



**Lean Gimn Enterprise Co.,Ltd**

**連靖企業股份有限公司**

## **Metal Film Leaded Precision Resistor MFR Series**

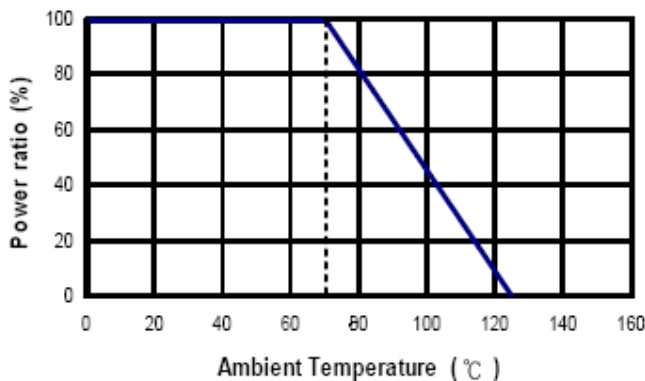
### **Features :**

- 1.High thermal conductivity and specific gravity rods.
- 2.Power Rating : 0.25W~1W
- 3.Precision tolerance tight to  $\pm 0.05\%$
- 4.Superior electrical TCR performances narrowed to  $\pm 5 \text{ PPM}/^{\circ}\text{C}$
- 5.Epoxy coating, precision metal film, Lead(Pb)-free and RoHS compliant.

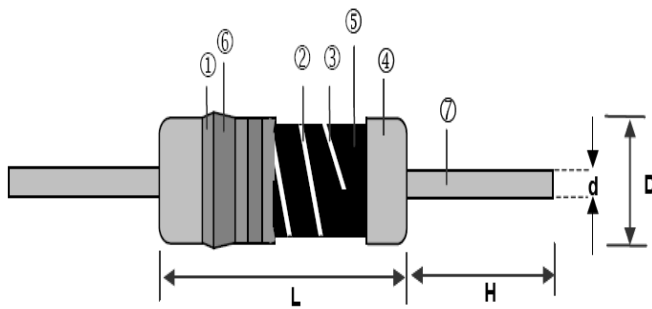
### **Applications:**

1. Telecom.
2. Measuring and Calibration Equipment.
3. Industrial Process Control Systems.
4. Audio and Vedio

### **Derating Curve:**



## Construction:



- ① Insulation Coating ( Epoxy resin)
- ② Trimming Line
- ③ Ceramic Core(Alumina ceramic)
- ④ Electrode Cap(Tinned iron cap)
- ⑤ Resistor Layer(Nickel alloy)
- ⑥ Marking (Epoxy)
- ⑦ Lead Wire( Tinned annealed copper wire)

Type	L	D	H	d	Weight(g) (1000 pcs)
MFD 0623	6.3±0.5	2.3±0.3	28±2.0	0.55±0.03	150
MFD 0932	9.0±0.5	3.2±0.5	28±2.0	0.55±0.03	350

## Part Numbering :

Product Type	Dimensions (L X D)	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Power Rating	Resistance
MFR	0623: 6.3*2.3 0932: 9.0*3.2	A: ±0.05% B: ±0.1% C: ±0.25% D: ±0.5% F: ±1%	A: Ammo B: Bulk T: Taping Reel	S: ±5 B: ±10 N: ±15 C: ±25 D: ±50 E: ±100	Standard T: 1W U: 1/2W V: 1/4W	R100: 0.1 Ω 0010: 1 Ω 1000: 100 Ω 2201: 2K2 Ω 1001: 1K Ω 1004: 1M Ω

## Standard Electrical Specifications

Item Type	Power Rating 70 °C	Operating Temp.Rang	Max. Operating Voltage	Max. Overload Voltage	Resistance Range					TCR (PPM/°C)
					±0.05%	±0.1%	±0.25%	±0.5%	±0.1%	
0623	1/4W	-55~+155°C	250V	500V	10 Ω-1M Ω					±5
					10 Ω-1M Ω		10 Ω-10M Ω			±10
0932	1/2W	-55~+155°C	350V	600V	10 Ω-1M Ω					±15
					10 Ω-1M Ω		10 Ω-10M Ω			±25

## High Power Rating Electrical Specifications

Item Type	Power Rating 70 °C	Operating Temp.Rang	Max. Operating Voltage	Max. Overload Voltage	Resistance Range					TCR (PPM/°C)
					±0.05%	±0.1%	±0.25%	±0.5%	±0.1%	
0623	1/2W	-55~+155°C	300V	600V	10Ω-1MΩ					±5 ±10
					10Ω-1MΩ		10Ω-10MΩ			±15 ±25
	3/5W		350V	700V	10Ω-1MΩ		10Ω-4.99MΩ			±15
					10Ω-1MΩ		10Ω-10MΩ			±25
0932	1/2W	400V	800V	10Ω-1MΩ					±5	
				10Ω-1MΩ		10Ω-10MΩ			±10	

## Environmental Characteristics

Item	Requirement	Test Method
Short Time Overload	±0.25%	RCWV*2.5 or Max. overload voltage for 5 seconds
Insulation Resistance	> 1000MΩ	Apply 100VDC for 1 minute °
Endurance	±0.2%	70±2C, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF" °
Damp Heat with Load	±0.3%	40±2C, 90~95% R.H. Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Solderability	90% min. Coverage	245±5°C for 3 seconds
Dielectric Withstanding Voltage	By Type	Apply Max.Overload Voltage for 1 minute
Temperature Coefficient	By Type	Resistance value at room temperature and room temperature+100°C
Pulse Overload	±0.75%	4 times RCWV for 10000 cycles with 1 second "ON" and 25 seconds "OFF"
Resistance To Solvent	No deterioration of coatings and markings	Trichroethane for 1 min. with ultrasonic
Terminal Strength	Tensile: ≥ 2.5kg	Direct Load for 10 sec. In the direction off the terminal leads
Shelf life	ΔR=±0.1%	12 months at room temperature 25±3°C, 80% RH Max.