

## Data Sheet

Customer:

Product: Ultra-Low Chip Resistor Jumper – LRJ Series

Size: 0402/0603/0805/1206/2010

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

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)
22-May-20	22-May-20	22-May-20	22-May-20	
<b>Chun</b>	<b>Ben Chang</b>	<b>Ben Chang</b>		

**Ultra-Low Chip Resistor Jumper**  
**Ultra-Low Chip Resistor Jumper - LRJ Series**

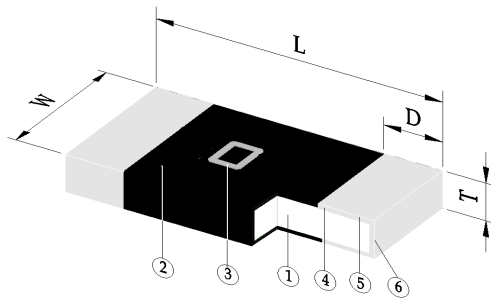
**■ Features**

- Ultra-Low resistance values Max. 0.5 mΩ
- High current application
- Pb Free

**■ Applications**

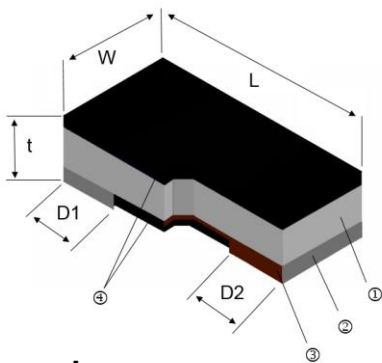
- NB
- Mobil Device
- Server
- Electrical tools
- Power Management

**■ Construction**



**LRJ06/LRJ10**

① Alloy Plate	④ Internal Electrode
② Overcoat	⑤ Barrier Layer
③ Marking	⑥ Solder Plating



**LRJ02/LRJ03/LRJ05**

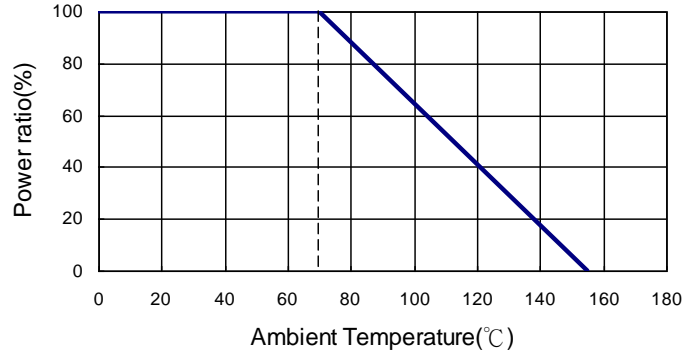
① Alumina Substrate	④ Overcoat
② External Electrode	No Marking
③ Resistor Layer	

**■ Dimensions**

Type	Size (Inch)	L (mm)	W (mm)	T (mm)	D (mm)
LRJ02	0402	1.00±0.05	0.50±0.05	0.25±0.10	0.30±0.10
LRJ03	0603	1.50±0.15	0.80±0.15	0.42±0.10	0.40±0.10
LRJ05	0805	1.95±0.15	1.20±0.15	0.58±0.10	0.55±0.10
LRJ06	1206	3.00±0.20	1.50±0.20	0.50±0.20	0.55±0.20
LRJ10	2010	5.00±0.20	2.50±0.20	0.50±0.20	0.75±0.20

**Ultra-Low Chip Resistor Jumper**

**Derating Curve**



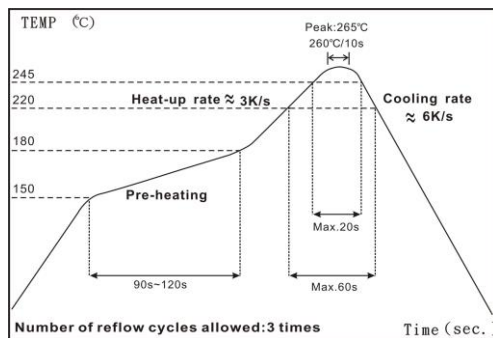
**Part Numbering**

LRJ	10	-	T	-		R0R0
Product Type	Dimensions (LxW)	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Power Rating	Resistance
	02: 0402 03: 0603 05: 0805 06: 1206 10: 2010	- No Specified	T: Taping Reel	- No Specified	: Standard	R0R0: Jumper

**Standard Electrical Specifications**

Item Type	Operating Temp. Range	Resistance Range (mΩ)	Rated Current (A)
LRJ02 (0402)	-55 ~ +155°C	0.5 mΩ Max.	20
LRJ03(0603)	-55 ~ +155°C		22.4
LRJ05(0805)	-55 ~ +155°C		31.6
LRJ06 (1206)	-55 ~ +155°C	0.2 mΩ Max.	50
LRJ10 (2010)	-55 ~ +155°C		71

**Soldering Condition (Reflow Soldering Only)**



Time of IR reflow soldering at maximum temperature point 260°C : 10s

**Notice : Wave soldering and hand soldering are not available.**

**■ Environmental Characteristics**

Item	Requirement	Test Method
Variation of resistance with temperature	Max. 0.5 mΩ	<b>JIS-C-5201-1 4.8</b> <b>IEC-60115-1 4.8</b> +25/-55°C, +25/+125°C
Short Time Overload	Max. 0.5 mΩ	<b>JIS-C-5201-1 4.13</b> <b>IEC-60115-1 4.13</b> Rated current*1.5 for 2s(LRJ02/06/10) Rated current*2.5 for 5s(LRJ03/05)
Endurance	Max. 0.5 mΩ	<b>JIS-C-5201-1 4.25</b> <b>IEC-60115-1 4.25.1</b> 70±2°C, Rated current for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat	Max. 0.5 mΩ	<b>JIS-C-5201-1 4.24</b> 40±2°C, 90~95% R.H. for 1000 hrs.
Dry Heat	Max. 0.5 mΩ	<b>JIS-C-5201-1 4.23</b> <b>IEC-60115-1 2.23.2</b> at +155°C for 1000 hrs
Bending Strength	Max. 0.5 mΩ	<b>JIS-C-5201-1 4.33</b> <b>IEC-60115-1 4.33</b> Bending once for 5 seconds with 3mm
Solderability	95% min. coverage	<b>JIS-C-5201-1 4.17</b> <b>IEC-60115-1 4.17</b> 245±5°C for 3 seconds
Resistance to Soldering Heat	Max. 0.5 mΩ	<b>JIS-C-5201-1 4.18</b> <b>IEC-60115-1 4.18</b> 260±5°C for 10 seconds
Rapid Change of Temperature	Max. 0.5 mΩ	<b>JIS-C-5201-1 4.18</b> <b>IEC-60115-1 4.18</b> -55°C to +125°C, 5 cycles

RCWV(Rated Continuous Working Voltage)=  $\sqrt{P \cdot R}$  or Max. Operating Voltage whichever is lower

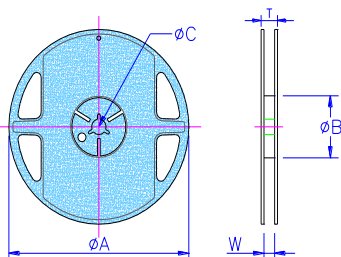
Operating Current =  $\sqrt{P/R}$  , Operating Voltage =  $\sqrt{P \cdot R}$

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

**■ Packaging**

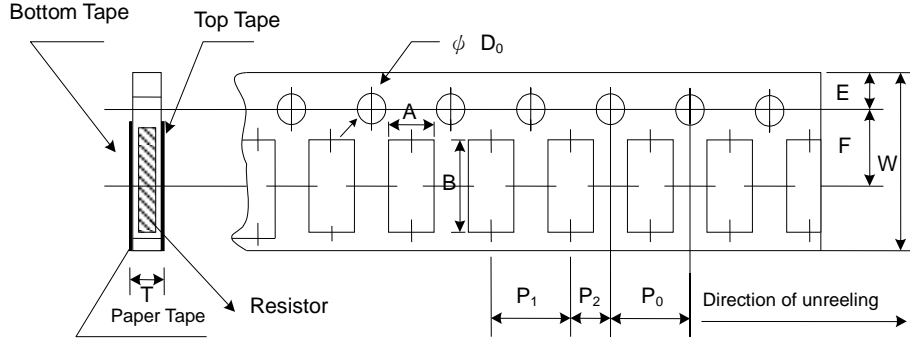
Reel Specifications & Packaging Quantity

Type	Packaging Quantity	Tape Width	Reel Diameter	ΦA (mm)	ΦB (mm)	ΦC (mm)	W (mm)	T (mm)
LRJ02	Paper 10K	8mm	7inch	178±1.0	60.0+1.0	13.5±0.7	9.5±1.0	11.5 ± 1.0
LRJ03	Paper 5K	8mm	7inch	178±1.0	60.0+1.0	13.5±0.7	9.5±1.0	11.5 ± 1.0
LRJ05	Paper 5K	8mm	7inch	178±1.0	60.0+1.0	13.5±0.7	9.5±1.0	11.5 ± 1.0
LRJ06	Paper 5K	8mm	7 inch	178.5±1.5	60 <sup>+1/-0</sup>	13.0±0.2	9.0±0.5	12.5±0.5
LRJ10	Embossed 4K	12mm	7 inch	178.5±1.5	60 <sup>+1/-0</sup>	13.0±0.5	13.0±0.5	15.5±0.5



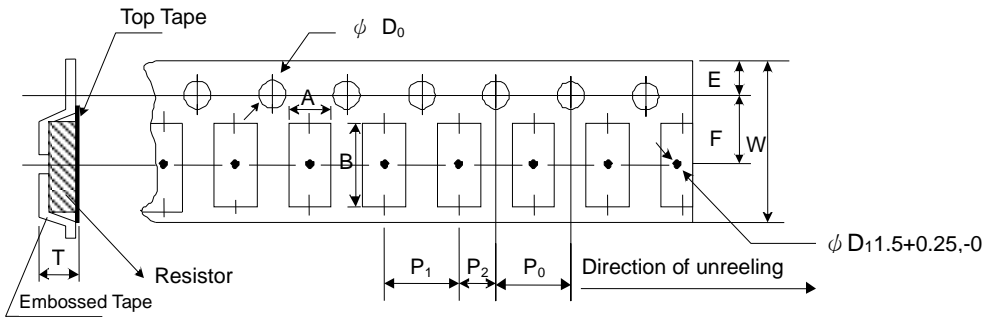
**Ultra-Low Chip Resistor Jumper**

Paper Tape Specifications



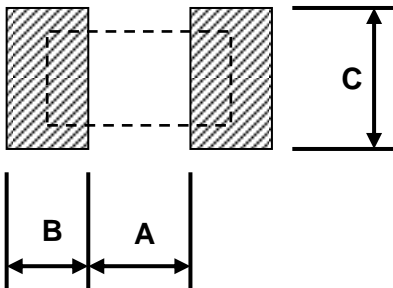
Type	A (mm)	B (mm)	W (mm)	E (mm)	F (mm)	P <sub>0</sub> (mm)	P <sub>1</sub> (mm)	P <sub>2</sub> (mm)	ΦD <sub>0</sub> (mm)	T (mm)
LRJ02	0.70±0.05	1.16±0.05	8.00±0.10	1.75±0.05	3.50±0.05	4.00±0.10	2.00±0.05	2.00±0.05	1.55±0.05	0.45±0.10
LRJ03	1.10±0.05	1.90±0.05	8.00±0.10	1.75±0.05	3.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	1.55±0.05	0.60±0.03
LRJ05	1.63±0.05	2.4±0.05	8.00±0.10	1.75±0.05	3.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	1.55±0.05	0.75±0.05
LRJ06	1.90±0.15	3.50±0.20	8.00±0.20	1.75±0.10	3.50±0.05	4.00±0.10	4.00±0.05	2.00±0.05	1.50+0.1/-0	0.85±0.10

Embossed Plastic Tape Specifications



Type	A (mm)	B (mm)	W (mm)	E (mm)	F (mm)	P <sub>0</sub> (mm)	P <sub>1</sub> (mm)	P <sub>2</sub> (mm)	ΦD <sub>0</sub> (mm)	T (mm)
LRJ10	2.80±0.10	5.50±0.20	12.0±0.30	1.75±0.10	5.5±0.05	4.00±0.10	4.00±0.10	2.00±0.05	1.50+0.1, -0	1.2 <sup>+0</sup>

**Recommend Land Pattern**



Type	A (mm)	B (mm)	C (mm)
LRJ02	0.5	0.65	0.5
LRJ03	0.5	1.0	0.9
LRJ05	0.8	1.3	1.3
LRJ06	2.00	0.90	1.60
LRJ10	3.80	0.90	2.80