Distributeur : JBG-METAFIX

Data Sheet

Customer:	
Product:	Low Ohm (Metal Strip) Chip Resistor – LRC Series
Sizes:	1206/2512/2725/2728/4527
Issued Date:	16-May-23
Edition:	REV.B2

RoHS Compliant

VIKING TECH CORPORATION
光頡科技股份有限公司
No.70, Guangfu N. Rd., Hukou Township, Hsinchu County 303, Taiwan (R.O.C)

TEL:886-3-5972931
FAX:886-3-5972935•886-3-5973494
E-mail:sales@viking.com.tw

VIKING TECH CORPORATION KAOHSIUNG BRANCH
光頡科技股份有限公司高雄分公司
No.248-3, Sin-Sheng Rd., Cian-Jhen Dist., Kaohsiung, 806, Taiwan

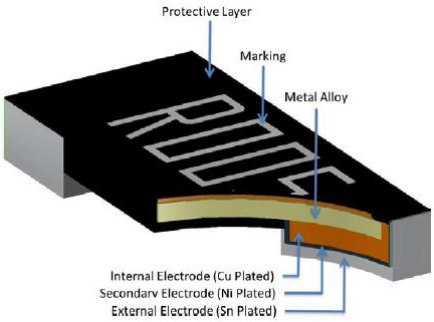
TEL:886-7-8217999
FAX:886-7-8228229
E-mail:sales@viking.com.tw

VIKING ELECTRONICS (WUXI) CO., LTD.
光頡電子(無錫)有限公司
No.22 Xixia Road, Machinery & Industry Park, National Hi-Tech Industrial Development Zone of Wuxi, Wuxi, Jiangsu Province, China
Zip Code:214028
TEL:86-510-85203339
FAX:86-510-85203667•86-510-85203977
E-mail:china@viking.com.tw

Produced by (QC)	Checked (QC)	Approved by (QC)	Prepared by (Sales)	Accepted by (Customer)
16-May-23	16-May-23	16-May-23	16-May-23	
Kris Chen	*Ben Chang*	*Ben Chang*		

Low Ohm (Metal Strip) Chip Resistor – LRC Series

■Construction



■Features

- Low resistance / low TCR
- Excellent long term stability
- RoHS compliant and halogen free
- Lead free
- High precision current sensing and voltage division

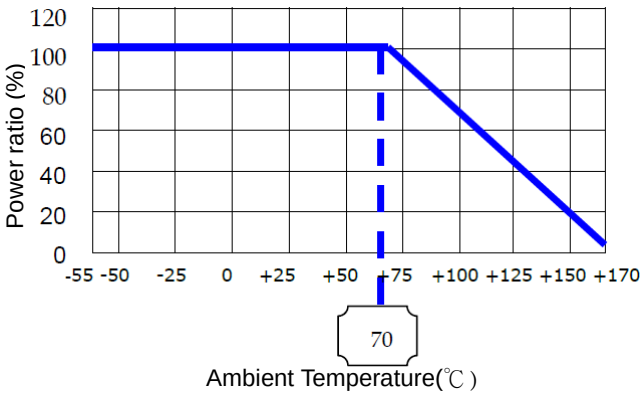
■Applications

- Entertainment Product
- Power Supply
- Measuring Instrument
- Industrial Product
- Battery Management System

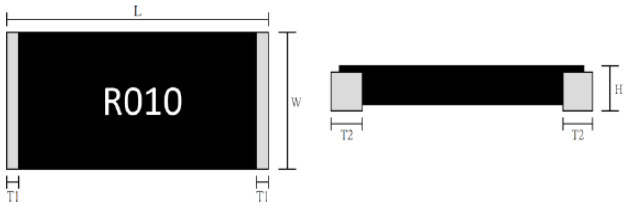
■Part Numbering

LRC	06	F	T	D	T	R005
Product Type	Dimensions (L×W)	Resistance Tolerance	Packaging Code	TCR (PPM/℃)	Power Rating	Resistance
	06: 1206 12: 2512 25: 2725 28: 2728 27: 4527	D: ±0.5% F: ±1% G: ±2% J: ±5%	T: Taping Reel	D: ±50 W: ±75 E: ±100	U: 1/2W Q: 3/4W T: 1W A: 1.5W S: 2W R: 3W H: 4W D: 5W	R001: 0.001Ω R010: 0.01Ω 0M50: 0.0005Ω

■Derating Curve



■Dimensions



Type	Size (Inch)	Power Rating	Resistance (mΩ)	L (mm)	W (mm)	H (mm)	T1 (mm)	T2 (mm)
LRC06	1206	1/2W 3/4W	1	3.200±0.254	1.650±0.254	0.820±0.254	0.508±0.254	0.508±0.254
			2	3.200±0.254	1.650±0.254	0.700±0.254	0.508±0.254	0.508±0.254
			3	3.200±0.254	1.650±0.254	0.600±0.254	0.508±0.254	0.508±0.254
			4-20	3.200±0.254	1.650±0.254	0.550±0.254	0.508±0.254	0.508±0.254
			21-50	3.200±0.254	1.650±0.254	0.470±0.254	0.508±0.254	0.508±0.254
			51-75	3.200±0.254	1.650±0.254	0.400±0.254	0.508±0.254	0.508±0.254
		1W	1	3.200±0.254	1.650±0.254	0.820±0.254	0.508±0.254	0.508±0.254
			2	3.200±0.254	1.650±0.254	0.700±0.254	0.508±0.254	0.508±0.254
			3	3.200±0.254	1.650±0.254	0.600±0.254	0.508±0.254	0.508±0.254
			4-20	3.200±0.254	1.650±0.254	0.550±0.254	0.508±0.254	0.508±0.254
			21-50	3.200±0.254	1.650±0.254	0.470±0.254	0.508±0.254	0.508±0.254
		1.5W	1	3.200±0.254	1.650±0.254	0.820±0.254	0.508±0.254	0.508±0.254
			2	3.200±0.254	1.650±0.254	0.700±0.254	0.508±0.254	0.508±0.254
			3	3.200±0.254	1.650±0.254	0.600±0.254	0.508±0.254	0.508±0.254
			4-10	3.200±0.254	1.650±0.254	0.550±0.254	0.508±0.254	0.508±0.254
LRC12	2512	1W	451-500	6.350±0.254	3.050±0.254	0.350±0.254	0.750±0.254	0.850±0.254
		1W 2W	0.5	6.350±0.254	3.050±0.254	0.820±0.254	1.980±0.254	2.000±0.254
			0.75	6.350±0.254	3.050±0.254	0.700±0.254	1.150±0.254	1.980±0.254
			0.8	6.350±0.254	3.050±0.254	0.700±0.254	1.150±0.254	1.860±0.254
			1	6.350±0.254	3.050±0.254	0.720±0.254	1.150±0.254	2.200±0.254
			1.5	6.350±0.254	3.050±0.254	0.720±0.254	1.150±0.254	1.400±0.254
			2-5	6.350±0.254	3.050±0.254	0.720±0.254	1.150±0.254	1.150±0.254
			6	6.350±0.254	3.050±0.254	0.550±0.254	1.150±0.254	1.100±0.254
			7-10	6.350±0.254	3.050±0.254	0.600±0.254	1.150±0.254	1.100±0.254
			11-75	6.350±0.254	3.050±0.254	0.600±0.254	1.050±0.254	1.100±0.254
			76-100	6.350±0.254	3.050±0.254	0.550±0.254	0.750±0.254	1.100±0.254
			101-135	6.350±0.254	3.050±0.254	0.470±0.254	0.750±0.254	1.100±0.254
			136-200	6.350±0.254	3.050±0.254	0.400±0.254	0.750±0.254	1.100±0.254
			201-450	6.350±0.254	3.050±0.254	0.400±0.254	0.750±0.254	0.850±0.254
		3W	0.5	6.350±0.254	3.050±0.254	0.820±0.254	1.980±0.254	2.000±0.254
			0.75	6.350±0.254	3.050±0.254	0.700±0.254	1.150±0.254	1.980±0.254
			0.8	6.350±0.254	3.050±0.254	0.700±0.254	1.150±0.254	1.860±0.254
			1	6.350±0.254	3.050±0.254	0.720±0.254	1.150±0.254	2.200±0.254
			1.5	6.350±0.254	3.050±0.254	0.720±0.254	1.150±0.254	1.400±0.254
			2-5	6.350±0.254	3.050±0.254	0.720±0.254	1.150±0.254	1.150±0.254
			6	6.350±0.254	3.050±0.254	0.550±0.254	0.750±0.254	1.100±0.254
			7-10	6.350±0.254	3.050±0.254	0.600±0.254	1.150±0.254	1.100±0.254
			11-75	6.350±0.254	3.050±0.254	0.600±0.254	0.750±0.254	1.100±0.254
			76-100	6.350±0.254	3.050±0.254	0.550±0.254	0.750±0.254	1.100±0.254
LRC25	2725	4W	0.2	6.900±0.254	6.350±0.254	1.100±0.254	1.200±0.254	2.150±0.254
			0.25	6.900±0.254	6.350±0.254	0.950±0.254	1.200±0.254	2.287±0.254
			0.3	6.900±0.254	6.350±0.254	0.950±0.254	1.200±0.254	1.975±0.254
			0.35	6.900±0.254	6.350±0.254	0.950±0.254	1.200±0.254	1.710±0.254
			0.4	6.900±0.254	6.350±0.254	0.950±0.254	1.200±0.254	1.440±0.254
			0.5	6.900±0.254	6.350±0.254	0.850±0.254	1.200±0.254	2.080±0.254
			0.6	6.900±0.254	6.350±0.254	0.850±0.254	1.200±0.254	1.780±0.254
			0.8	6.900±0.254	6.350±0.254	0.850±0.254	1.200±0.254	1.300±0.254
			1	6.800±0.254	6.350±0.254	0.650±0.254	1.150±0.254	1.800±0.254
			1.5-1.6	6.800±0.254	6.350±0.254	0.650±0.254	1.150±0.254	1.500±0.254
			2-3	6.800±0.254	6.350±0.254	0.550±0.254	1.150±0.254	1.500±0.254

Low Ohm (Metal Strip) Chip Resistor

Type	Size (Inch)	Power Rating	Resistance (mΩ)	L (mm)	W (mm)	H (mm)	T1 (mm)	T2 (mm)
LRC28	2728	4W	4-450	6.600±0.254	6.700±0.254	0.580±0.254	0.400±0.254	1.050±0.254
LRC27	4527	2W	0.5	11.300±0.500	6.600±0.500	0.770±0.254	0.900±0.254	3.000±0.254
			1	11.300±0.500	6.600±0.500	0.650±0.254	0.900±0.254	3.000±0.254
			1.5-20	11.300±0.500	6.600±0.500	0.650±0.254	0.900±0.254	2.000±0.254
			21-100	11.300±0.500	6.600±0.500	0.550±0.254	0.900±0.254	2.000±0.254
		3W	0.5	11.300±0.500	6.600±0.500	0.770±0.254	0.900±0.254	3.000±0.254
			1	11.300±0.500	6.600±0.500	0.650±0.254	0.900±0.254	3.000±0.254
			1.5-20	11.300±0.500	6.600±0.500	0.650±0.254	0.900±0.254	2.000±0.254
			21-60	11.300±0.500	6.600±0.500	0.550±0.254	0.900±0.254	2.000±0.254
		5W	0.5	11.300±0.500	6.600±0.500	0.800±0.254	0.650±0.254	3.000±0.254
			1	11.300±0.500	6.600±0.500	0.680±0.254	0.650±0.254	3.000±0.254
			1.5-20	11.300±0.500	6.600±0.500	0.680±0.254	0.650±0.254	2.000±0.254
			21-500	11.300±0.500	6.600±0.500	0.580±0.254	0.650±0.254	2.000±0.254

■Electrical Specifications

Item / Type	Power Rating at 70°C	Operating Temp. Range	Max. Rating Current	Max. Overload Current	Resistance Range (mΩ)				TCR (PPM/°C)
					±0.5%	±1%	±2%	±5%	
LRC06 (1206)	1/2W	-55 ~ +170°C	22.36A	50.00A	5-75	1-75			±50
	3/4W		27.38A	61.23A	5-75	1-75			
	1W		31.62A	70.71A	5-50	1-50			
	1.5W		38.72A	86.60A	5-10	1-10			
LRC12 (2512)	1W	-55 ~ +170°C	44.72A	100.00A	-	0.5-0.8			±75
			31.62A	70.71A	5-450	1-500			±50
	2W		63.24A	141.42A	-	0.5-0.8			±75
			44.72A	100.00A	5-450	1-450			±50
	3W		77.45A	173.20A	-	0.5-0.8			±75
			54.77A	122.47A	5-100	1-100			±50
LRC25 (2725)	4W	-55 ~ +170°C	141.42A	282.84A	-	0.2			±100
			126.49A	252.98A	-	0.25-3			±50
LRC28 (2728)	4W	-55 ~ +170°C	31.62A	63.24A	7-450	4-450			±50
LRC27 (4527)	2W	-55 ~ +170°C	63.24A	141.42A	-	0.5			±75
			44.72A	100.00A	5-100	1-100			±50
	3W		77.45A	173.20A	-	0.5			±75
			54.77A	122.47A	5-60	1-60			±50
	5W		100.00A	173.20A	-	0.5			±75
			70.71A	122.47A	5-500	1- 500			±50

Rating Current =√(P/R)

■Resistance codes example

Resistance (4Marking)

Resistance	0.5 mΩ	1mΩ	5.5mΩ	25mΩ	100mΩ	0Ω
Codes	0m50	R001	5m50	R025	R100	0R

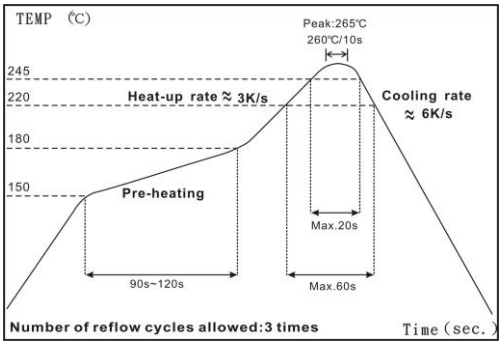
■Environmental Characteristics

Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	**JIS-C-5201-1 4.8** **IEC-60115-1 4.8** At 25°C/+150°C, 25°C is the reference temperature
Short Time Overload	4527: ΔR/R1≦±2.0% Other sizes: ΔR/R1≦±0.5%	**JIS-C-5201-1 4.13** **IEC-60115-1 4.13** 1206 1/2W : 5 times rated power for 5 seconds 1206 3/4W 1W 1.5W : 5 times rated power for 5 seconds 2512 : 5 times rated power for 5 seconds 2725 : 4 times rated power for 5 seconds 2728 : 4 times rated power for 5 seconds 4527 2W 3W: 5 times rated power for 5 seconds 4527 5W: 3 times rated power for 5 seconds
High Temperature Exposure	4527: ΔR/R1≦±2.0% Other sizes: ΔR/R1≦±1.0%	**JIS-C-5201-1 4.25** **IEC 60068-2-2** at +170°C for 1000 hrs
Resistance to Soldering Heat	ΔR/R1≦±0.5%	**JIS-C-5201-1 4.18** **IEC-60115-1 4.18** 260±5°C for 10 seconds
Temperature Cycling	ΔR/R1≦± 0.5%	**JESD22 Method JA-104** -55°C to +155°C, 1,000cycles, 30min maximum dwell time at each temperature extreme. Measurement at 24±4 hours after test condition.
Bias Humidity	ΔR/R1≦±0.5%	**MIL-STD-202 Method 103** 1000 hrs 85°C/85%RH, 10% of operating power. Measurement at 24±4 hours after test condition.
Load Life (Endurance)	4527: ΔR/R1≦±2.0% Other sizes: ΔR/R1≦±1.0%	**JIS-C-5201-1 4.25** **IEC-60115-1 4.25.1** 70±2°C, RCWV or Max. working voltage whichever is less for 1000 hrs with 1.5 hrs “ON” and 0.5 hrs “OFF”
Solderability	95% min. coverage	**JIS-C-5201-1 4.17** **IEC-60115-1 4.17** 245±5°C for 3 seconds
Dielectric Withstanding Voltage	No short or burned on the appearance	**JIS-C-5201-1 4.7** Applied 500VAC for 1 minute
Core Body Strength	No broken	**JIS-C-5201-1 4.15** Central part pressurizing force: 5N, 10 seconds
Terminal Strength	No broken	**AEC-Q200-006** Pressurizing force: 17.7N, 60 seconds
Bending Strength	No broken ΔR/R1≦±0.5%	**JIS-C-5201-1 4.33** **IEC-60115-1 4.33** Bending once for 2mm, 10 seconds.
Moisture Resistance	ΔR/R1≦±0.5%	**MIL-STD 202 Method 106** T=24 hours / cycle, 10 cycles. Steps 7a & 7b not required. Unpowered.

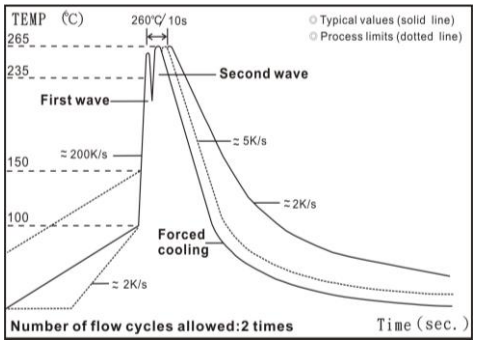
Note: This test is a destructive experiment. The top protective layer is prone to damage and peculiar smell during, in the 50mR~100mR resistance test. The resistance change rate can meets the specifications.

■**Storage Temperature: Storage time at the environment temp:25±5℃ & Humidity:60±20% is valid for one year from the date of delivery.**

■Soldering Condition



IR Reflow Soldering

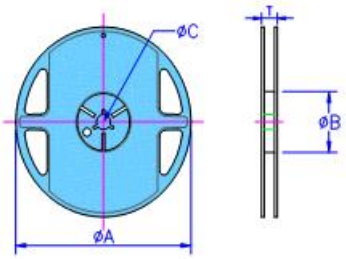


Wave Soldering

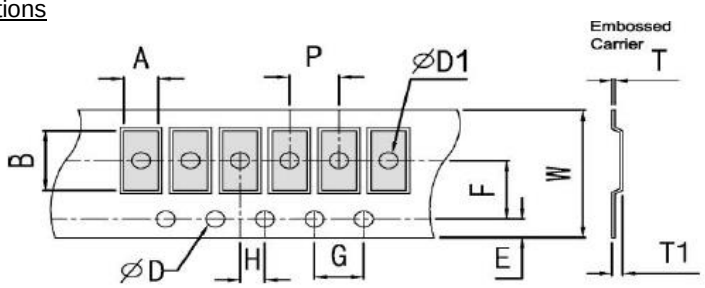
■Packaging

Reel Specifications & Packaging Quantity

Type	Packaging Quantity		Tape Width	Reel Diameter	ΦA (mm)	ΦB (mm)	ΦC (mm)	T (mm)
LRC06	Embossed	5K	8mm	7 inch	178±1.0	60±0.5	13.2±0.5	12.0±0.5
LRC06 (1mΩ)		4K						
LRC12	Embossed	4K	12mm	7 inch	178±1.0	60±0.5	13.5±0.5	16.2±0.5
LRC25 (≧1mΩ)	Embossed	2K	12mm	7 inch	178±1.0	60±0.5	13.5±0.5	16.2±0.5
LRC25 (0.2-0.8mΩ)	Embossed	1K	12mm	7 inch	178±1.0	60±0.5	13.5±0.5	16.2±0.5
LRC28	Embossed	2K	12mm	7 inch	178±1.0	60±0.5	13.5±0.5	16.2±0.5
LRC27	Embossed	1K	24mm	7 inch	178±1.0	60±0.5	13.2±0.5	24.4±2.0

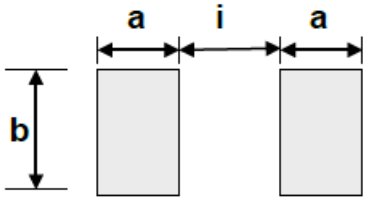


Embossed Plastic Tape Specifications



Type	A (mm)	B (mm)	W (mm)	E (mm)	F (mm)	G (mm)	P (mm)	H (mm)	ΦD (mm)	ΦD1 (mm)	T1 (mm)	T (mm)
LRC06 (1mΩ)	2.03±0.10	3.55±0.10	8.0±0.30	1.75±0.10	3.5±0.10	4.00±0.10	4.00±0.10	2.00±0.10	1.50+0.1/-0	1.00±0.10	1.10±0.10	0.20±0.05
LRC06	2.03±0.10	3.55±0.10	8.0±0.30	1.75±0.10	3.5±0.10	4.00±0.10	4.00±0.10	2.00±0.10	1.50+0.1/-0	1.00±0.10	0.85±0.10	0.20±0.05
LRC12 (0.5&1mΩ)	3.50±0.10	6.75±0.10	12.0±0.30	1.75±0.10	5.5±0.10	4.00±0.10	4.00±0.10	2.00±0.10	1.50+0.1/-0	1.55±0.10	1.10±0.10	0.20±0.05
LRC12	3.50±0.10	6.75±0.10	12.0±0.30	1.75±0.10	5.5±0.10	4.00±0.10	4.00±0.10	2.00±0.10	1.50+0.1/-0	1.55±0.10	0.90±0.10	0.20±0.05
LRC25 (0.2-0.8mΩ)	6.81±0.10	7.16±0.10	12.0±0.30	1.75±0.10	5.5±0.10	4.00±0.10	8.00±0.10	2.00±0.10	1.50+0.1/-0	1.55±0.10	1.30±0.10	0.25±0.05
LRC25	6.81±0.10	7.16±0.10	12.0±0.30	1.75±0.10	5.5±0.10	4.00±0.10	8.00±0.10	2.00±0.10	1.50+0.1/-0	1.55±0.10	1.05±0.10	0.25±0.05
LRC28	7.10±0.10	7.05±0.10	12.0±0.30	1.75±0.10	5.5±0.10	4.00±0.10	8.00±0.10	2.00±0.10	1.50+0.1/-0	1.55±0.10	0.95±0.10	0.20±0.05
LRC27	7.38±0.10	12.0±0.10	24.0±0.30	1.75±0.10	11.5±0.10	4.00±0.10	12.0±0.10	2.00±0.10	1.50+0.1/-0	1.50±0.10	1.05±0.10	0.30±0.10

■Recommend Land Pattern



Type	a (mm)	b (mm)	i (mm)
LRC06	1.46	2.15	1.68
LRC12 (0.5-1mΩ)	3.24	3.68	1.27
LRC12 (1.5mΩ)	3.20	3.68	1.35
LRC12 (2-5mΩ)	2.60	3.68	2.55
LRC12 (6-200mΩ)	2.30	3.68	3.15
LRC12 (201-500mΩ)	2.05	3.68	3.65
LRC25 (0.2-0.35mΩ)	2.90	6.70	1.28
LRC25 (0.4-0.8mΩ)	3.25	6.85	1.70
LRC25 (1-3mΩ)	2.75	6.85	2.70
LRC28	2.05	7.20	3.90
LRC27 (0.5-1.5mΩ)	4.50	8.74	4.50
LRC27 (2-100mΩ)	3.50	8.74	6.50
LRC27 (101-500mΩ)	3.50	8.74	6.50