



## Ultra Low Ohm (Metal Strip) Chip Resistor



### Features

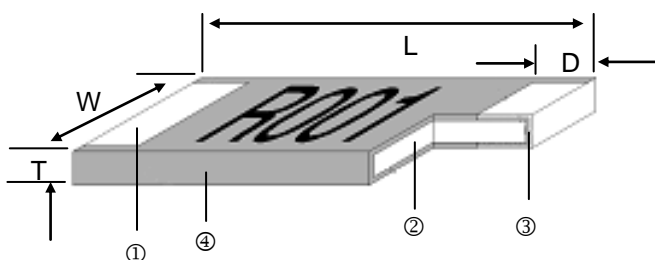
- High power rating up to 3 Watts
- Low TCR down to  $\pm 50$  PPM/ $^{\circ}$ C
- Resistance values from 0.5m to 10m ohm
- Customized resistance available
- Wide range package sizes 1206 / 2010 / 2512
- AEC-Q200 Compliance (only LR12 Black)

### Applications

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

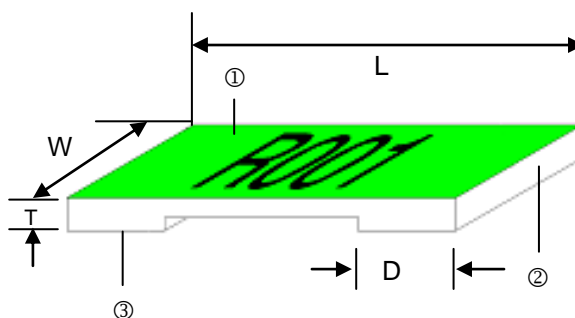
### Construction & Dimension

2512



Black – Wave or IR reflow soldering

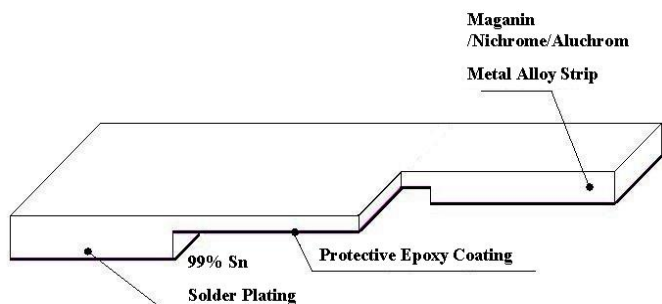
① Solder Plating	③ Barrier Layer
② Alloy Plate	④ Overcoat



Green – IR reflow soldering only

① Overcoat	③ Solder Plating
② Alloy Plate	

1206 & 2010



Type	Material
0M50~ R003	Manganese, Copper
3M5 ~ R010	Aluminum, Iron, Chromium



## Dimensions

Unit: mm

Part No.	Resistance (m )	L	W	T	D	Weight (g) (1000pcs)
LR06□TF0M50	0.5	3.20±0.25	1.60±0.10	0.60±0.20	1.35±0.25	22.6
LR06□TD0M75	0.75	3.20±0.25	1.60±0.10	0.60±0.20	1.23±0.25	22.6
LR06□T□□□□□	1.0 , 3.5, 4.0 , 5.0 , 6.0	3.20±0.25	1.60±0.10	0.60±0.20	1.10±0.25	22.6
LR06□T□□□□□	2.0 , 3.0 , 10	3.20±0.25	1.60±0.10	0.60±0.20	0.60±0.25	22.6
LR06□T□□□□□	1.2 , 1.5 , 7.0 , 8.0 , 9.0	3.20±0.25	1.60±0.10	0.60±0.20	0.90±0.25	22.6
LR10□TEA0M50	0.5	5.08±0.25	2.54±0.15	0.60±0.20	2.17±0.25	42.3
LR10□TDA0M75	0.75	5.08±0.25	2.54±0.15	0.60±0.20	2.04±0.25	42.3
LR10□TDA□□□□	1.0 , 1.5	5.08±0.25	2.54±0.15	0.60±0.20	1.84±0.25	42.3
LR10□TDA□□□□	2.0, 6.0 , 7.0 , 8.0	5.08±0.25	2.54±0.15	0.60±0.20	1.54±0.25	42.3
LR10□TDA□□□□	3.0 , 3.5	5.08±0.25	2.54±0.15	0.60±0.20	1.04±0.25	42.3
LR10□TDA□□□□	4.0 , 5.0, 5.5	5.08±0.25	2.54±0.15	0.60±0.20	1.84±0.25	42.3

## Part Numbering



### Standard Electrical Specifications

Item Part No.	Power Rating at 70°C	Operating Temp. Range	Resistance Range (m )			TCR (PPM/°C)
			±1%	±3%	±5%	
LR06□TF0M50	1W	-55°C ~ +170°C	0.5			±200
LR06□TD□□□□	1W		0.75 - 10			±50
LR12□TD□□□□	1W		0.5, 0.75, 1, 1.5, 2			±50
LR12□TW□□□□	1W		6, 6.5, 7			±75
LR12□TE□□□□	1W		4, 5, 10			±100
LR12□TK□□□□	1W		2.5, 3			±150

### High Power Rating Electrical Specifications

Item Part No.	Power Rating at 70°C	Operating Temp. Range	Resistance Range (m )			TCR (PPM/°C)
			±1%	±3%	±5%	
LR10□TEA0M50	1.5W	-55°C ~ +170°C	0.5			±100
LR10□TDA□□□□	1.5W		0.75 - 10			±50
LR12□TDS□□□□	2W		0.5, 0.75, 1, 1.5, 2			±50
LR12□TWS□□□□	2W		6, 6.5, 7			±75
LR12□TES□□□□	2W		4, 5, 10			±100
LR12□TKS□□□□	2W		2.5, 3			±150
LR12□TDR□□□□	3W		0.5, 0.75, 1, 1.5, 2			±50
LR12□TDS□□□□G	2W		6.5, 7, 8, 9, 10			±50
LR12□TDB□□□□G	2.5W		4, 4.5, 5, 6			±50
LR12□TDR□□□□G	3W		1, 1.5, 2, 2.5, 3, 3.5			±50
LR12□TER□□□□G	3W		0.5, 0.75			±100

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

Viking has the ability of manufacture following options based on customer's requirement.

### Resistance codes example

#### Resistance (3Marking)

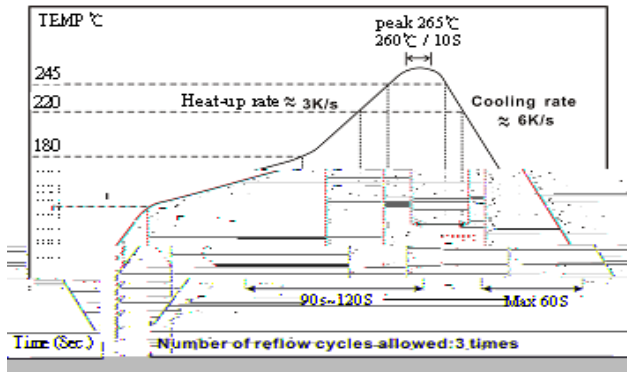
Resistance	0.5mΩ	0.75mΩ
Codes	M50	M75

#### Resistance (4Marking)

Resistance	1mΩ	2mΩ	7mΩ	10mΩ
Codes	R001	R002	R007	R010



**Reflow**



**Green coating "Reflow Air Convection" is available  
Green coating can't be working with wave soldering bath**

**Environmental Characteristics**

Item	Requirement		Test Method
	Black coating	Green coating	
Temperature Coefficient of Resistance (T.C.R.)	As Spec.		<b>MIL-STD-202 Method 304</b> +25°C ~125°C, 25°C is the reference temperature
Short Time Overload	±0.5%	±1%	<b>JIS-C-5201-1 5.5</b> 5*rated power for 5 seconds
Endurance	±1%	±1%	<b>MIL-STD-202 Method 108A</b> 70±2°C, RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5 hr "OFF"
Dry Heat	±1%	±1%	<b>JIS-C-5201-1 7.2</b> at +170°C for 1000 hrs
Solderability	95% min. coverage		<b>MIL-STD-202 Method 208H</b> 245±5°C for 3 seconds
Resistance to Soldering Heat	±0.5%	±1%	<b>MIL-STD-202 Method 210E</b> 260±5°C for 10 seconds
Thermal Shock	±0.5%	±1%	<b>MIL-STD-202 Method 107G</b> -55°C ~ 150°C, 100 cycles

\*\*Green coating can't be work with wave soldering bath.

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

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

**Derating Curve**

