



**Lead-Free Current Sensing Resistors (RLN Series)
(Halogen-Free)
AEC-Q 200-Ver D qualified**



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1. Scope

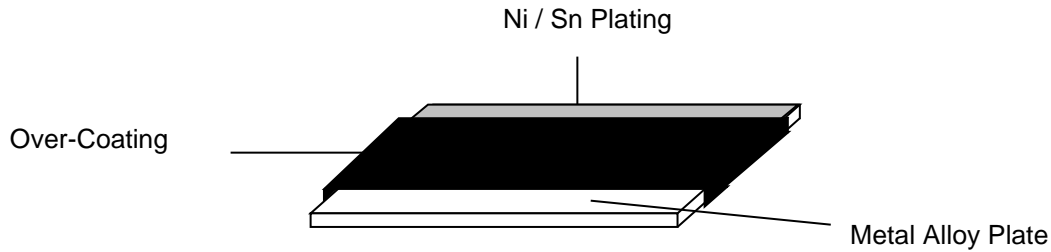
This specification applied to the products of Lead-Free current sensing resistor of metal plate for Lead-Free RLN series manufactured by TA-I TECHNOLOGY CO.,LTD.

2. Type Designation

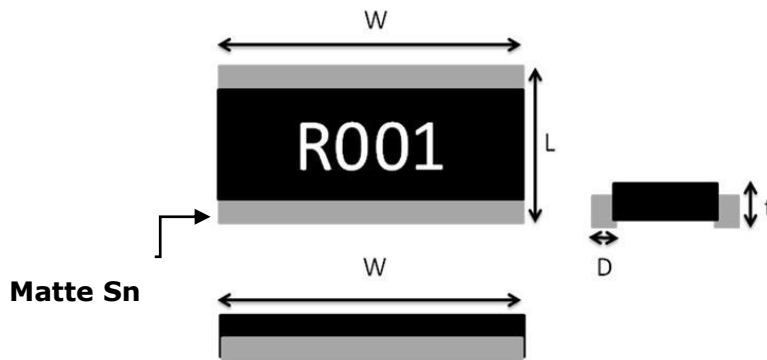
<u>RLN</u> Item	<u>37</u> Series No.	<u>F</u> Resistance tolerance	<u>E</u> Packaging	<u>C</u> Power rating	<u>M</u>	<u>R001</u> Resistance
	37:3720	F:±1% G:±2% J:±5%	E: Embossed Tape	S=1/2W C= 1 W	M=MnCu	e.g: R001=1mΩ

3. Construction and Dimension

3.1 Construction:



3.2 Dimension:



Unit: mm

Style	W	L	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



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4. Features

Type	RLN
Power Rating	1/2 W&1W *
Resistance Value	1mΩ ~10mΩ
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}

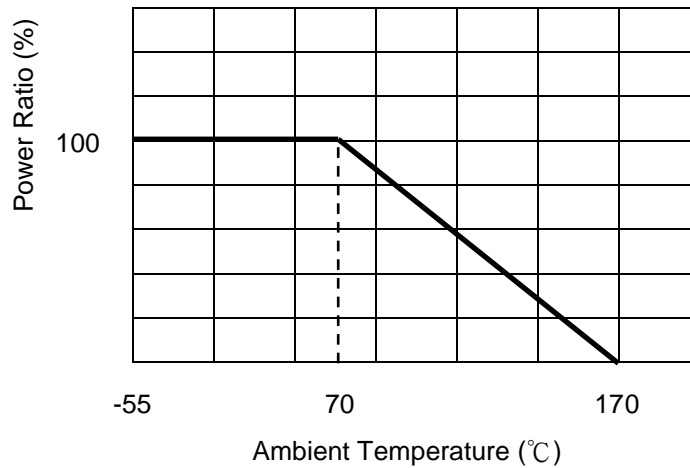
Note*:1 Watts with total solder pad and trace size of 300mm²

5. Reliability Tests

Test Items	Condition of Test	Test Limits
Temperature Coefficient of Resistance	+25 ~ 125°C	Refer 4.0
High Temperature Exposure(Storage)	T=125°C,1000hrs,Measurement at 24hrs after test conclusion.	< ±1%
Low temperature operation	-55 °C for 45 min	< ±0.5%
Temperature Cycling	1000Cycle (-55°C to 125°C),Measurement at 24hrs after test conclusion.	< ±0.5%
Short time overload	5 X rated power for 5s	< ±0.5%
Biased Humidity	10% Rated voltage at 85 °C,RH:85% ,1000Hrs, Measurement at 24hrs after test conclusion.	< ±0.5%
Operation life	1000 h at +70 °C, 1.5 h "ON", 0.5 h "OFF"	< ±1%
Resistance to Soldering Heat	T=260+/-5°C solder,10+/-1 sec dwell	< ±0.5%
Mechanical Shock	100g's , Normal duration is 6ms , half sine shock pluse	< ±0.5%
Resistance to vibration	5g's for 20min.12cycles, 10-2000Hz	<±0.5%
Board Flex	Min 2mm deflection ,60sec.	< ±0.5%
Flammability	V-0 or V-1are acceptable, Electrical test not required	



5.1 Derating Curve



5.2 Rated Current

The rated current is calculated by the following formula:

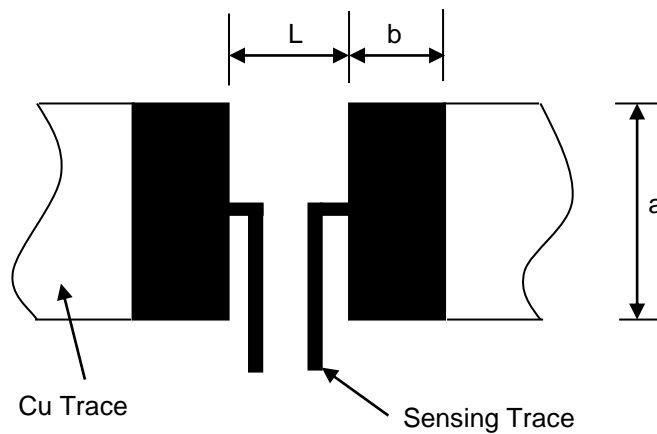
$$I = \sqrt{P \div R}$$

I: Rated Current (A)

P: Rated Power (W)

R: Resistance Value(Ω)

6. Recommended Solder Pad Dimension



Resistance Range (Ω)	a	b	L
0.001~0.010	4.2	0.8	1.2

Unit: mm



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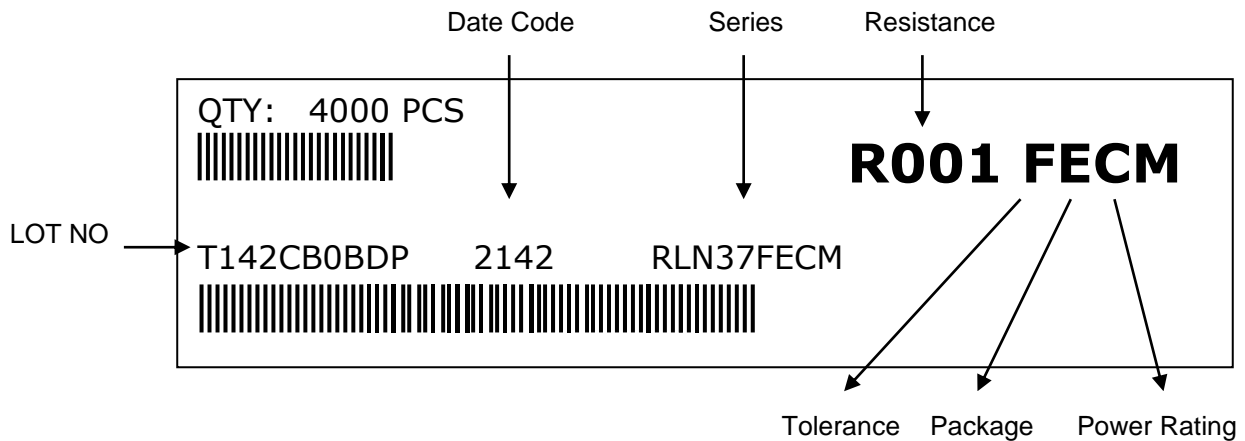
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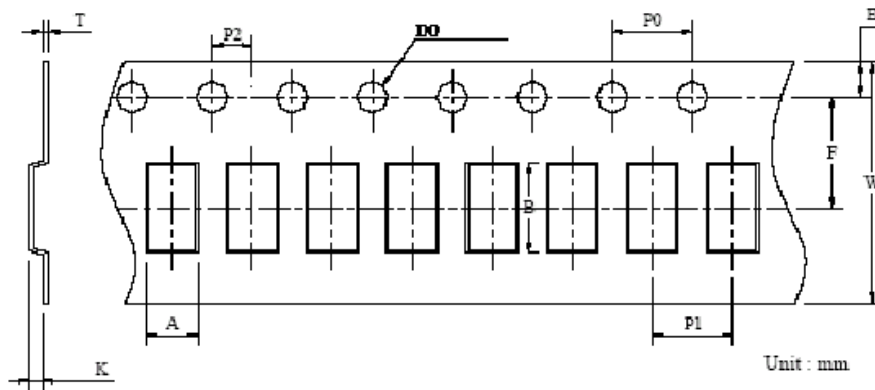
7. Number of Package

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



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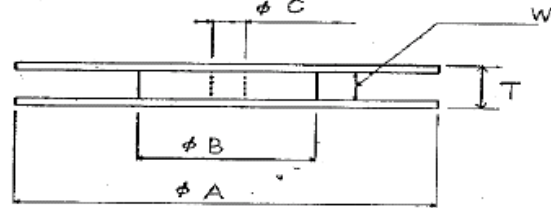
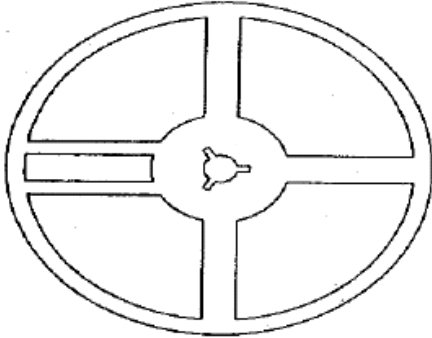
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10. Reel Specification

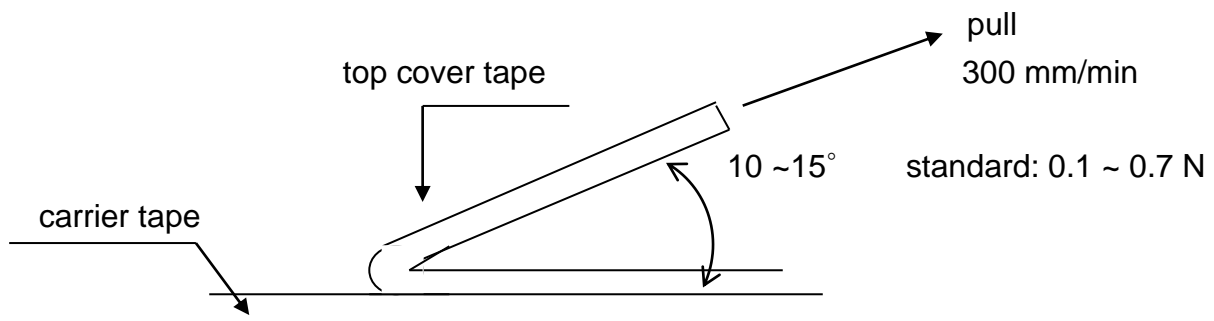


Series	ϕA	ϕB	ϕC	W	T
RLN37	180 ⁺⁰ ₋₃	60 ±1.0	13.0±1.0	13.0±1.0	15.4±2.0

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°C~35°C, Humidity:40%~75%



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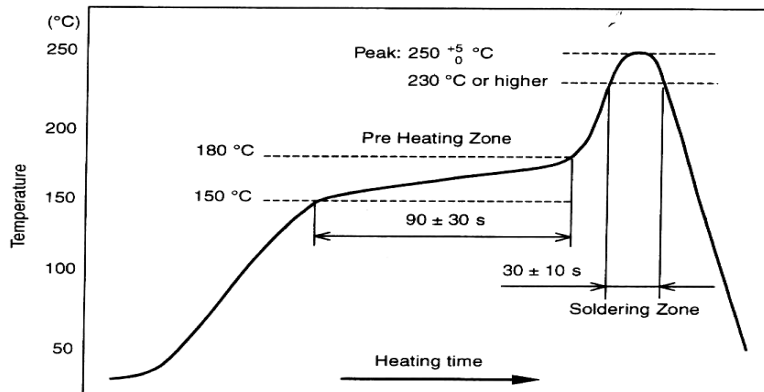
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13. Shelf Life :

2 years from manufacturing date.

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



Peak : $250 \begin{matrix} +5 \\ -0 \end{matrix}^{\circ}\text{C}$, 5 sec

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

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

15. Manufacturing Country & City :

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