	Lead-Free Current Sensing Resistors LRB Series (Halogen-Free)	Document No	NLRB-25-002A
		Issued date	2018/4/2
		Page	1/7

苏州利昇达电子科技有限公司

SUZHOU NICETY ELECTRONIC TECHNOLOGY CO.,LTD.

<p style="font-size: 24px; margin: 0;">规格承认书</p> <p style="font-size: 24px; margin: 0;">Approval sheet</p>

产品名称:	金属电流感测器
Name of product:	Lead-Free Current Sensing Resistors
产品规格:	LRB2512 系列
Size of product:	LRB2512 Series

江苏省苏州市吴江区松陵镇友谊工业区花园路88号

电话: 0512-6340 0696 传真: 0512-6340 0696



Lead-Free Current Sensing Resistors

LRB Series (Halogen-Free)

Document No	NLRB-25-002A
Issued date	2018/4/2
Page	2/7

1. Scope:

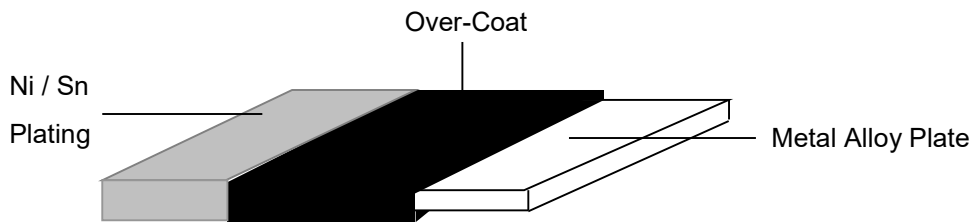
This specification applied to the products of Lead-Free current sensing resistor of metal foil for Lead-Free LRA series manufactured by SUZHOU NICETY ELECTRONIC TECHNOLOGY CO.,LTD..

2. Type Designation:

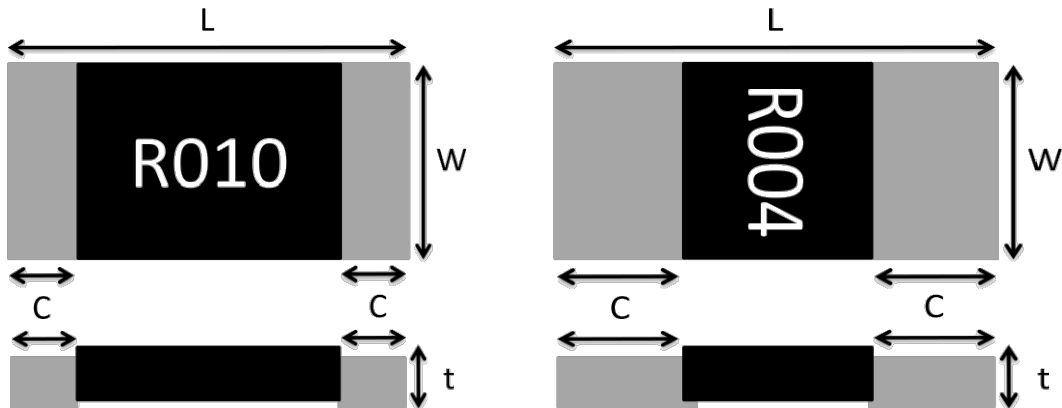
<u>LRB</u> Item	<u>2512</u> Series	<u>E</u> Power rating	<u>F</u> Resistance tolerance	<u>R010</u> Resistance
	2512	C=1W D=1.5W E=2W G=3W	F: ±1% G: ±2% J: ±5%	e.g : R010=10m Ω R050=50m Ω R100=100m Ω

3. Construction and Dimension :

3.1 Construction:



3.2 Dimension:



UNIT: mm

Style	L	W	C	t	Material
LRB2512	6.4 ± 0.2	3.2 ± 0.2	2.0 ± 0.2 (R < 2m Ω)	0.7 ± 0.20	Metal: Alloy Over Coating: molding Compound UL-94-0 grade
			0.9 ± 0.2 (R ≥ 2m Ω)		



Lead-Free Current Sensing Resistors
LRB Series
(Halogen-Free)

Document No	NLRB-25-002A
Issued date	2018/4/2
Page	3/7

4. Features:

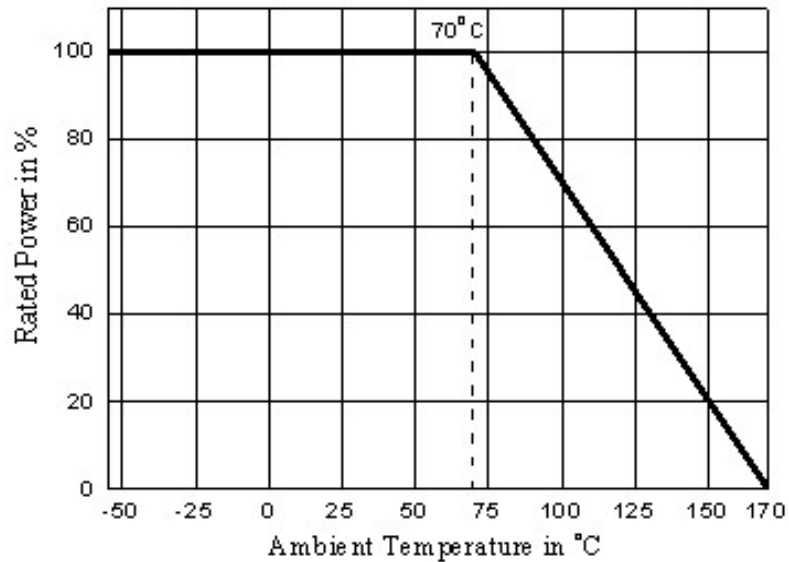
Type	LRB2512
Power Rating	1 mΩ ≤ R ≤ 100mΩ (1W、1.5 W、2 W、3W) 100 mΩ < R ≤ 500mΩ (1W、1.5 W、2 W)
Resistance Value	1 mΩ ≤ R ≤ 500mΩ
Operation Temperature Range	-55°C ~ +170°C
Temperature Coefficient of Resistance	±50ppm/°C
Tolerance	±1%, ±2%, ±5%
Insulation Resistance	Over 100MΩ
Maximum Working Voltage(V)	(P*R) ^{1/2}

Note: 2&3watts total Solder pad and trace size of 300mm

5. Reliability Tests :

Test Items	Condition of Test	Test Limits
Thermal shock	1000Cycle (-55 °C to 125), Measurement at 24hrs after test conclusion.	< ±0.5%
Short time overload	5 X rated power for 5s	< ±0.5%
Low temperature operation	-55 °C for 45 min	< ±0.5%
High Temperature Exposure(Storage)	T=125°C, 1000hrs, Measurement at 24hrs after test conclusion.	< ±1%
Mechanical Shock	100g's , Normal duration is 6ms , half sine shock pluse	< ±0.5%
Biased Humidity	10% Rated voltage at 85 °C, RH:85% , 1000Hrs, Measurement at 24hrs after test conclusion.	< ±0.5%
Load life	1000 h at +70 °C, 1.5 h "ON", 0.5 h "OFF"	< ±1%
Board Flex	Min 2mm deflection , 60sec.	< ±0.5%
Resistance to Soldering Heat	T=260+/-5°C solder, 10+/-1 sec dwell	< ±0.5%
Temperature Coefficient of Resistance	+25~125°C	Refer 4
Flammability	V-0 or V-1 are acceptable, Electrical test not required	

5.1 Derating Curve



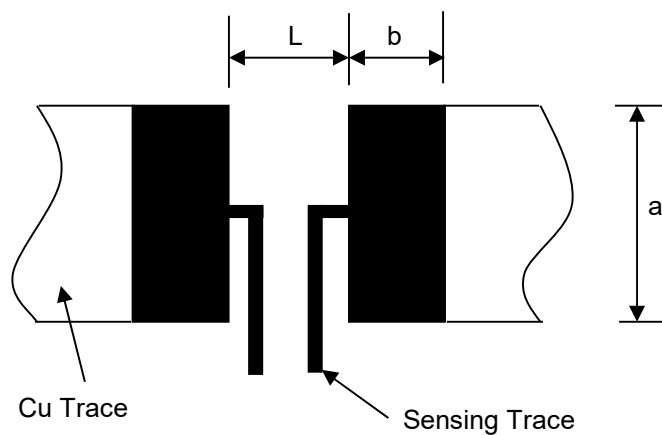
5.2 Rated Current

The rated voltage is calculated by the following formula:

$$I = \sqrt{P \div R}$$

I: Rated Current(A)
P: Rated Power(W)
R: Resistance Value(Ω)

6. Recommended Solder Pad Dimension



Resistance Range (Ω)	a	b	L
R ≥ 0.002	4.0	2.1	4.1
R < 0.002	4.0	3.1	1.3

Unit: mm



Lead-Free Current Sensing Resistors
LRB Series
(Halogen-Free)

Document No	NLRB-25-002A
Issued date	2018/4/2
Page	5/7

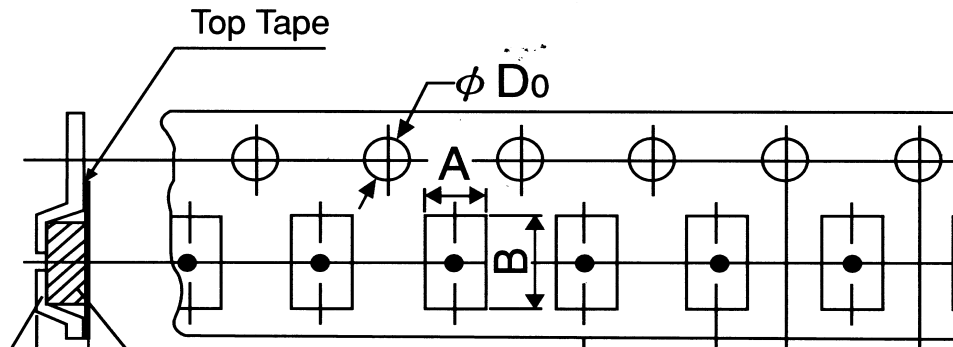
7. Number of Package:

4000 Pieces / package

8. Label:

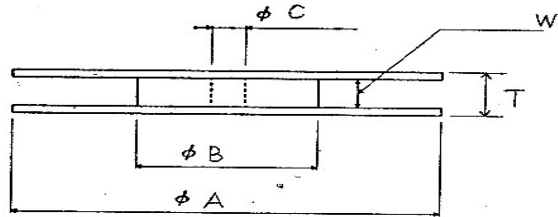
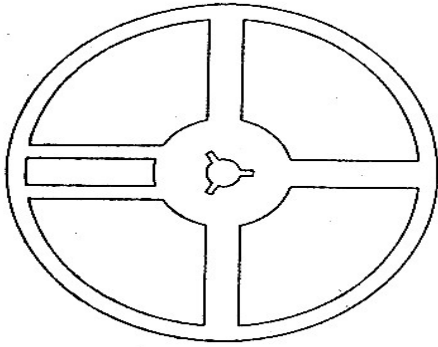


9. Taping



Packing	Type	A	B	W	F	E	P ₁	P ₂	P ₀	D ₀	T
Emboss	LRB2512	3.6±0.2	6.9±0.2	12.±0.2	5.5±0.05	1.75±0.1	4.0±0.1	2.0±0.05	4.0±0.05	ψ 1.5 (+0.1/-0)	1.2±0.15

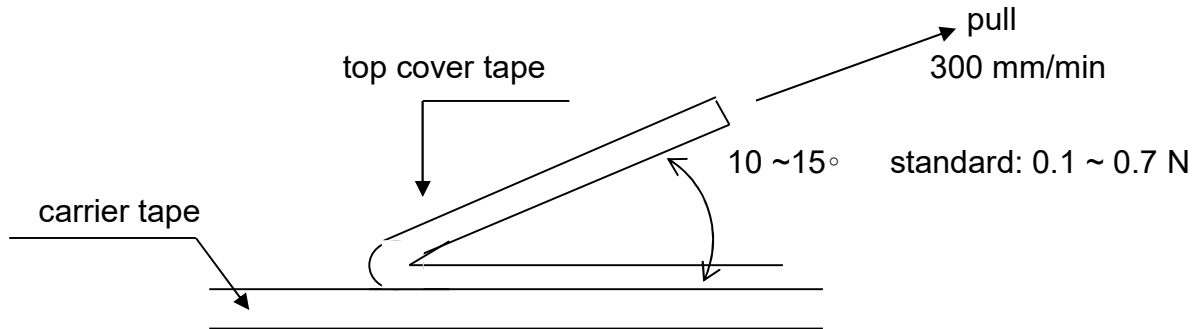
10. Reel Specification



Series	ψ A	ψ B	ψ C	W	T
LRA 2512	180 ⁺⁰ ₋₃	60 ± 1.0	13.0 ± 1.0	13.0 ± 1.0	15.4 ± 2.0

11. Peeling Strength of Top Cover Tape

Test Condition: 0.1 to 0.7 N at a peel-off speed of 300 mm / min.



12. Storage Conditions:

Temperature: 5°C~35°C, Humidity: 40%~75%

13. Shelf Life:

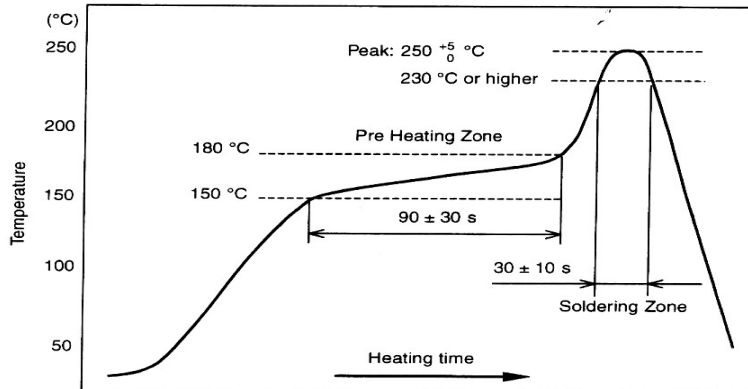
2 years from manufacturing date.



Lead-Free Current Sensing Resistors
LRB Series
(Halogen-Free)

Document No	NLRB-25-002A
Issued date	2018/4/2
Page	7/7

14. Recommend IR – Reflow profile : (solder : Sn96.5 / Ag3 / Cu0.5)



Peak : $260 \begin{matrix} +5 \\ -0 \end{matrix} \text{ °C} , 5 \text{ sec}$

Pre – heat Zone : 150 to 180 °C, 90±30 sec

Soldering Zone : 230°C or higher , 30±10 sec

Iron Solder: $350 \pm 10 \text{ °C} , 3+1/-0 \text{ sec}$

15. ECN

Engineering Change Notice: The customer will be informed with ECN if there is significant modification on the characteristics and materials described in Approval Sheet.

16. Manufacturing Country & City :

SUZHOU NICETY ELECTRONIC TECHNOLOGY CO.,LTD. (China – Su Zhou)

Tel :(+86) 512-63433696 Fax : (+86) 512-63433696