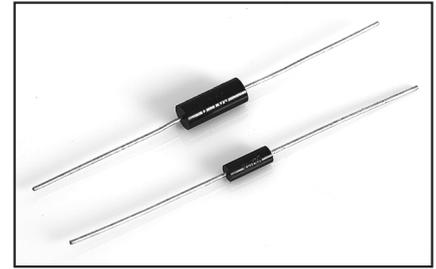


# High Precision Metal Film Leaded Resistors

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



## GENERAL SPECIFICATIONS

Model	Power Rating at 70°C	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Resistance Range			TCR [ppm/°C]
					$\pm 0.02\%$	$\pm 0.05\%$	$\pm 0.1\%$	
MFD0727	1/4W	-55°C ~ +125°C	250V	500V	10Ω-500KΩ			$\pm 5$
					10Ω-1MΩ			$\pm 10, \pm 15, \pm 25$
MFD1040	1/2W		300V	600V	10Ω-500KΩ			$\pm 5$
					10Ω-1MΩ			$\pm 10, \pm 15, \pm 25$

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

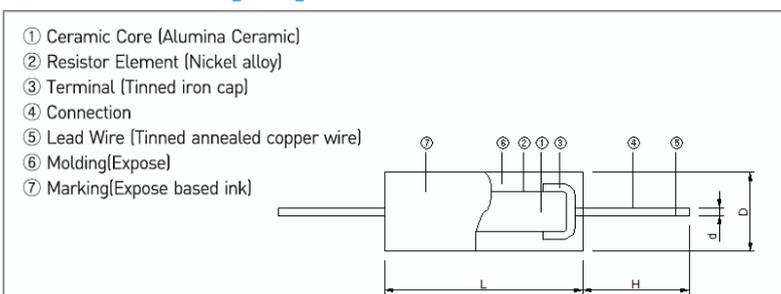
## CHARACTERISTICS

Values in [ ] mean change in  $\Omega$  after test

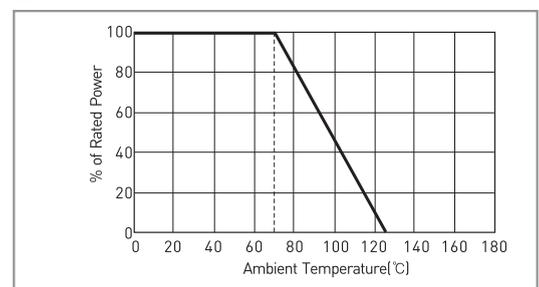
Temperature Coefficient	As Spec.	Resistance value at room temperature and room temperature +60°C
Short Time Overload	$\pm[0.05\%+0.05\Omega]$	RCW*2.5 or maximum overload voltage for 5 seconds
Insulation Resistance	> 1000MΩ	Apply 500VDC for 1 minute
Load Life	$\pm[0.2\%+0.05\Omega]$	70 $\pm$ 2°C, maximum working voltage for 1000 hours with 1.5 hours "ON" and 0.5 hour "OFF"
Moisture Load Life	$\pm[0.2\%+0.05\Omega]$	40 $\pm$ 2°C, 90-95% RH, maximum working voltage for 1000 hours with 1.5 hours "ON" and 0.5 hour "OFF"
Solderability	95% coverage minimum	245 $\pm$ 5°C for 5 seconds
Resistance to Soldering Heat	$\pm[0.05\%+0.01\Omega]$	350 $\pm$ 10°C for 3seconds or 260 $\pm$ 5°C for 10 seconds
Terminal Strength	Tensile: $\geq 2.5\text{kg}$	Tensile strength: for 10 sec.; Torsional Strength: Rotated through 360°, 5 rotations
Pulse Overload	$\pm[0.1\%+0.1\Omega]$	4 times RCW for 10000 cycles with 1second "ON" and 25seconds "OFF"
Temperature Cycle	$\pm[0.05\%+0.05\Omega]$	-25°C(30minutes) / +85°C(30minutes), 5 cycles
Resistance to Solvent	No deterioration of coatings and markings	Trichroethane for 3 minutes with ultrasonic

\* Reference Standards: MIL-STD-202, JIS-C 5201-1 / \* Storage Temperature: 25 $\pm$ 3°C; Humidity < 80%RH

## DIMENSIONS [mm]



## DERATING CURVE



Model	L	D	H	d	Weight(g) (1000pcs)	Packaging Ammo [pcs]
MFD0727	7.0 $\pm$ 0.3	2.7 $\pm$ 0.4	26 $\pm$ 3	0.6 $\pm$ 0.05	230	2,000
MFD1040	10.2 $\pm$ 0.3	4.0 $\pm$ 0.4	25 $\pm$ 3	0.6 $\pm$ 0.05	430	1,000

## ORDERING PROCEDURE EXAMPLE

Ordering Example	Model	TCR	Resistance	Tolerance	Code
MFD0727 S0100AA	MFD0727	S [ $\pm 5 \text{ ppm}/^\circ\text{C}$ ]	10Ω	A [ $\pm 0.05\%$ ]	A (Ammo)
MFD1040 B1004BB	MFD1040	B [ $\pm 10 \text{ ppm}/^\circ\text{C}$ ]	1MΩ	B [ $\pm 0.1\%$ ]	B (Bulk)