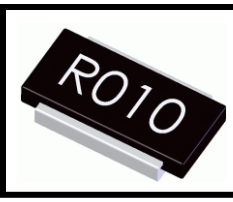
	Lead-Free Current Sensing Resistors (RLN Series) (Halogen-Free)		Document No	TRLN-370S019B
			Issued date	2012/12/13
			page	1/6

1. Scope

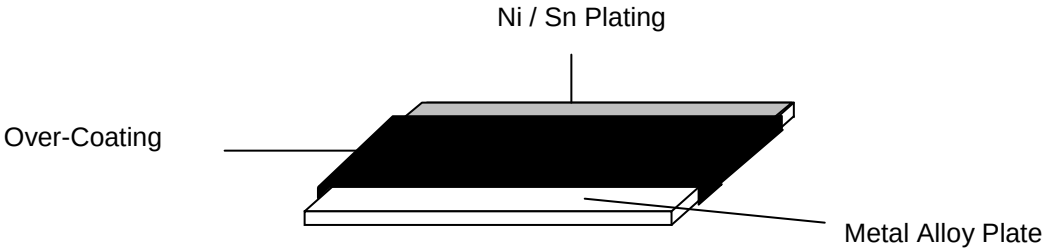
This specification applied to the products of Lead-Free current sensing resistor of metal foil for Lead-Free RLN series manufactured by TA-I TECHNOLOGY CO.,LTD.

2. Type Designation

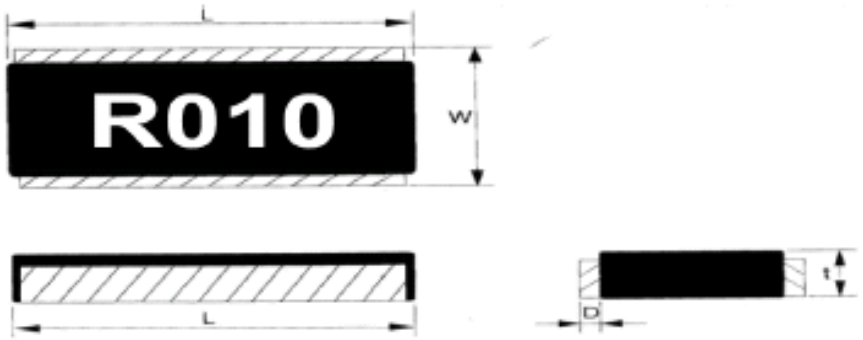
RLN	37	F	E	C	R010
Item	Series No.	Resistance tolerance	Packaging	Power rating	Resistance
	37:3720	F:±1% G:±2% J:±5%	E: Embossed Tape	S=1/2W C= 1 W	e.g: R010=10mΩ

3. Construction and Dimension

3.1 Construction:



3.2 Dimension:



Unit: mm

Style	L	W	D	t	Material
RLN	3.75±0.3	2.3±0.2	0.5±0.2	0.7±0.20	Strip： Alloy Over Coating：molding Compound UL-94V-0 grade

4. Features

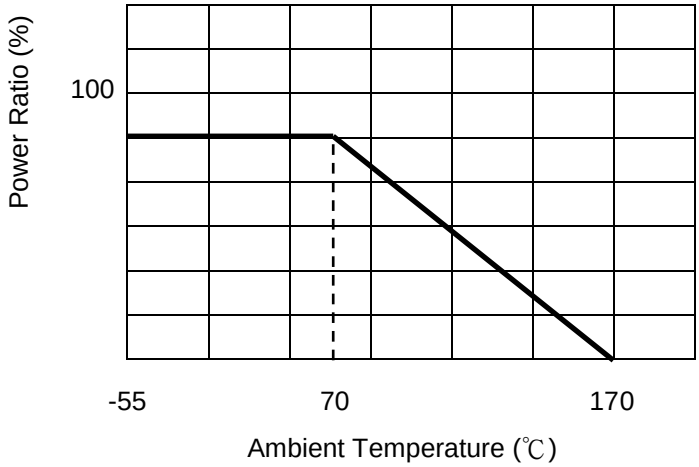
Type	RLN
Power Rating	1/2 W&1W *
Resistance Value	1mΩ~30mΩ
Operation Temperature Range	-55℃~+170℃
Temperature Coefficient of Resistance	100ppm/℃
Tolerance	±1% , ±2% , ±5%
Insulation Resistance	Over 100MΩ
Maximum Working Voltage(V)	$(P*R)^{1/2}$

Note*:1 Watts with total solder pad and trace size of 300mm^2

5. Reliability Tests

Test Items	Reference standard	Condition of Test	Test Limits
Temperature Coefficient of Resistance	IEC60115-1 4.8 JIS C 5201-1 4.8	+25℃ ~ +125℃	Refer 4.0
Load Life	IEC60115-1 4.25.1 JIS C 5201-1 4.25.1	1000hours at rated power, 70℃, 1.5hours “ON”, 0.5hour “OFF”	±1%
Short Time Overload	IEC60115-1 4.13 JIS C 5201-1 4.13	5 X rated power for 5s	±0.5% (For 40-100 mΩ rated power x 2.5 for 5 s)
Moisture no Load	IEC60115-1 4.24.2.1a) JIS C 5201-1 4.24.2.1a)	85℃, 85%RH, 1000hrs	±0.5%
Temperature cycle	IEC60115-1 4.19 JIS C 5201-1 4.19	-55℃ & +155℃, 300cycle, 15min per extreme condition	±0.5%
Resistance to Soldering Heat	IEC60115-1 4.18 JIS C 5201-1 4.18	260±5℃ for20±1 sec	±0.5%
Solderability	IEC60115-1 4.17 JIS C 5201-1 4.17	245±5℃, 2±0.5sec	At least 95% of surface area of electrode shall be covered with new solder
HighTemperature Exposure	IEC60115-1 4.23.2 JIS C 5201-1 4.23.2	170℃, 1000hrs	±0.5%
Low Temperature Storage	EC60115-1 4.23.4 JIS C 5201-1 4.23.4	-55℃, 1000hrs	±0.5%
Substrate Bending	IEC60115-1 4.33 JIS C 5201-1 4.33	Bending width 2mm	±1.0%
Insulation Resistance	IEC60115-1 4.6 JIS C 5201-1 4.6	100V DC for 1 minute	>100 MΩ

5.1Derating Curve



5.2 Rated Voltage

The rated voltage is calculated by the following fomula:

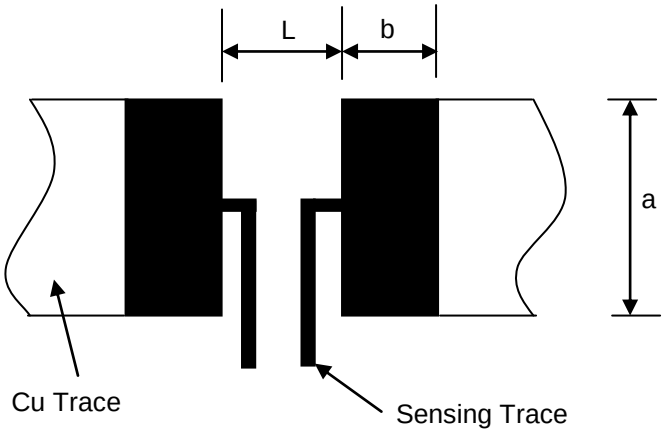
$V=\sqrt{P*R}$

V:Rated Voltage(V)

P:Rated Power(W)

R:Resistance Value(Ω)

6. Recommended Solder Pad Dimension



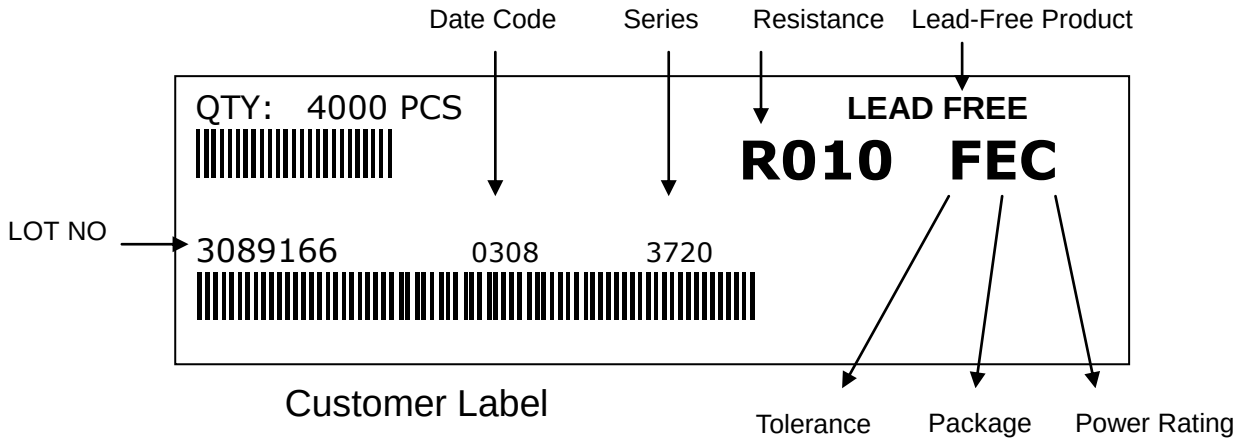
Resistance Range (Ω)	a	b	L
0.001~0.030	4.2	0.8	1.2

Unit: mm

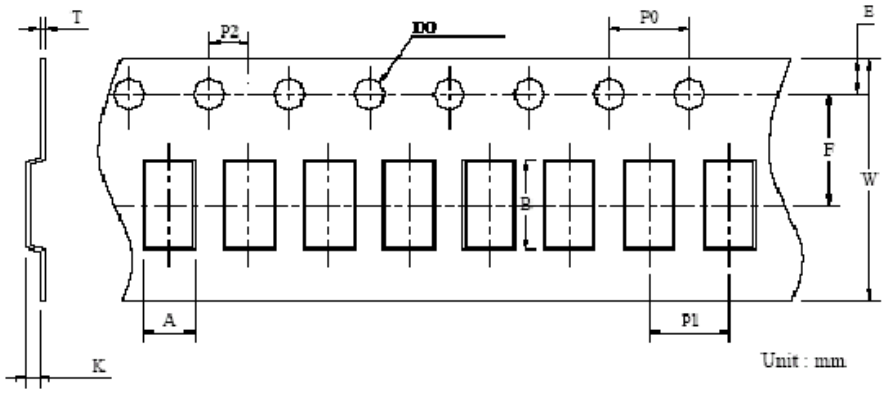
7. Number of Package

4000 Pieces / package

8. Label



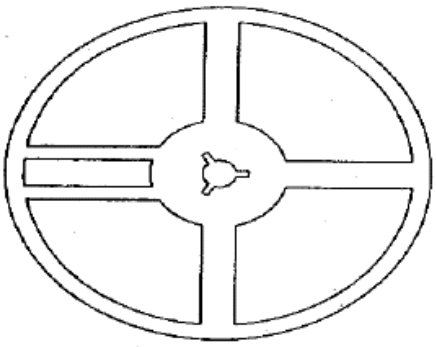
9. Taping

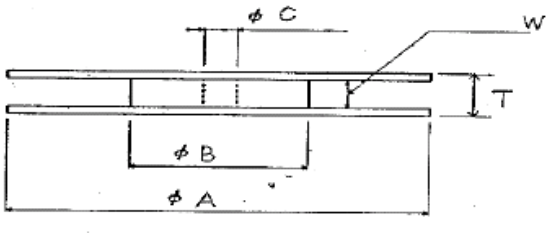


Unit: mm

Packing	A	B	E	F	W	D0	K	T	P0	P1	P2
Emboss	2.6±0.2	4.5±0.2	1.75±0.1	5.5±0.1	12.0±0.2	Φ1.55± 0.05	1.1±0.1	0.3±0.05	4.0±0.1	4.0±0.1	2.0±0.2

10. Reel Specification



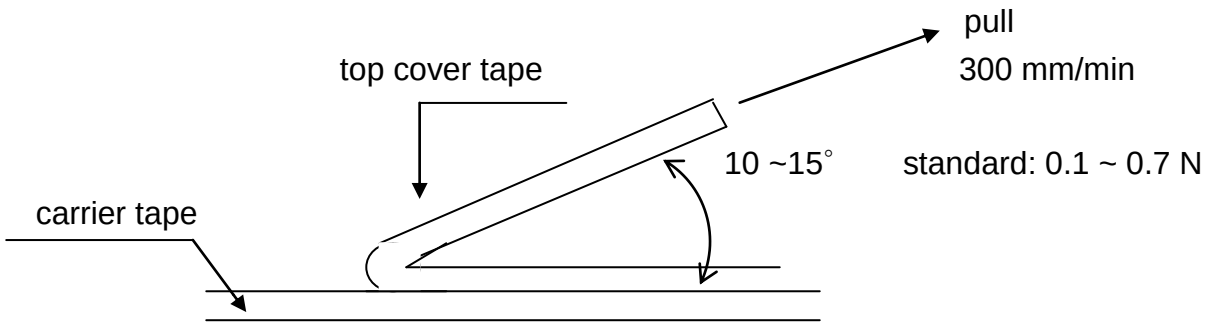


Series	ϕ A	ϕ B	ϕ C	W	T
RLN37	180 $^{+0}_{-3}$	60 ±1.0	13.0±1.0	13.0±1.0	15.4±2.0

Unit:mm

11. Peeling Strength of Top Cover Tape

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



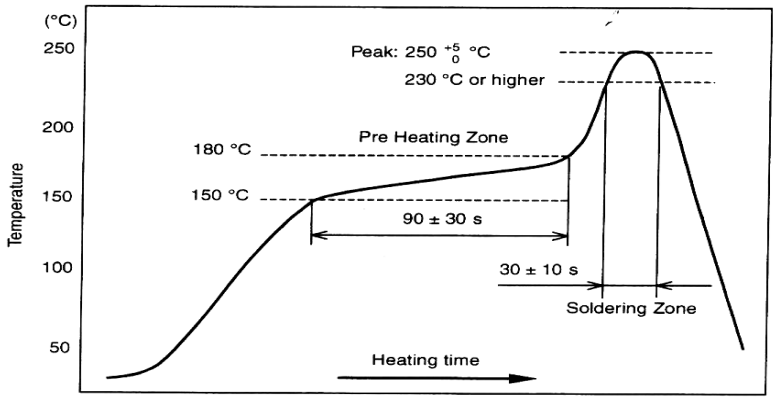
12. Storage Conditions :

Temperature: 5℃~35℃,Humidity:40%~75%

13. Shelf Life :

2 years from manufacturing date.

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



Peak : 250 $^{+5}_{-0}$℃ , 5 sec

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

Soldering Zone : 230℃ or higher , 30±10 sec