



**Lead-Free Current Sensing Resistors
RLM Series
(Halogen-Free)**

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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 :

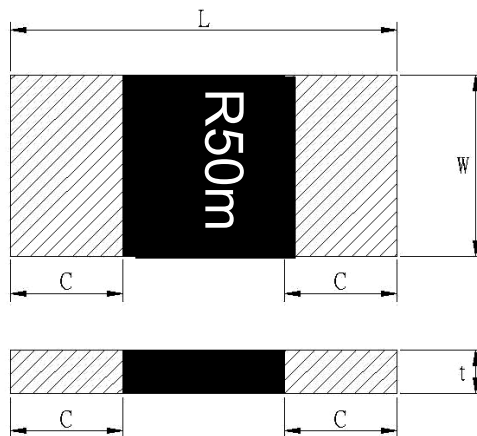
<u>RLM</u> Item	<u>25</u> Series No.	<u>F</u> Resistance tolerance	<u>E</u> Packaging	<u>E</u> Power Rating	<u>M</u> Metal	<u>R50M</u> Resistance
25:2512(6432)		F:±1% G:±2% J:±5%	E: Embossed Tape	C=1W E=2W G=3W	M=MnCu	e.g : R50m=0.5mΩ

3. Construction and Dimension :

3.1 Construction:



3.2 Dimension:



UNIT : mm

Style	L	W	C	t	Material
RLM25	6.4±0.2	3.2±0.2	2.6±0.2	0.6 ±0.20	Metal: Copper-Manganese Alloy Over Coating : molding Compound UL-94V-0 grade



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4. Features:

Type	RLM25
Power Rating	1W 、 2 W 、 3W
Resistance Value	0.5mΩ~0.75mΩ
Operation Temperature Range	-55℃~+170℃
Temperature Coefficient of Resistance	±75ppm/℃
Tolerance	±1% 、 ±2% 、 ±5%
Insulation Resistance	Over 100MΩ
Maximum Working Voltage(V)	$(P \cdot R)^{1/2}$

5. Reliability Tests :

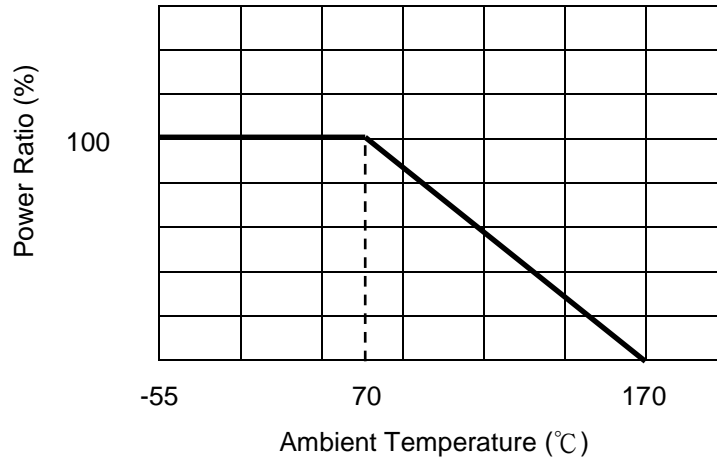
Test Items	Reference standard	Condition of Test	Test Limits
Temperature Coefficient of Resistance	IEC60115-1 4.8 JIS C 5201-1 4.8	+25℃ ~ +125℃	Refer 4.0
Load Life	IEC60115-1 4.25.1 JIS C 5201-1 4.25.1	1000hours at rated power, 70℃, 1.5hours "ON", 0.5hour "OFF"	< ±1%
Short Time Overload	IEC60115-1-4.13 JIS-C5201-4.13	5 X rated power for 5s	< ±0.5%
Moisture no Load	IEC60115-1 4.13 JIS C 5201-1 4.13	85℃, 85%RH, 1000hrs	< ±0.5%
Temperature cycle	IEC60115-1 4.24.2.1a) JIS C 5201-1 4.24.2.1a)	-55℃ & +155℃, 300cycle, 15min per extreme condition	< ±0.5%
Resistance to Soldering Heat	IEC60115-1 4.19 JIS C 5201-1 4.19	260±5℃ for20±1 sec	< ±0.5%
Solderability	IEC60115-1 4.18 JIS C 5201-1 4.18	245±5℃, 2±0.5sec	At least 95% of surface area of electrode shall be covered with new solder
High Temperature Exposure	IEC60115-1 4.17 JIS C 5201-1 4.17	170℃, 1000hrs	< ±1%
Low Temperature Storage	IEC60115-1 4.23.2 JIS C 5201-1 4.23.2	-55℃, 1000hrs	<±0.5%
Substrate Bending	EC60115-1 4.23.4 JIS C 5201-1 4.23.4	Bending width 2mm	< ±0.5%
Insulation Resistance	IEC60115-1 4.33 JIS C 5201-1 4.33	100V DC for 1 minute	>100 MΩ



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5.1 Derating Curve



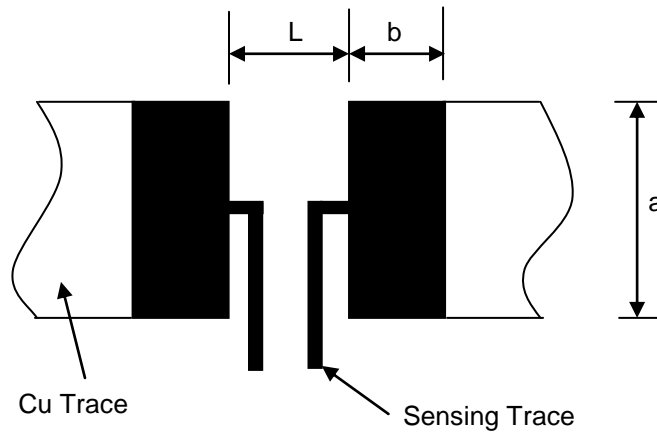
5.2 Rated Current

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
0.0005~0.00075	4.0	3.1	1.3

Unit: mm



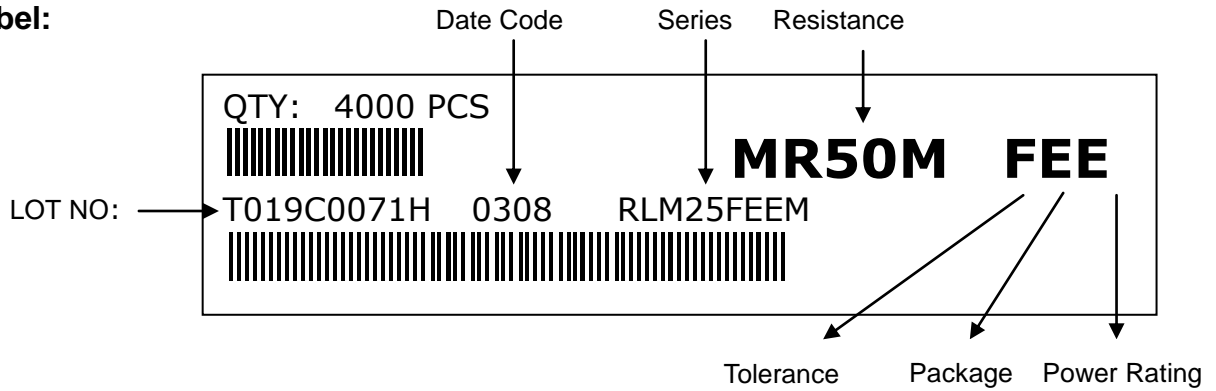
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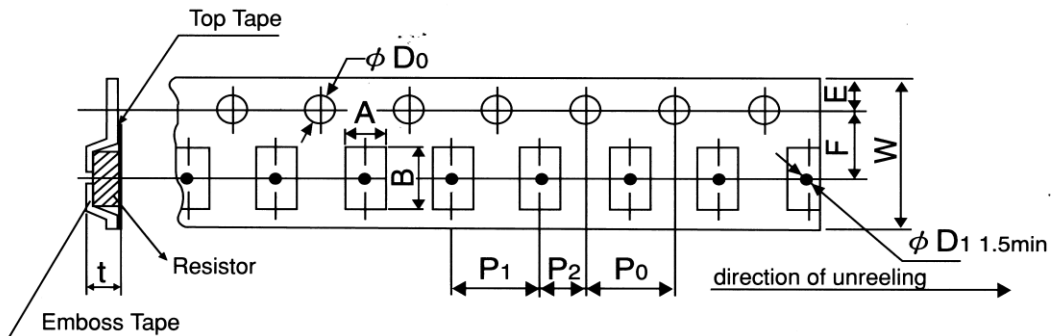
7. Number of Package:

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	$3.6^{+0.2}_{-0.18}$	6.9 ± 0.2	$12. \pm 0.2$	5.5 ± 0.05	1.75 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	4.0 ± 0.05	$\phi 1.5$ ($+0.1/-0$)	0.85 ± 0.15

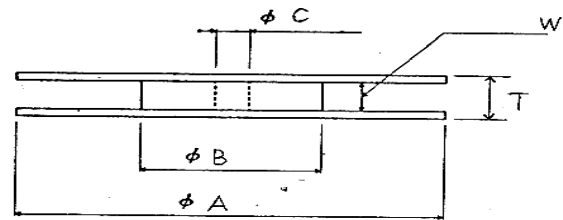
Unit: mm



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10. Reel Specification

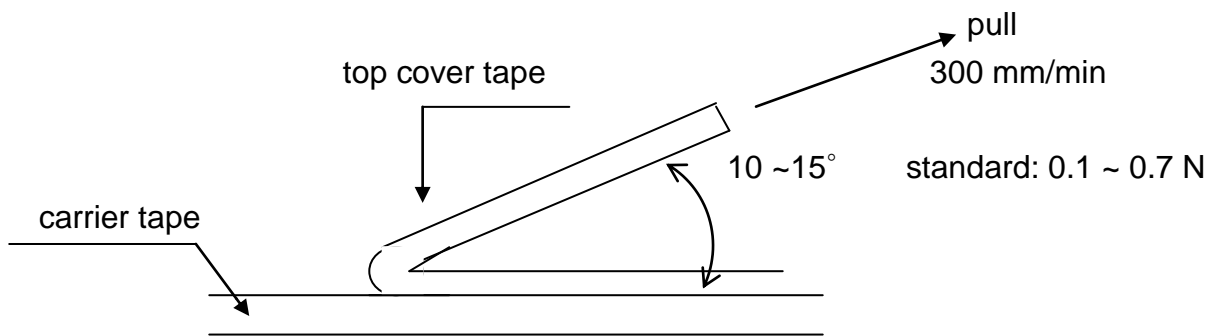


Series	ϕA ₊₀ ₋₃	ϕB	ϕC	W	T
RLM 25	180	60 ±1.0	13.0±1.0	13.0±1.0	15.4±2.0

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%

13. Shelf Life:

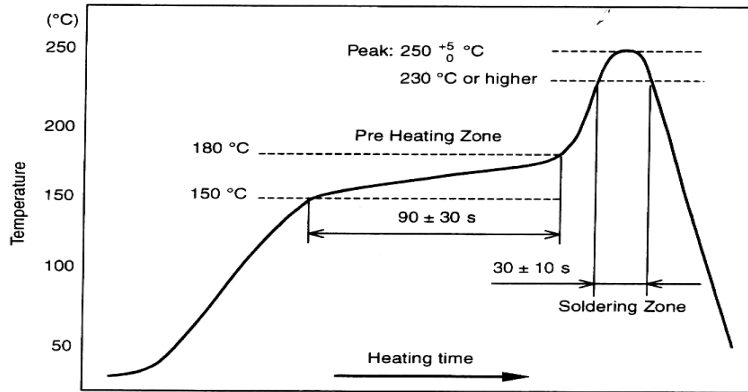
2 years from manufacturing date.



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



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

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

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

Iron Solder: $350 \pm 10 \text{ } ^\circ\text{C}$, 3+1/-0 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)

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