Data Sheet

Customer:	
Product:	**Automotive Grade Alloy Chip Shunt Resistor — LRA..A Series**
Size.:	**1066**
Issued Date:	**01-Apr-25**
Edition:	**REV.A1**

RoHS Compliant

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

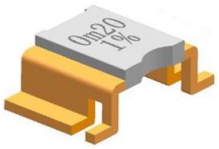
SHENZHEN HELISTO TECHNOLOGYCOLTD
深圳市海利斯特科技有限公司

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)
01-Apr-25	01-Apr-25	01-Apr-25	01-Apr-25	
Mandy Chang	*Ben Chang*	*Ben Chang*		

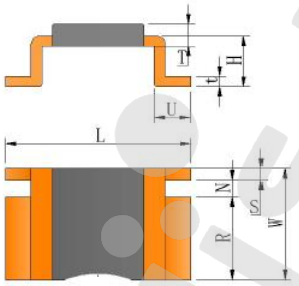
Automotive Grade Alloy Chip Shunt Resistor

■Applications



- Nudity E-beam welded metal strip resistors with 4-terminal, Pure copper electrodes are the ideal solution for current sensing applications.
- Excellent reliability, stability, Anti-pulse capability, support ±0.5% tolerance of R value
- Special welding process, all-metal construction, surface pickling passivation Treatment, vulcanization resistance, strong weather resistance
- Very low EMF (<1 μ V/℃)
- Ultra-low parasitic inductance down to 3 nH, Fast response, Can be used for high frequency AC current detection
- AEC-Q200 Reliability Testing passed
- RoHS compliant

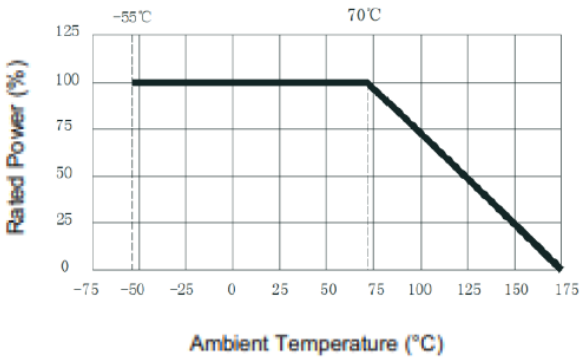
■Dimensions



Type	Size (Inch)	Resistance (mΩ)	Materiat	T (mm)	t (mm)	L (mm)	W (mm)	R (mm)	N (mm)	S (mm)	U (mm)	H (mm)
LRA1066	4026	0.2	Manganin	1.3±0.1	0.6±0.1	10.1±0.3	6.6+0.35/-0.2	4.9±0.2	1.0±0.15	0.7±0.1	2.0±0.1	3.0±0.3
		0.3	Manganin	1.2±0.1	0.6±0.1							
		0.5	Manganin	0.68±0.1	0.68±0.1							
		0.7	Manganin	0.48±0.1	0.48±0.1							
		1	Manganin	0.35±0.1	0.4±0.1							
		2	FeCrAl	0.55±0.1	0.55±0.1							
		3	FeCrAl	0.36±0.1	0.4±0.1							
		4	FeCrAl	0.28±0.1	0.4±0.1							
		5	FeCrAl	0.28±0.1	0.4±0.1							
		2	Karma	0.52±0.1	0.52±0.1							
		3	Karma	0.35±0.1	0.4±0.1							
		4	Karma	0.26±0.1	0.4±0.1							

■Note: FeCrAl material is magnetic and affects the inverter current, so please be careful in product selection.

■Derating Curve



■Part Numbering

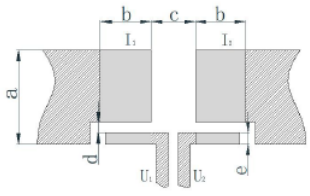
LRA	1066	F	T	C	R	R005	FO	A
Product Type	Dimensions (WxL)	Resistance Tolerance	Packaging Code	TCR (PPM/˚C)	Power Rating	Resistance	Material & Shape Code	Function Code
	1066: 10.1x6.6	D: ±0.5% F: ±1% J: ±5%	T: Taping Reel	C : ±25 D : ±50 W : ±75	R: 3W H: 4W D: 5W I: 6W E: 7W 9: 9W 11: 11W 12: 12W	0M20: 0.2mΩ 0M30: 0.3mΩ 0M50: 0.5mΩ 0M70: 0.7mΩ R001: 1mΩ R002: 2mΩ R003: 3mΩ R004: 4mΩ R005: 5mΩ	FO: FeCrAl & Outward Fold KO: Karma & Outward Fold MO: Manganese & Outward Fold	A: Automotive Grade

■Standard Electrical Specifications

Type	Power Rating	Material	Resistance Range(mΩ)			TCR (PPM/°C)
			±0.5%	±1%	±5%	
LRA1066	12W	Manganin	0.2			±75
	11W	Manganin	0.3			±75
	9W	Manganin	0.5			±75
	7W	Manganin	0.7			±75
	6W	Manganin	1			±50
	6W	FeCrAl	2			±25
	5W	FeCrAl	3			±25
	4W	FeCrAl	4			±25
	3W	FeCrAl	5			±25
	6W	Karma	2			±50
	5W	Karma	3			±50
	4W	Karma	4			±50

■**Operating Temperature: -55 ~ +175℃**

■Recommend Land Pattern



Type	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)
LRA1066	7.3	2.45	5.5	0.8	0.9

■Environmental Characteristics

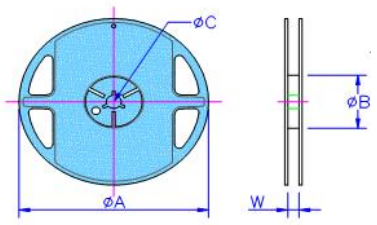
Item	Requirement	Test Method
Thermal shock	Within the specified value	IEC60115-1 4.8 Measured value -55℃ and +130℃, reference value +20℃
Solderability	No visible damage, weldable area 95% minimum	IEC60115-1 4.17 245℃ Tin slot, hold for 3 sec
Short time overload	No visible damage, ΔR±1.0% maximum	IEC60115-1 4.13 2.5 times rated voltage, 5 sec
Resistance to solder heat	No visible damage, ΔR±1.0% maximum	IEC60115-1 4.18 270℃ Tin bath, hold for 10 sec
High temperature and humidity	No visible damage, ΔR±1.0% maximum	MIL-STD-202 Method 103 Temperature 85℃, humidity 85% of the conditions applied 10% of the rated power (current) or component limit current (whichever is less), for 1000 hours
High temperature storage	No visible damage, ΔR±1.0% maximum	IEC60115-1 4.25.3 1000 hrs @ 170℃, without load
Low temperature load	No visible damage, ΔR±1.0% maximum	IEC60115-1 4.36 -55℃, No load for one hour, rated voltage load for 45 min, no load for 15 min
Temperature cycling	No visible damage, ΔR±1.0% maximum	IEC60115-1 4.19 -55℃ @ 30 min ~ room temperature @ <5 min ~ +155℃ @ 30 min, 500 cycles
Load life	No visible damage, ΔR±1.0% maximum	IEC60115-1 4.25.1 1000 h @ 70±2℃, rated voltage, 90 min on, 30 min off

■Storage Temperature: 5°C~35℃ ; Humidity: 40%~75% RH

■Shelf life: 1 years Max

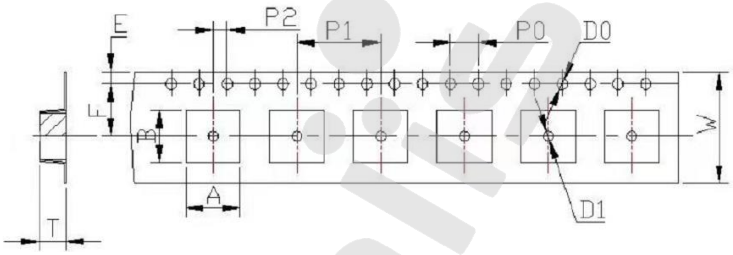
■Packaging

Reel Specifications & Packaging Quantity



Type	Packaging Quantity		Tape Width	Reel Diameter	ΦA (mm)	ΦB (mm)	ΦC (mm)	W (mm)
LRA1066	Embossed	1K	24mm	13 inch	330±2	60±1	13.5±0.5	25±1

Embossed Plastic Tape Specifications



Type	A (mm)	B (mm)	W (mm)	E (mm)	F (mm)	P0 (mm)	P1 (mm)	P2 (mm)	ΦD0 (mm)	T (mm)
LRA1066	7.3	12.1	24	1.75	12.2	6	12	2	1.5	3.8

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version A1	Apr 01,2025		-Add Storage conditions and Shelf life.