



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

| | |
|-------------|---------------|
| Document No | TRLM-256Z001A |
| Issued date | 2019/01/22 |
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1. Scope :

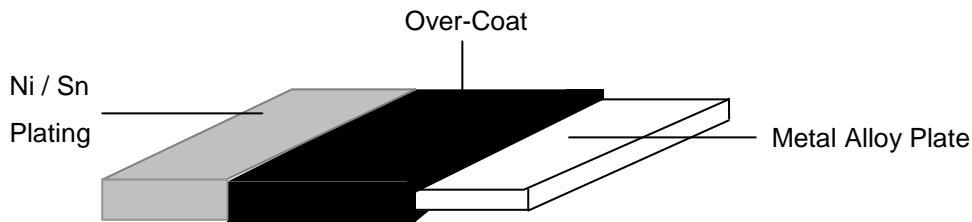
This specification applied to the products of Lead-Free current sensing resistor of metal foil for Lead-Free RLM series manufactured by TA-I TECHNOLOGY CO.,LTD.

2. Type Designation :

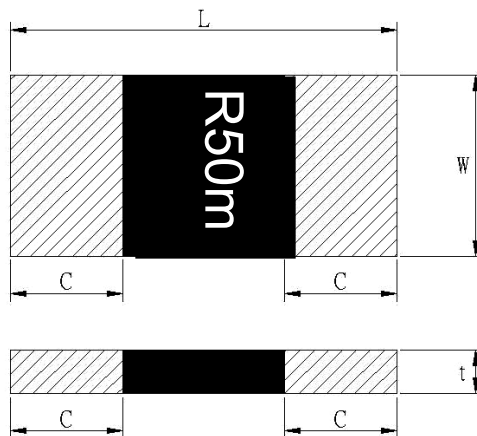
| <u>RLM</u> Item | <u>25</u> Series No. | <u>F</u> Resistance tolerance | <u>E</u> Packaging | <u>E</u> Power Rating | <u>M</u> Metal | <u>R50M</u> Resistance |
|--------------------|-------------------------|----------------------------------|-----------------------|--------------------------|-------------------|---------------------------|
| 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 :

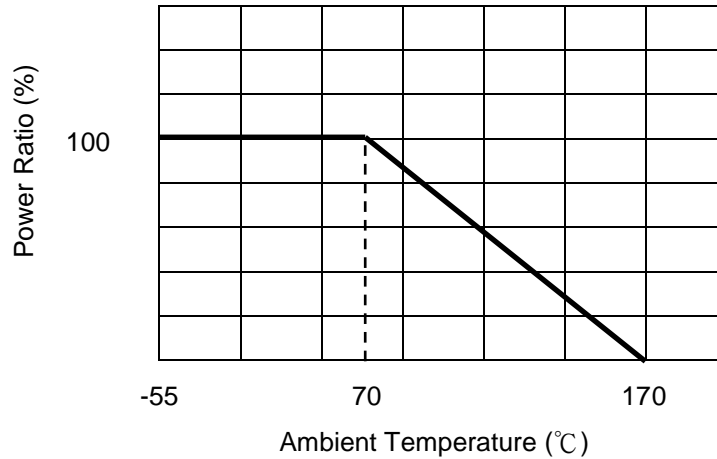
| Test Items | Reference standard | Condition of Test | Test Limits |
|---------------------------------------|--|---|--|
| Temperature Coefficient of Resistance | IEC60115-1 4.8 JIS C 5201-1 4.8 | +25℃ ~ +125℃ | Refer 4.0 |
| Load Life | IEC60115-1 4.25.1 JIS C 5201-1 4.25.1 | 1000hours at rated power, 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



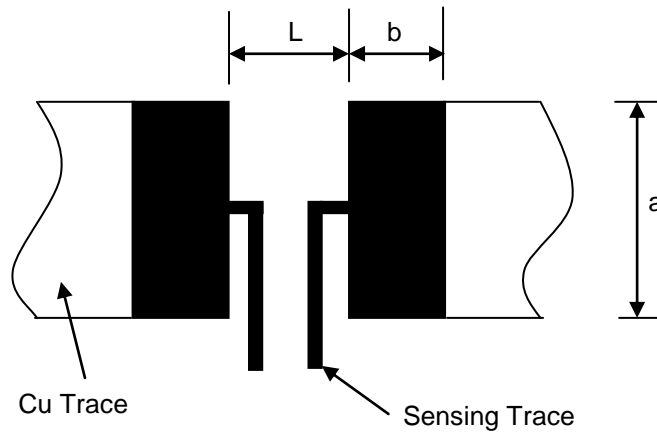
5.2 Rated Current

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



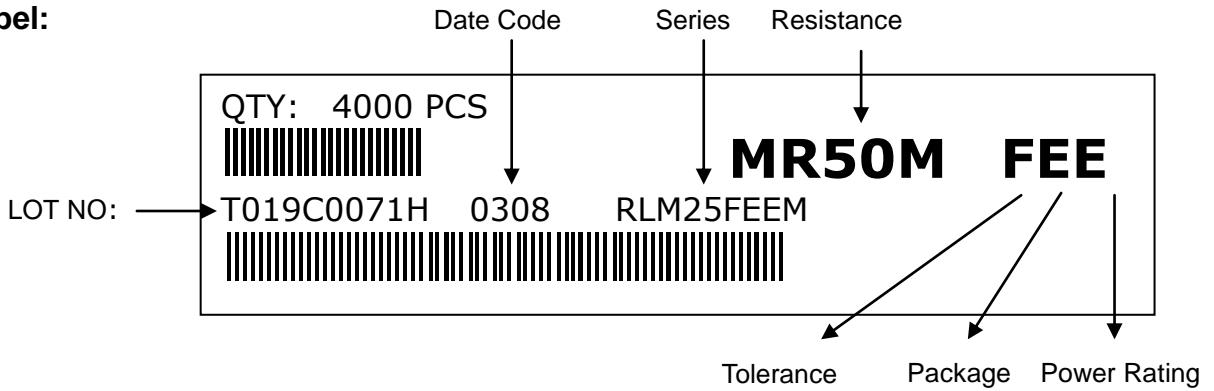
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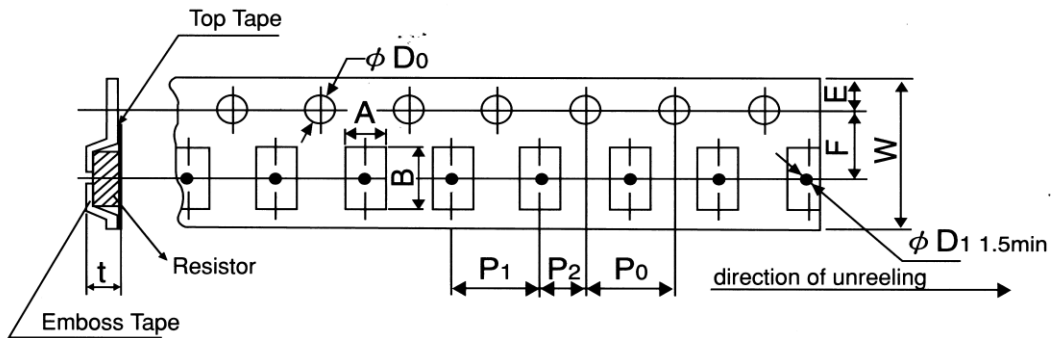
7. Number of Package:

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.±0.2 | 5.5±0.05 | 1.75±0.1 | 4.0±0.1 | 2.0±0.05 | 4.0±0.05 | φ 1.5 (+0.1/-0) | 0.85±0.15 |

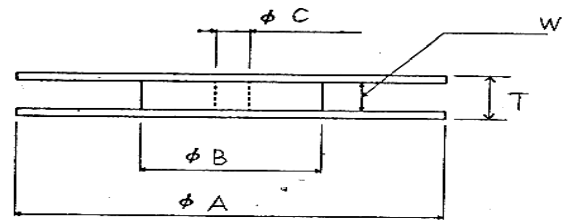
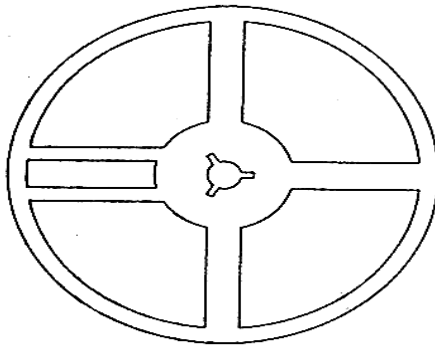
Unit: mm



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10. Reel Specification

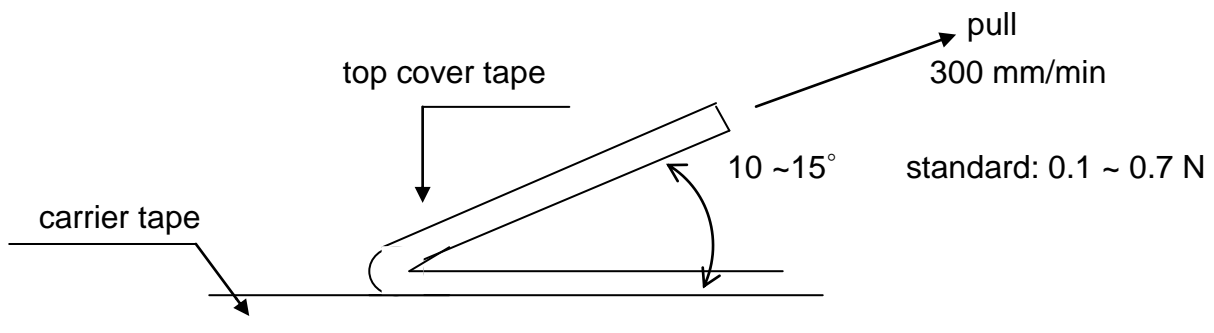


| Series | ϕA ₊₀ ₋₃ | ϕB | ϕC | W | T |
|--------|--|----------|----------|----------|----------|
| RLM 25 | 180 | 60 ±1.0 | 13.0±1.0 | 13.0±1.0 | 15.4±2.0 |

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:

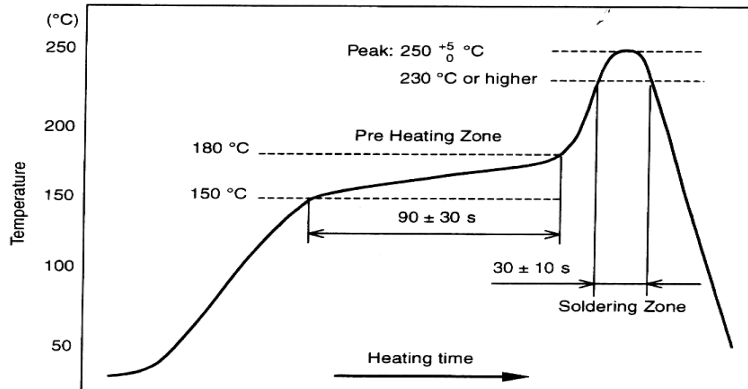
2 years from manufacturing date.



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



Peak : 250 \pm 5 °C , 5 sec
- 0

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

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

Iron Solder:350±10°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)

Tel: (+886) 3-3246169 Fax : (+886) 3-3246167

Associated companies :

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(2) TA-I TECHNOLOGY ELECTRONIC (DONGGUAN) CO., LTD. (China –Dongguan)

Tel : (+86) 769-8339-4790~3 Fax : (+86) 769-8339-4794

(3) FORTUNE TASK RESISTOR FACTORY (China – Dongguan)

Tel : (+86) 769-8339-4790~3 Fax : (+86) 769-8339-4794

(4) TAI OHM ELECTRONICS (M) SDN. BHD. (Malaysia – Penang)

Tel :(+60) 4- 3900480 Fax : (+60) 4-3901481

(5) P.T.TAI ELECTRONIC Indonesia (Indonesia – Jakarta)

Tel :(+62) 21-44820254 Fax : (+62) 21-44820256

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[PR2512FKF7W0R004L](#) [RC1005F124CS](#) [RL73K3AR56JTDF](#) [RL7520WT-R001-F](#) [RL7520WT-R009-G](#) [RL7520WT-R020-F](#) [LRC-](#)
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[KRL1632E-C-R200-F-T5](#) [KRL1632E-C-R200-F-T1](#) [RLP73M1ER051FTDF](#) [RLP73M2AR075FTDF](#) [RLP73M1JR051FTDF](#)
[SR731ERTTP5R10F](#) [SR731ERTTP100J](#) [SR731ERTTP6R80F](#) [SR731ERTTP4R70F](#) [SR731ERTTP2R20F](#) [SR731ERTTP3R90F](#)
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[SR731ERTTP2R0J](#) [SR731ERTTP4R7J](#) [SR731ERTTP9R1J](#) [SR731ERTTP1R0J](#) [SR731ERTTP2R2J](#) [SR731ERTTP5R1J](#) [SR731ERTTP6R8J](#)
[SR731ERTTP9R10F](#) [RCWE2512R180FKEA](#) [FCSL64R007JER](#) [LRF1206-R018FW](#) [TLR2B10DR022FTDG](#)