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Data Sheet

Customer:	
Product:	Low Ohm (Metal Strip) Chip Resistor – LRP Series
Size:	2512
Issued Date:	15-Jul-16
Edition:	REV.A3

RoHS Compliant

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15-Jul-16	15-Jul-16	15-Jul-16		
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Low Ohm (Metal Strip) Chip Resistor- LRP Series

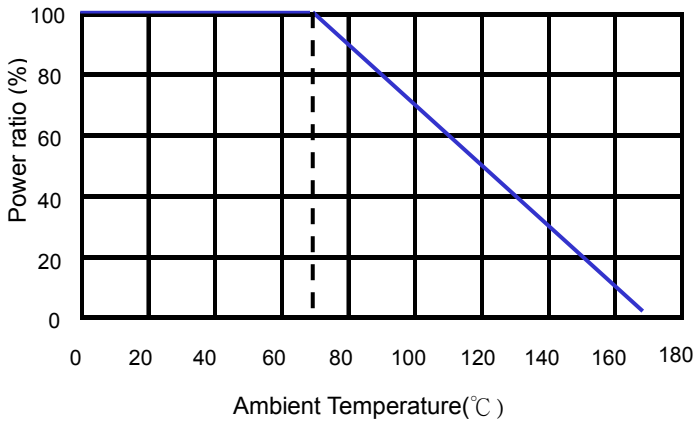
■Features

－High power rating up to 3 Watts
－Low TCR down to ±50 PPM/°C
－Resistance values from 7m to 100m ohm
－Customized resistance available

■Applications

－NB (for Power Management)
－MB (for Power Management)
－SWPS (DC-DC Converter, Charger, Adaptor)
－Monitor (for Power Management)

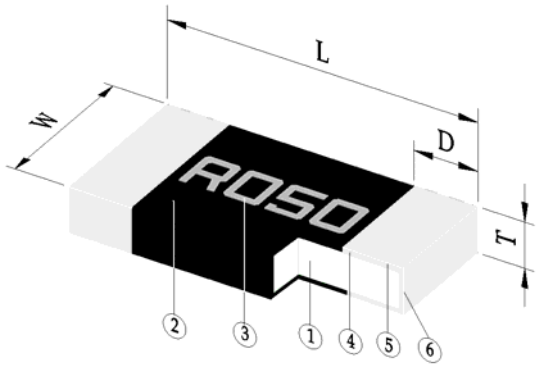
■Derating Curve



■Part Numbering

LRP	12	F	T	D	S	R015
Product Type	Dimensions (L×W)	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Power Rating	Resistance
	12: 2512	D: ±0.5% F: ±1% J: ±5%	T: Taping Reel	D: ±50 W: ±75	R: 3W S: 2W T: 1W	R015: 0.015Ω R050: 0.05Ω

■Construction



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

■Dimensions

Type	Size (Inch)	L (mm)	W (mm)	T (mm)	D (mm)
LRP12	2512	6.40±0.25	3.20±0.25	0.70±0.20	0.90±0.30

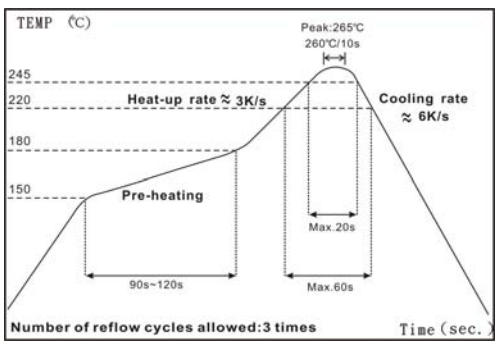
■Electrical Specifications

Item / Type	Power Rating at 70°C	Operating Temp. Range	Resistance Range (mΩ)			TCR (PPM/°C)
			±0.5%	±1%	±5%	
LRP12 (2512)	1W, 2W, 3W	-55 ~ +170°C	7, 8, 9, 10, 12, 15, 18, 20, 22, 25, 30, 33, 35, 39, 40, 47, 50, 60, 68, 70, 75, 80, 82, 90, 91, 100			±75
			15, 18, 20, 22, 25, 30, 33, 35, 39, 40, 47, 50, 60, 68, 70, 75, 80, 82, 90, 91, 100			±50

Operating Current =√(P/R) , Operationg Voltage=√(P*R)

■ Viking is capable of manufacturing the optional spec based on customer's requirement.

■ Soldering Condition(Reflow soldering only)



IR Reflow Soldering

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

(2) Time of soldering iron at maximum temperature point 410°C：5s

■Environmental Characteristics

Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	**IEC60115-1 4.8** **JIS-C-5201-1 4.8** -55°C~+125°C, 25°C is the reference temperature
Short Time Overload	±1.0%	**IEC60115-1 4.13** **JIS-C-5201-1 4.13** 5*rated power for 5 seconds
Insulation Resistance	≥10G	**IEC60115-1 4.6** **JIS-C-5201-1 4.13** 100V DC for 1 minute
Endurance	±1.0%	**IEC60115-1 4.25** **JIS-C-5201-1 4.25.1** 70±2°C, rated power for 1000 hrs with 1.5 hrs "ON" and 0.5 hr "OFF"
Biased Humidity	±1.0%	**MIL-STD-202 Method 103** 1000 hrs 85°C/85%RH 10% of operating power
Dry Heat	±1.0%	**IEC60115-1 4.23.2** **JIS-C-5201-1 4.23.2** at +170°C for 1000 hrs
Bending Strength	±1.0%	**JIS-C-5201-1 4.33** **IEC-60115-1 4.33** Bending width 2mm once for 5 seconds
Solderability	95% min. coverage	**JIS-C-5201-1 4.17** **IEC-60115-1 4.17** 245±5°C for 3 seconds
Resistance to Soldering Heat	±0.5%	**JIS-C-5201-1 4.18** **IEC-60115-1 4.18** 260±5°C for 10 seconds
Rapid Change of Temperature	±1.0%	**JIS-C-5201-1 4.19** **IEC-60115-1 4.19** -55°C to +155°C, 5 cycles
Low Temperature Storage	±1.0%	**IEC60115-1 4.23.4** **JIS-C-5201-1 4.23.4** at -55°C for 2 hrs

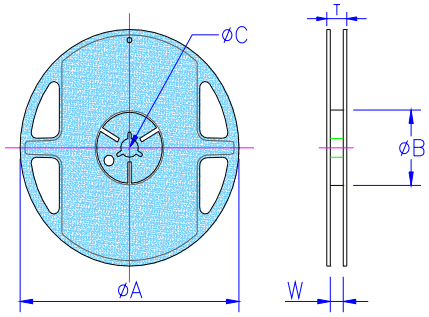
RCWV(Rated Continuous Working Voltage)= $\sqrt{}$(P*R) or Max. Operating Voltage whichever is lower.

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

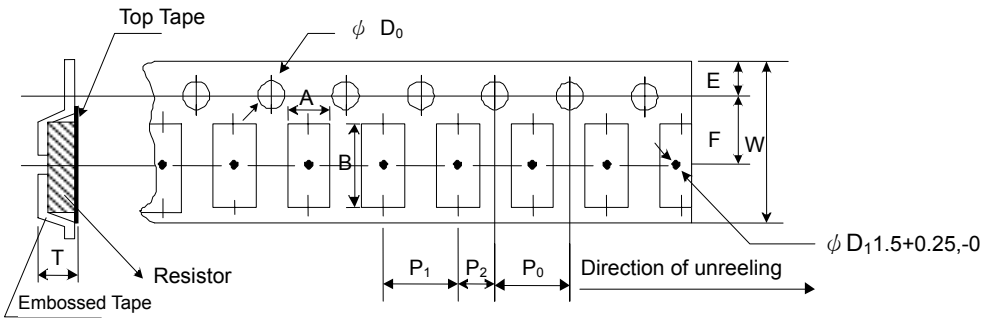
■Packaging

Reel Specifications & Packaging Quantity

Type	Packaging Quantity		Tape Width	Reel Diameter	ΦA (mm)	ΦB (mm)	ΦC (mm)	W (mm)	T (mm)
LRP12	Embossed	4K	12mm	7 inch	178.5+/-1.5	60±1.0	13.0±0.5	13.0±1.0	15.5±0.5

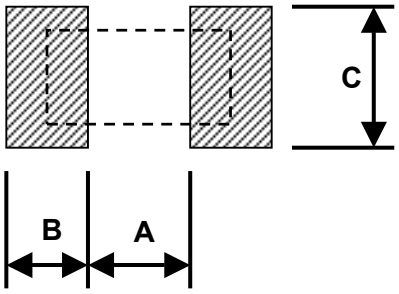


Embossed Plastic Tape Specifications



Type	A (mm)	B (mm)	W (mm)	E (mm)	F (mm)	P0 (mm)	P1 (mm)	P2 (mm)	ΦD0 (mm)	T (mm)
LRP12	3.50±0.10	6.70±0.10	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	1.20+0

■Recommend Land Pattern



Type	A (mm)	B (mm)	C (mm)
LRP12	4.00	2.00	3.50

＊FR4 copper board, 100μm of copper pad thickness

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version A	Apr 30, 2015	-	- First issue of this specification
Version A1	Jul 30, 2015	-	- Add 0.5% Resistance Range
Version A2	Nov 27, 2015	-	- Change TCR75 ppm Resistance Range 10mR~100mR →7mR~100mR
Version A3	Jul 15, 2016	-	- Remove Material Description - Modify Storage Temperature