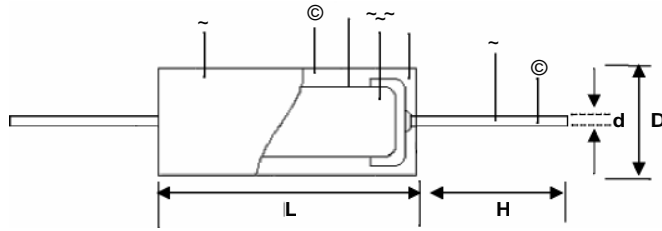
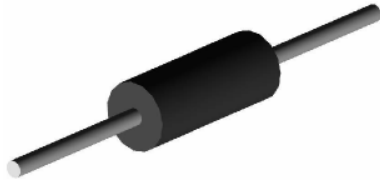


## Metal Film Ledged Resistor – MFD Series

### Construction



~	Ceramic Core (Alumina ceramic)	®	Lead Wire (Tinned annealed copper wire)
®	Resistor Element (Nickel alloy)	©	Molding (Expose)
cj	Terminal (Tinned iron cap)	©	Marking (Expose based ink)
®	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

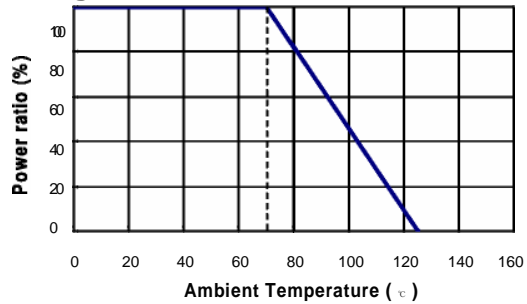
- Precision Equipment —
- Measurement Equipment

### Dimensions

Unit: mm

Type	L	D	H	d	Weight (g) (1000pcs)
MFD0727	$7.0 \pm 0.3$	$2.7 \pm 0.4$	$26 \pm 3$	$0.6 \pm 0.05$	230
MFD1040	$10.2 \pm 0.3$	$4.0 \pm 0.4$	$25 \pm 3$	$0.6 \pm 0.05$	430

### Derating Curve



### Part Numbering

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

## 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	10fl - 500Kfl 10fl - 1Mfl 10fl - 1Mfl 10fl - 1Mfl			±5
1040	1/2W		300V	600V				±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	±(0.15%+0.05fl)	RCWV*2.5 or Max. overload voltage for 5 seconds
Insulation Resistance	> 1 ,000Mfl	Apply 500V <sub>DC</sub> for 1 minute
Endurance	±(0.5%+0.05fl)	70±2C, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat with Load	±(0.5%+0.05fl)	40.2C, 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±5C for 5 seconds
Resistance to Soldering Heat	±(0.1 %+0.01 fl)	350±10°C for 3 seconds after test leave for 3 hours
Terminal Strength	Tensile: $\geq$ 2.5kg	Tensile strength: for 10 sec. Torsional strength: Rotated through 360°, 5 rotations
Pulse Overload	±(0.1%+0.01fl)	4 times RCWV for 10000 cycles with 1 second "ON" and 25 seconds "OFF"
Temperature Cycle	±(0.5%+0.05fl)	Low side : -55C/30min., Room temp. : 10 to 15min. High side : 85C/30min., Room temp. : 10 to 15min. 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