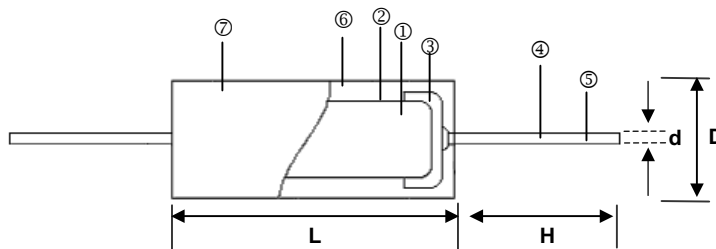


High Precision Metal Film Led Resistor – MFD Series

Construction



① Ceramic Core (Alumina ceramic)	⑤ Lead Wire (Tinned annealed copper wire)
② Resistor Element (Nickel alloy)	⑥ Molding (Expose)
③ Terminal (Tinned iron cap)	⑦ Marking (Expose based ink)
④ Connection	

Features

- Very tight tolerance down to $\pm 0.02\%$
- Extremely low TCR down to $\pm 5\text{PPM}/^\circ\text{C}$
- High precision
- Excellent stability

Applications

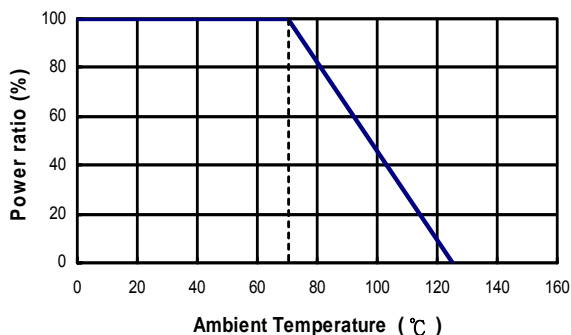
- Precision Equipment
- Measurement Equipment

Dimensions

Unit: mm

Type	L	D	H	d	Weight (g) (1000pcs)	Packaging
						Ammo
MFD0727	7.0 ± 0.3	2.7 ± 0.4	26 ± 3	0.6 ± 0.05	230	2,000
MFD1040	10.2 ± 0.3	4.0 ± 0.4	25 ± 3	0.6 ± 0.05	430	1,000

Derating Curve



Part Numbering

MFD	0727	B	A	C	V	1001
Product Type	Dimensions (L×D)	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Power Rating	Resistance
	0727: 7.0x2.7 1040: 10.2x4.0	Q: $\pm 0.02\%$ A: $\pm 0.05\%$ B: $\pm 0.1\%$	A: Ammo B: Bulk	S: ± 5 B: ± 10 N: ± 15 C: ± 25	U: 1/2W V: 1/4W	0100: 10Ω 2201: 2200Ω 1002: 10000Ω 1001: 1KΩ 1004: 1MΩ

Standard Electrical Specifications

Item Type	Power Rating at 70°C	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Resistance Range			TCR (PPM/°C)
					±0.02%	±0.05%	±0.1%	
0727	1/4W	-55 ~ +125°C	250V	500V	10Ω - 500KΩ			±5
					10Ω - 1MΩ			±10 ±15 ±25
1040	1/2W		300V	600V	10Ω - 500KΩ			±5
					10Ω - 1MΩ			±10 ±15 ±25

Operating Voltage = $\sqrt{P \cdot R}$

Environmental Characteristics

Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	Resistance value at room temperature and room temperature+60°C
Short Time Overload	±(0.05%+0.05Ω)	RCWV*2.5 or Max. overload voltage for 5 seconds
Insulation Resistance	> 1,000MΩ	Apply 500V _{DC} for 1 minute
Endurance	±(0.2%+0.05Ω)	70±2°C, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat with Load	±(0.2%+0.05Ω)	40±2°C, 90~95% R.H. Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Solderability	95% min. coverage	245±5°C for 5 seconds
Resistance to Soldering Heat	±(0.05%+0.01Ω)	350±10°C for 3 seconds or 260±5°C for 10 seconds
Terminal Strength	Tensile: ≥ 2.5kg	Tensile strength: for 10 sec. Torsional strength: Rotated through 360°, 5 rotations
Pulse Overload	±(0.1%+0.01Ω)	4 times RCWV for 10000 cycles with 1second "ON" and 25 seconds "OFF"
Temperature Cycle	±(0.05%+0.05Ω)	-25°C (30min.)/+85°C (30min.), 5 cycles
Resistance to Solvent	No deterioration of coatings and markings	Trichroethane for 3 min. with ultrasonic

■ Reference Standards: MIL-STD-202, JIS-C 5201-1

■ Storage Temperature: 25±3°C; Humidity < 80%RH