



Lead-Free Current Sensing Resistors RLM Series



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1. Scope :

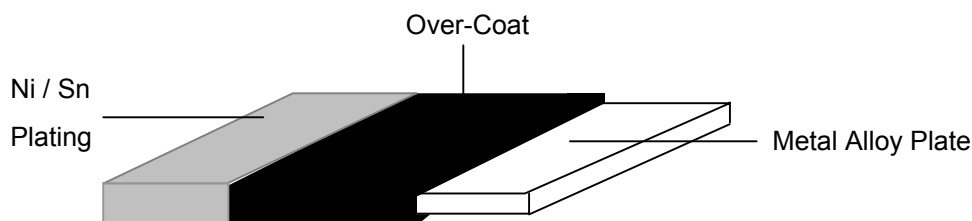
This specification applied to the products of Lead-Free current sensing resistor of metal foil for Lead-Free RLM series manufactured by TA-I TECHNOLOGY CO.,LTD.

2. Type Designation :

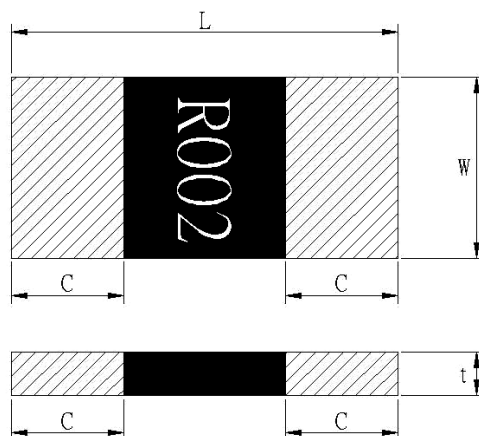
<u>RLM</u> Item	<u>25</u> Series No.	<u>F</u> Resistance tolerance	<u>E</u> Packaging	<u>C</u> Power Rating	<u>R002</u> Resistance
25:2512(6432)		F:±1% G:±2% J:±5%	E: Embossed Tape	C=1W E=2W	e.g : R002=2mΩ R010=10mΩ

3. Construction and Dimension :

3.1 Construction:



3.2 Dimension:



UNIT : mm

Style	L	W	C	t	Material
RLM	6.4±0.2	3.2±0.2	2.0±0.2(R≤2mΩ)	0.6 ±0.20	Metal : Copper-Nickel Alloy or Copper-Manganese Alloy Over Coating : molding Compound UL-94 grade
			0.9±0.2(R>2mΩ)		



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4. Features:

Type	RLM	
Power Rating	1&2 W (1W:R=1~50 mΩ) (2W:R≤ 10mΩ)	
Resistance Value	1 ~50mΩ	
Operation Temperature Range	-55℃ ~+170℃	
Temperature Coefficient of Resistance	275ppm/℃	R≤ 1mΩ
	100ppm/℃	1mΩ <R≤ 10mΩ
	75ppm/℃	R>10mΩ
Tolerance	±1%,±2%,±5%	
Insulation Resistance	Over 100MΩ	
Maximum Working Voltage(V)	(P*R) ^{1/2}	

5. Reliability Tests :

Test Items	Condition of Test	Test Limits
Temperature Coefficient of Resistance	+25℃ ~ +125℃	Refer 4.0
Load Life	1000hours at rated power, 70℃, 1.5hours "ON", 0.5hour "OFF"	< ±1%
Short Time Overload	5 X rated power for 5s	< ±0.5%
Moisture no Load	85℃, 85%RH, 1000hrs	< ±0.5%
Temperature cycle	-40℃ & +125℃, 1000cycle, 15min per extreme condition	< ±0.5%
Resistance to Soldering Heat	260±5℃ for 20±1 sec	< ±0.5%
Solderability	245±5℃, 2±0.5sec	At least 95% of surface area of electrode shall be covered with new solder
High Temperature Exposure	170℃, 1000hrs	< ±0.5%
Low Temperature Storage	-55℃, 1000hrs	<±0.5%
Substrate Bending	Bending width 2mm, Epoxy thickness 1.6mm, Fulcrums distance 90mm	< ±0.5%
Insulation Resistance	100V DC for 1 minute	>100 MΩ

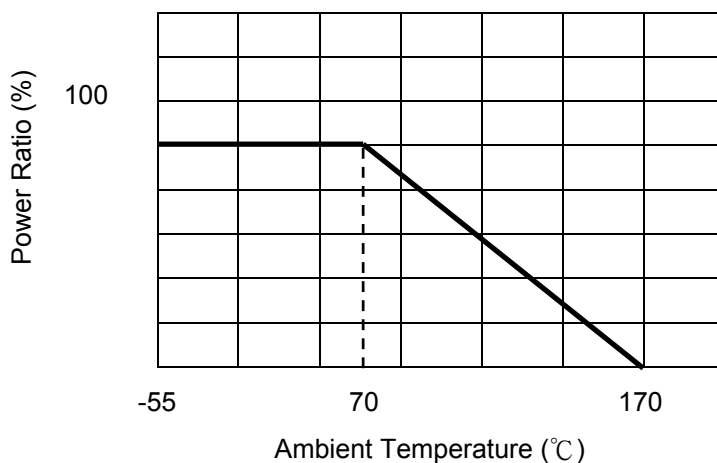


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5.1 Derating Curve



5.2 Rated Voltage

The rated voltage is calculated by the following formula:

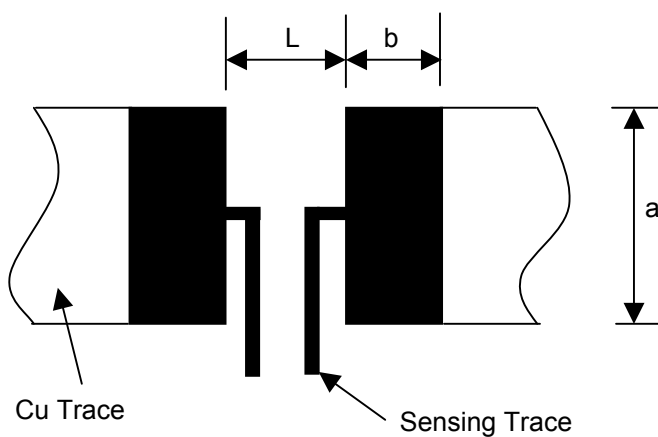
$$V = \sqrt{P \cdot R}$$

V: Rated Voltage (V)

P: Rated Power (W)

R: Resistance Value (Ω)

6. Recommended Solder Pad Dimension



Resistance Range (Ω)	a	b	L
0.001-0.002	4.0	3.1	1.3
0.003-0.050	4.0	2.1	4.1

Unit:mm



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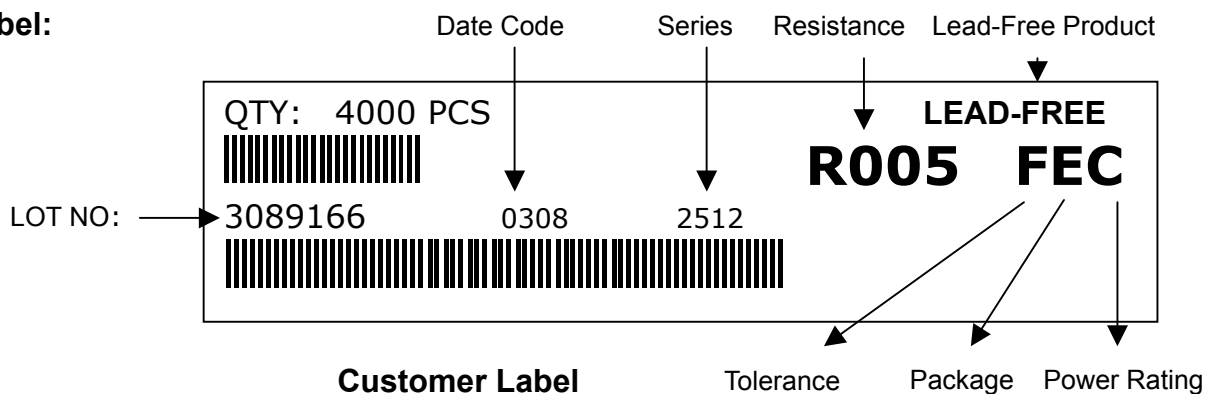


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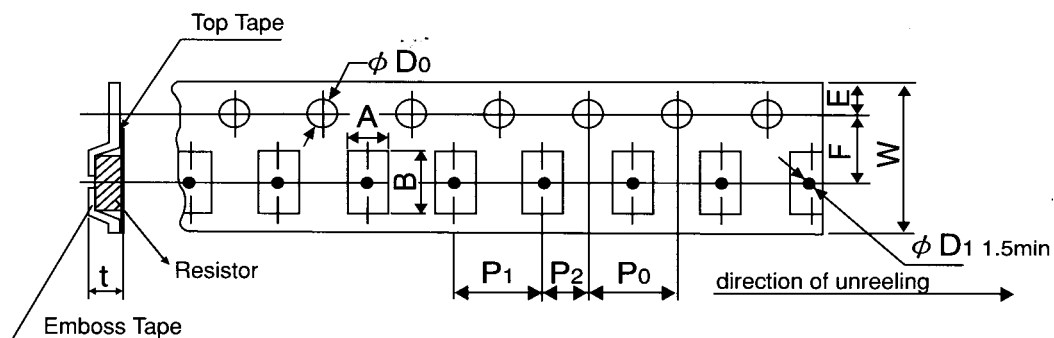
7. Number of Package:

4000 Pieces / package

8. Label:



9. Taping



Packing	Type	A	B	W	F	E	P ₁	P ₂	P ₀	D ₀	T
Emboss	RLM25	3.6 $\pm$ 0.2 -0.18	6.9 $\pm$ 0.2	12 $\pm$ 0.2	5.5 $\pm$ 0.05	1.75 $\pm$ 0.1	4.0 $\pm$ 0.1	2.0 $\pm$ 0.05	4.0 $\pm$ 0.05	ϕ 1.5 (+0.1/-0)	0.85 $\pm$ 0.15

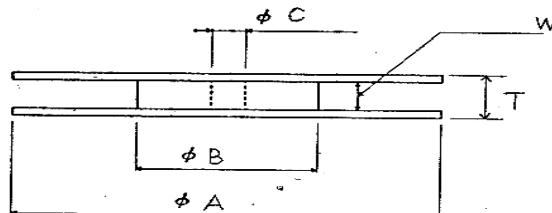
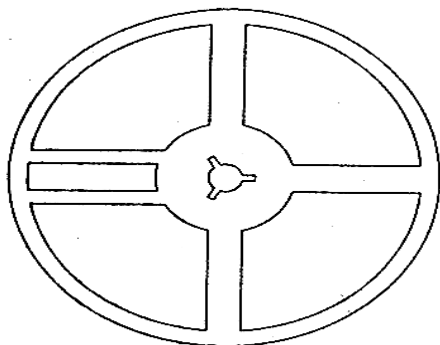


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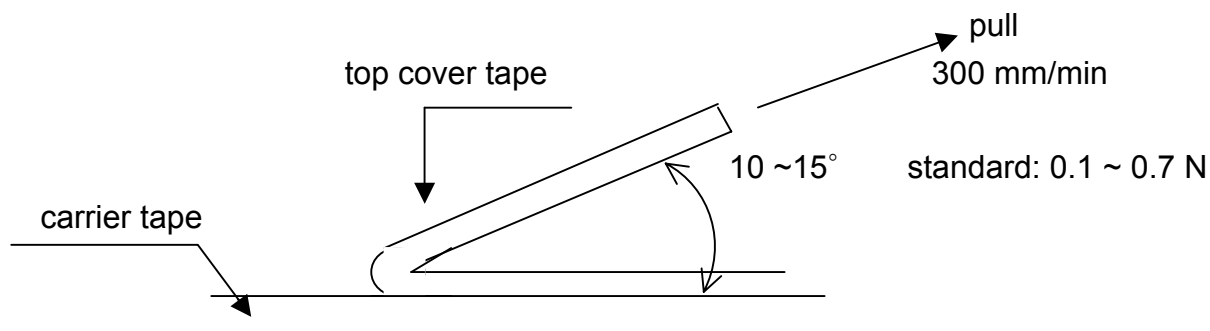
10. Reel Specification



Series	ϕA	ϕB	ϕC	W	T
RLM 25	180 ⁺⁰ ₋₃	60 min	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.

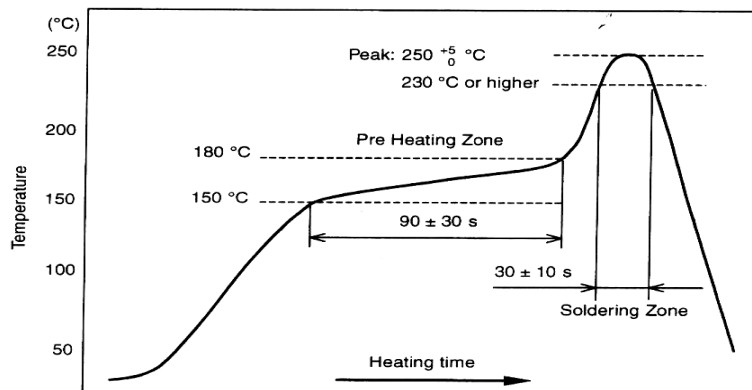


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14. Recommend IR – Reflow profile : (solder : Sn96.5 / Ag3 / Cu0.5)



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

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

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

15. 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 :

TA-I TECHNOLOGY CO., LTD. (Taiwan – Tao Yuan)
Tel: (+886)-3-3246169 Fax : (+886)-3-3247410

Associated companies :

(1) FORTUNE TASK RESISTOR FACTORY (China – Dong Guan)
Tel : (+86)-769-83394790 Fax : (+86)-769-83394794

(2) TA-I TECHNOLOGY (SU ZHOU) CO., LTD. (China – Su Zhou)
Tel : (+86)- 512-63457879 Fax : (+86)-512-63457869

(3) TAI OHM ELECTRONICS (M) SDN. BHD. (Malaysia – Penang)
Tel : (+604)- 3900480 Fax : (+604)-3901481

(4) P.T.TAI ELECTRONICS Indonesia (Indonesia – Jakarta)
Tel : (+62)-21-44820254 Fax : (+62)-21-44820256