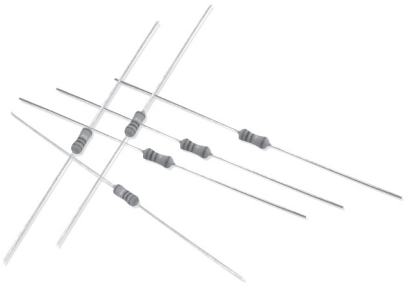
Metal Film Resistors

Flame-Proof Type

High Power Style [FMP Series]



FEATURES

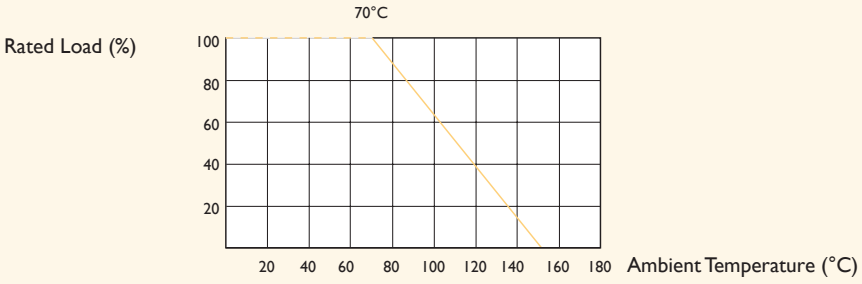
Power Rating	1/2W, 1W, 2W, 3W
Resistance Tolerance	±1%, ±5%
T.C.R.	±100ppm/°C
Flameproof Multi-layer Coating Meets	UL-94V-0
Flameproof Feature Meets Overload Test	UL-1412

INTRODUCTION

The FMP Series Metal Film Power Flame Proof Resistors are manufactured using vacuum sputtering system to deposit multiple layers of mixed metals alloy and passivative materials onto a carefully treated high grade ceramic substrate. After a helical groove has been cut in the resistive layer, tinned connecting leads of electrolytic copper are welded to the end-caps. The resistors are coated with layers of pink color lacquer.

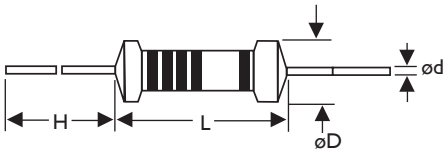
DERATING CURVE

For resistors operated in ambient temperatures above 70°C , power rating must be derated in accordance with the curve below.



DIMENSIONS

Unit : mm



STYLE	DIMENSION			
Ultra Miniature	**L**	**øD**	**H**	**ød**
FMP-50	3.4±0.3	1.9±0.2	28±2.0	0.45±0.05
FMP100	6.3±0.5	2.4±0.2	28±2.0	0.55±0.05
FMP200	9.0±0.5	3.9±0.3	26±2.0	0.55±0.05
FMP300	15.5±1.0	5.0±0.5	33±2.0	0.8±0.05

Note :

ELECTRICAL CHARACTERISTICS

STYLE	FMP-50	FMP100	FMP200	FMP300
Power Rating at 70 °C	1/2W	1W	2W	3W
Maximum Working Voltage	200V	350V	500V	750V
Maximum Overload Voltage	400V	600V	700V	1000V
Dielectric Withstanding Voltage	300V	500V		750V
Resistance Range	1Ω ~ 10MΩ & 0Ω for E24 & E96 series value			
Operating Temp. Range	- 55°C to + 155°C			
Temperature Coefficient	±100ppm/°C			

* Below or over this resistance range on request.

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD		APPRAISE
Short Time Overload	JIS-C-5202 5.5	2.5 Times RCWV for 5 Seconds	±(0.5%+0.05Ω)
Dielectric Withstanding Voltage	JIS-C-5202 5.7	in V-Block for 60 Seconds	by Type
Temperature Coefficient	JIS-C-5202 5.2	-55°C to +155°C	by Type
Insulation Resistance	JIS-C-5202 5.6	in V-Block	>1000MΩ
Solderability	JIS-C-5202 6.5	260°C ±5°C for 5 ±0.5 Seconds	95% Min. Coverage
Resistance to Solvent	JIS-C-5202 6.9	IPA for 1 Min. with Ultrasonic	No deterioration of Coatings and Markings
Terminal Strength	JIS-C-5202 6.1	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)	±1.0%+0.05Ω
Load Life in Humidity	JIS-C-5202 7.9	40±2°C , 90~95% RH at RCWV for 1,000 Hrs. (1.5 Hrs. on , 0.5 Hrs. off)	±2.0%+0.05Ω
Load Life	JIS-C-5202 7.10	70°C at RCWV for 1,000 Hrs. (1.5 Hrs. on 0.5 Hrs. off)	±2%+0.05Ω
Temperature Cycling	JIS-C-5202 7.4	-55°C→Room Temp.→+155°C→Room Temp. for 5 Cycles	±1.0%+0.05Ω
Resistance to Soldering Heat	JIS-C-5202 6.4	350°C ±10°C for 3±0.5 Seconds	±0.25%+0.05Ω
Overload Flame Retardant	JIS-C-5202 7.12	4 Times RCWV for 1 Minute	No evidence of flaming or arcing

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