

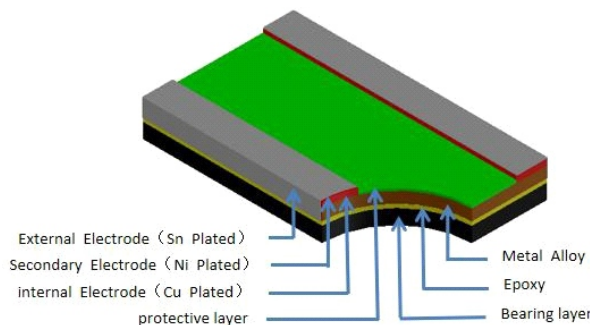
● Features

- Metal Alloy Normal Terminal Low-Resistance Resistor
- Low thermal EMF
- Low TCR
- Low inductance

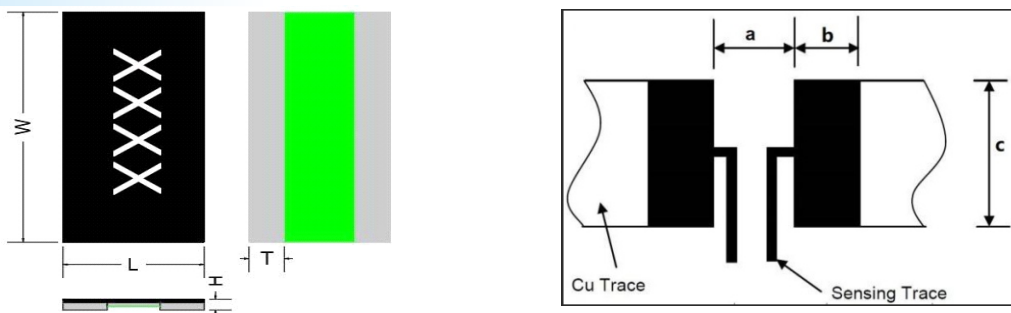
● Application

- Battery pack
- Inverter/Converter
- Consumer electronics
- Notebook

● Construction



● Dimensions



Type	Size (mm)	Power (W)	Resistance Range (mΩ)	L	W	H	T	a	b	c
LRL	0508	1	1mΩ	1.26 ± 0.20	2.06 ± 0.20	0.40	0.33 ± 0.15	0.5	0.9	2.3
	0508		1.5~10mΩ	1.26 ± 0.20	2.06 ± 0.20	0.35	0.33 ± 0.15	0.5	0.9	2.3
	0612	1	1mΩ	1.60 ± 0.20	3.20 ± 0.20	0.40	0.40 ± 0.15	0.8	1.0	3.5
	0612		1.5~10mΩ	1.60 ± 0.20	3.20 ± 0.20	0.35	0.40 ± 0.15	0.8	1.0	3.5

● Ordering Information

Example

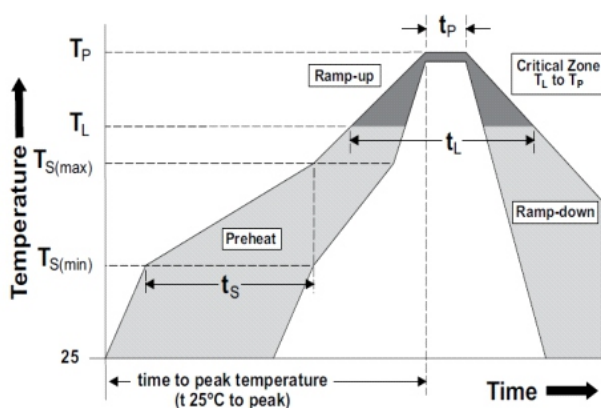
LRL 0508 1W J 1mΩ、 E
 (1) (2) (3) (4) (5) (6)
 Type Size (inch) Reatd Power Resistance Tolerance Reisittance Package

- (1)Type:LRL
- (2)Size:0508、 0612
- (3)Reatd power:1W
- (4)Resistance Tolerance: D= ± 0.5%,F= ± 1%, J= ± 5%
- (5)Reisittance:R001=1mΩ,R020=20mΩ,
- (6)Package:E= Embossed taping

Power And Resistance etc

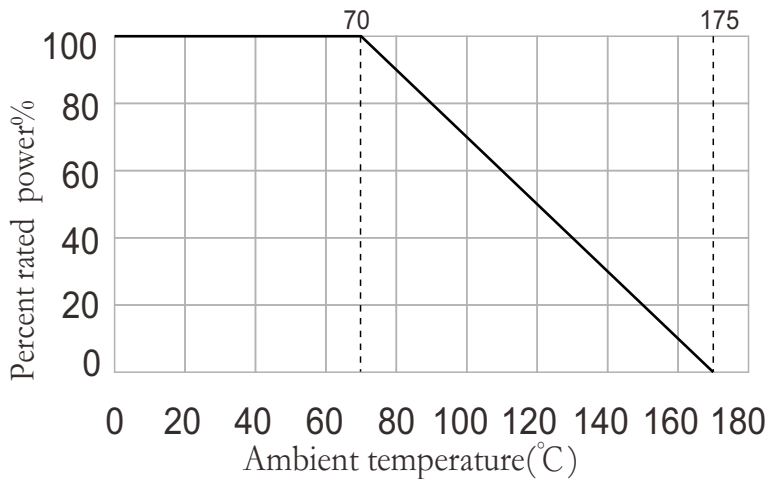
Item Type	Power (W)	Resistance Range (mΩ)	Operating Temp. Range	TCR (PPM/°C)	Tolerance (%)	Rating Current
LRL (0508)	1W	1-2	-55~+150°C	± 75	D = ± 0.5% F = ± 1% J = ± 5%	(P/R)1/2
		3-25		± 100		
LRL(0612)	1W	1-2		± 70		
		3-10		± 50		

IR Reflow-Soldering Profile



Reflow Condition		Pb - Free assembly
Pre heat	- Temperature Min ($T_s(min)$)	150°C
	- Temperature Max ($T_s(max)$)	200°C
	- Time (Min to Max) (t_s)	60 - 120 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		5°C /second max
$T_s(max)$ to T_L - Ramp-up Rate		5°C /second max
- Temperature (T_L) (Liquidus)		217°C
- Time (t_L)		60 - 150 seconds
Peak Temperature (T_P)		260°C
Time within 5°C of actual peak Temperature (t_p)		10 - 30 seconds
Ramp-down Rate		6°C /second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Wave Soldering		260°C , 10 seconds max.
Hand Soldering		350°C , 5 seconds max.

Derating Curve



Performance

Item	Requirement	Test Method													
Temperature Coefficient of Resistance (T.C.R.)	$TCR = (R-R_0)/R_0(T_2-T_1) \times 10^6$ R0: resistance of room temperature R: resistance of 125°C ; T1: Room temperature T2: Temperature at 125°C	Refer to Spec													
Short Time Overload	Applied Overload for 5 seconds , then measure its resistance variance rate. (Test condition refer to below)	≤ ± 1.0%													
	<table border="1"> <thead> <tr> <th>Type</th> <th>Resistance(mΩ)</th> <th>Power rating</th> </tr> </thead> <tbody> <tr> <td rowspan="2">0508</td> <td>1 ≤ R ≤ 10</td> <td>4 times</td> </tr> <tr> <td>10 < R ≤ 25</td> <td>3 times</td> </tr> <tr> <td rowspan="2">0612</td> <td>1 ≤ R ≤ 10</td> <td>3 times</td> </tr> <tr> <td>9 < R ≤ 10</td> <td>3 times</td> </tr> </tbody> </table>		Type	Resistance(mΩ)	Power rating	0508	1 ≤ R ≤ 10	4 times	10 < R ≤ 25	3 times	0612	1 ≤ R ≤ 10	3 times	9 < R ≤ 10	3 times
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	0508		1 ≤ R ≤ 10	4 times											
10 < R ≤ 25		3 times													
0612	1 ≤ R ≤ 10	3 times													
	9 < R ≤ 10	3 times													
Resistance to Soldering Heat	260°C ± 5°C time: 10sec ± 0.5sec	≤ ± 0.5%													
Solderability	Temperature of Solder: 245 ± 5°C Dipping time: 3 ± 1s	Solder coverage over 95%													
Temperature Cycling	-55°C (15min)/+150°C (15min), 300 cycles	≤ ± 1.0%													
Low temperature Storage	-55°C ± 2°C for 96hours, No power	≤ ± 1.0%													
High Temperature Storage	150°C for 1000hours, No power	≤ ± 1.0%													
Bias Humidity	+85°C , 85% RH, 10% bias, 1000hours	0508: 1~8mR, ΔR ≤ ± 1% 9~10mR, ΔR ≤ ± 2% 0612: 1.5~10mR, ΔR ≤ ± 1% 11~20mR, ΔR ≤ ± 2%													
Vibration	The frequency varies from 10Hz to 55Hz and return to 10HZ, shall be transferred in 1 min. Amplitude: 1.5mm, 3 directions, and 12 hours	≤ ± 0.5%													
Operational life	70°C ± 2°C, 1000 hours, at rated power 1.5 hours "ON, 0.5 hours "OFF"	1206: 1~9mR , ΔR ≤ ± 1% 10~14mR , ΔR ≤ ± 3% 15~20mR , ΔR ≤ ± 4% 0805: 1~10mR, ΔR ≤ ± 1% 11~20mR, ΔR ≤ ± 3%													
Moisture resistance	MIL-STD-202, method 106, No power, 7b not required	≤ ± 0.5%													