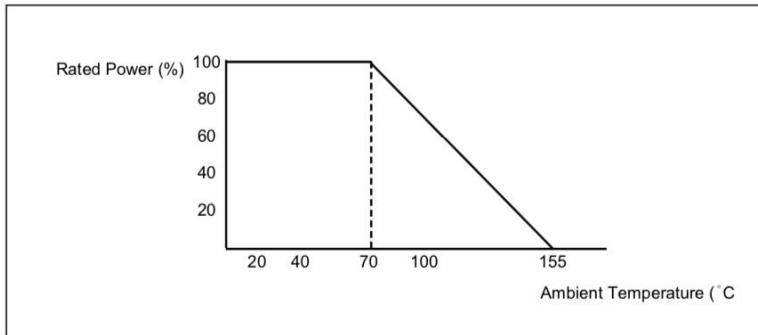
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Derating Curve



Test and Requirements

Performance test	Test Method	Appraise
Short time overload	JIS-C-5202 5.5 2.5 times RCWV for 5 seconds	$\pm(0.25\%+0.05\Omega)$
Temperature Coefficient (TCR)	Resistance value at room temperature +25°C at room temperature +125°C	By type
Dielectric withstanding voltage	JIS-C5202 5.7 In V-Block for 60 seconds	By type
Pulse overload	JIS-C5202 5.8 4 times RCWV for 10000 cycles (1 sec. on, 25 secs. Off)	$\pm (1\% +0.05\Omega)$
Insulation resistance	JIS-C5202 5.6 In V-Block for 60 sec.	>10,000M Ω
Load life	JIS-C5202 7.10 70°C at RCWV for 1000 hours (1.5 hrs on, 0.5 hrs. off)	$\pm (1.5\%+0.05\Omega)$
Load life in humidity	JIS-C5202 7.9 40°C \pm 2°C 90~95% RH at RCWV for 1000 hours (1.5 hrs on, 0.5 hrs. off)	$\pm (1.5\%+0.05\Omega)$
Soler ability	JIS-C5202 6.5 260°C \pm 5°C for 2 \pm 0.5 seconds	95% min. coverage
Resistance to solvent	IPA for 5 \pm 0.5 Min. with ultrasonic	No deterioration in coatings and markings
Terminal strength	Direct load for 10 sec. in the direction of the terminal leads.	Tensile: \geq 2.5kg

Note: RCWV: Rated Continuous Working Voltage = $\sqrt{\text{Power rating} \times \text{Resistance value}}$

Resistor body color

Normal size 1/8W to 2W: Blue color

Part Number

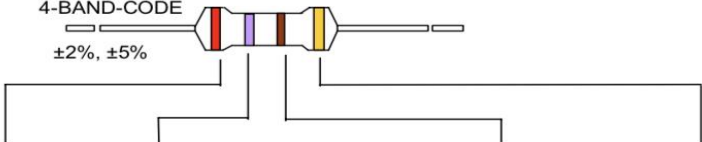
MF	1W	2K	J	T
Type	Power rating	Resistance	Tolerance	Packaging
MF – Metal film	1/8W	1R = 1Ω	F = ± 1%	TB = Taping in box
	1/4W	10R = 10Ω	J = ± 5%	TR = Taping in reel
	1/2W	2K = 2KΩ	D = ± 0.5%	BU = Bulk
	1W	3K3 = 3.3KΩ	C = ± 0.25%	T = Cut Taped
	2W	10M = 10MΩ	B = ± 0.1%	
	3W	22M = 22MΩ	A = ± 0.05%	
	1/6W			

Tape on box packing

1/2W, 1W and 2W Resistor	Quantity per box: 1000pcs
1/4W and 1/8W Resistor	Quantity per box: 5000pcs

MARKING

4-BAND-CODE
±2%, ±5%



COLOR	1st BAND	2nd BAND	3rd BAND	MULTIPLIER	TOLERANCE
BLACK	0	0	0	1Ω	
BROWN	1	1	1	10Ω	
RED	2	2	2	100Ω	± 2% (G)
ORANGE	3	3	3	1KΩ	
YELLOW	4	4	4	10KΩ	
GREEN	5	5	5	100K	
BLUE	6	6	6	1MΩ	
VIOLET	7	7	7	10MΩ	
GREY	8	8	8	0.001Ω	
WHITE	9	9	9	0.0001Ω	
GOLD				0.1Ω	± 5% (J)
SILVER				0.01Ω	

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