Data Sheet

Customer:	
Product:	**High Precision Metal Film Leaded Resistor — MFD Series**
Sizes.:	**0727/1040**
Issued Date:	**31-Mar-25**
Edition:	**REV.A6**

RoHS Compliant

HONG KONG HELISTO INDUSTRIAL LIMITED
香港海利斯特实业有限公司

SHENZHEN HELISTO TECHNOLOGYCOLTD
深圳市海利斯特科技有限公司

ADD:5/F., A Block, Hongdu Industrial Park, Fanshen Road, 45 Area, Baoan, Shenzhen, China
TEL:+86-755-29741555 29749555
FAX:+86-755-29742111
E-mail:donnyhai@helisto.com
www.Helisto.com

Produced by (QC)	Checked (QC)	Approved by (QC)	Prepared by (Sales)	Accepted by (Customer)
31-Mar-25	31-Mar-25	31-Mar-25	31-Mar-25	
Mandy Chang	*Ben Chang*	*Ben Chang*		

High Precision Metal Film Leaded Resistor



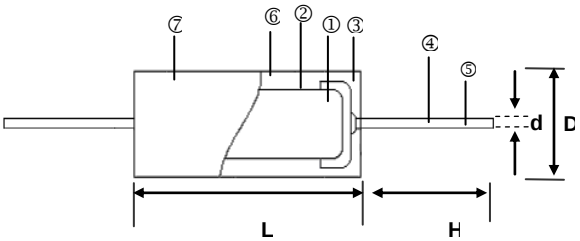
■Features

- Very tight tolerance down to ±0.02%
- Extremely low TCR down to ±5PPM/℃
- High precision
- Excellent stability

■Applications

- Precision Equipment
- Measurement Equipment

■Construction



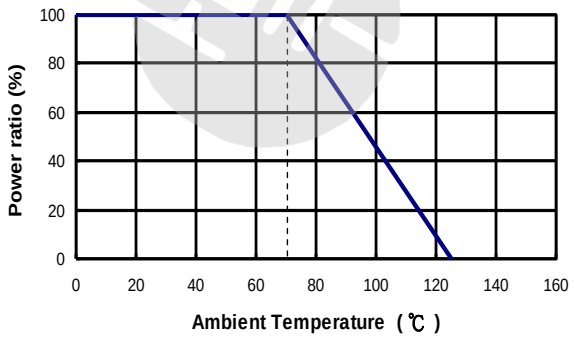
①	Ceramic Core	⑤	Lead Wire
②	Resistor Element	⑥	Molding
③	Terminal	⑦	Marking
④	Connection		

■Dimensions

Unit : mm

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

■Derating Curve



High Precision Metal Film Leaded Resistor

■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: ±0.02% A: ±0.05% B: ±0.1% F: ±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 70°C	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Resistance Range				TCR (PPM/°C)
					±0.02%	±0.05%	±0.1%	±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*R) or Max. operating voltage listed above, whichever is lower.
Overload Voltage=2.5*$\sqrt{}$(P*R) or Max. overload voltage listed above, whichever is lower.

■Environmental Characteristics

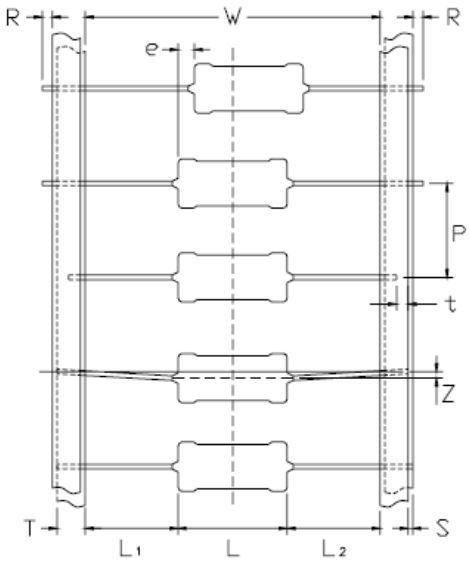
Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	Resistance value at room temperature and room temperature+60℃
Short Time Overload	±(0.05%+0.05Ω)	**JIS-C-5201-1 5.5** RCWV*2.5 or Max. overload voltage whichever is lower for 5 seconds
Insulation Resistance	> 1,000MΩ	**MIL-STD-202F Method 302** Apply 500V_{DC} for 1 minute
Endurance	±(0.2%+0.05Ω)	**MIL-STD-202F Method 108A** 70±2℃, RCWV for 1000 hrs with 1.5 hrs “ON” and 0.5 hrs “OFF”
Damp Heat with Load	±(0.2%+0.05Ω)	**MIL-STD-202F Method 103B** 40±2°C, 90~95% R.H., RCWV for 1000 hrs with 1.5 hrs “ON” and 0.5 hrs “OFF”
Solderability	95% min. Coverage	**MIL-STD-202F Method 208H** 245±5℃ for 5 seconds
Resistance to Soldering Heat	±(0.05%+0.01Ω)	350±10℃ for 3 seconds or 260±5℃ 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)	**JIS-C-5201-1 5.8** 4 times RCWV for 10000 cycles with 1second “ON” and 25 seconds “OFF”
Temperature Cycle	±(0.05%+0.05Ω)	-25℃(30min)/+85℃(30min), 5 cycles
Resistance to Solvent	No deterioration of coatings and markings	**JIS-C-5201-1 6.9** Trichroethane for 3 min. with ultrasonic

RCWV(Rated continuous working voltage)= $\sqrt{}$(P*R) or Max. Operating voltage whichever is lower

■Storage Temperature: 15~28°C; Humidity < 80%RH

■Shelf life: 1 years Max

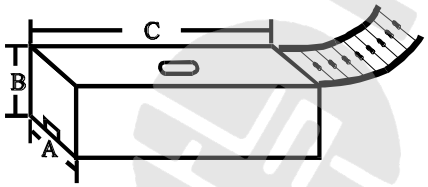
■Taping/Packing Specifications



Unit: mm

Type \ Packaging	Packing Methods									
	L	W	P	L1-L2 Max.	T	Z Max.	R Max.	t Max.	e Max.	S Max.
0727	7.0±0.3	52±1	5±0.3	1.0	6±0.5	0.8	0	2.5	0.5	0.5
1040	10.2±0.3	52±1	5±0.3	1.0	6±0.5	0.8	0	2.5	0.5	0.5

■Ammo Packing



Unit: mm

Type \ Packaging	Ammo Packing			
	A	B	C	Qty
0727	74±1	47±1	260±1	1,000
	85±1	78±1	260±1	2,000
1040	85±1	78±1	260±1	1,000

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version A6	Mar 31,2025		-Add Shelf life.