



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

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1. Scope :

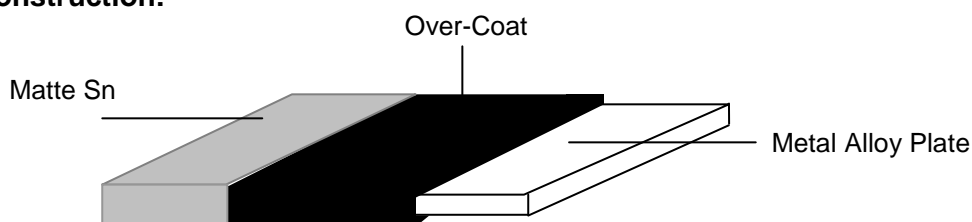
This specification applied to the products of Lead-Free current sensing resistor of metal foil for Lead-Free RLM series manufactured by TA-I TECHNOLOGY CO.,LTD.

2. Type Designation :

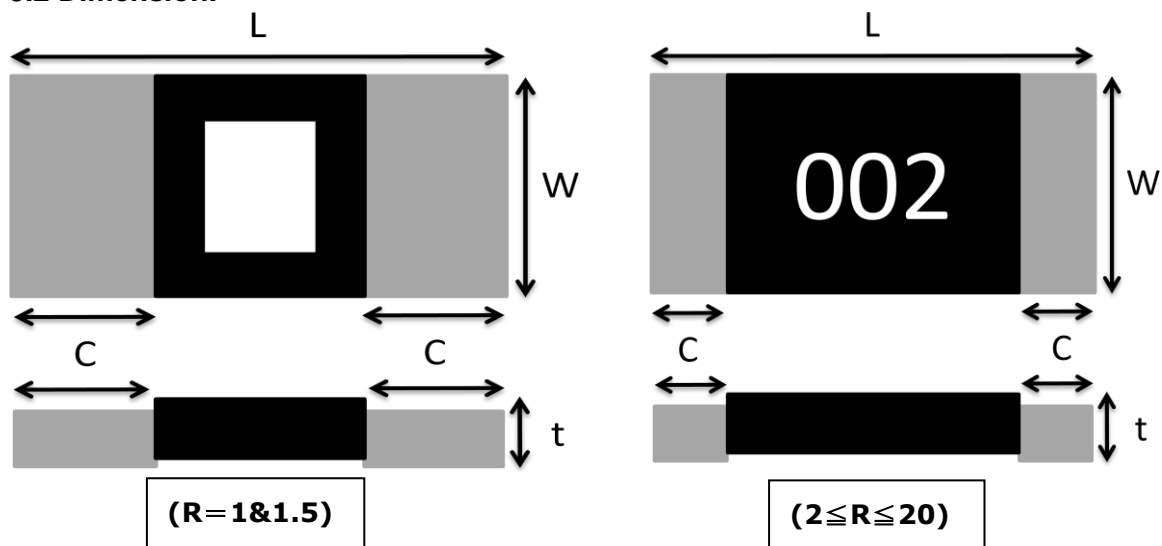
<u>RLM</u> Item	<u>10</u> Series No.	<u>F</u> Resistance tolerance	<u>I</u> Packaging	<u>S</u> Power Rating	<u>M</u> Metal	<u>R003</u> Resistance
10:0805(2012)		F:±1% G:±2% J:±5%	T: Paper	B=1/8W A=1/4W S=1/2W	M=MnCu	e.g : R003=3mΩ R020=20mΩ

3. Construction and Dimension :

3.1 Construction:



3.2 Dimension:



unit: mm

Style	L	W	C	t	Material
RLM10	2.0±0.1	1.25±0.1	0.65±0.2 (1 ≤ R < 2)	0.6 ±0.20	Strip : Alloy Over Coating : molding Compound UL-94V-0 grade
			0.4±0.2 (2 ≤ R ≤ 25)		



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4. Features:

Type	RLM10
Power Rating	1/8W 、 1/4W 、 1/2W
Resistance Value	1~25 mΩ
Operation Temperature Range	-55℃ ~+170℃
Temperature Coefficient of Resistance	±50ppm/℃
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
High Temperature Exposure(Storage)	T=125℃,1000hrs,Measurement at 24hrs after test conclusion.	< ±1%
Low temperature operation	-55 °C for 45 min	< ±0.5%
Temperature Cycling	1000Cycle (-55℃ to 125℃),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℃ 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	



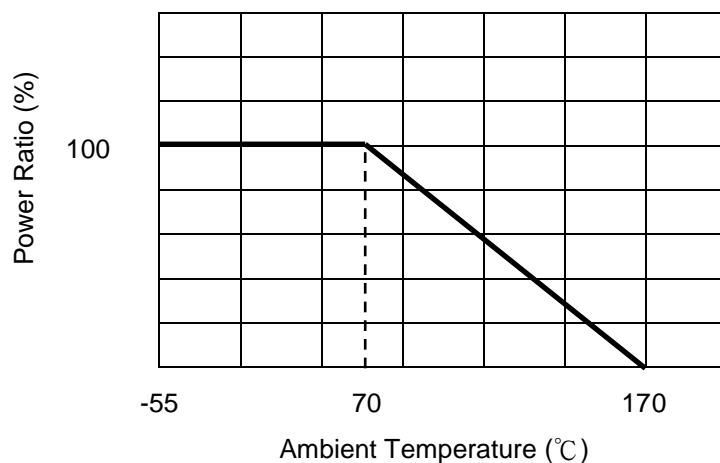
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5.1 Derating Curve



5.2 Rated Current

The rated current is calculated by the following formula:

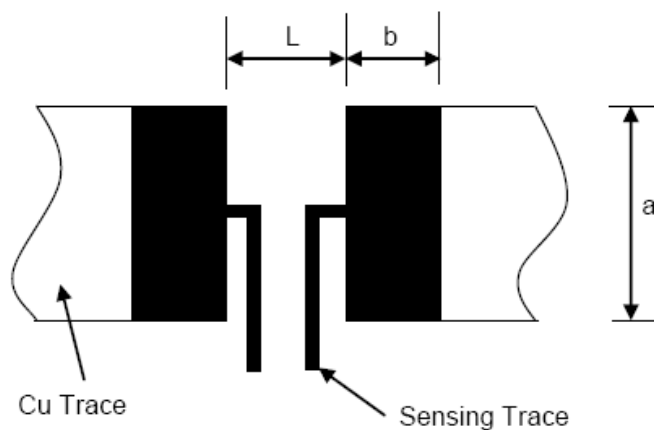
$$I = \sqrt{P \div R}$$

I: Rated Current(A)

P: Rated Power(W)

R: Resistance Value(Ω)

6. Recommended Solder Pad Dimension



Resistance Range (Ω)	a	b	L
0.001~0.002	1.4	1.15	0.7
0.003~0.025	1.4	1.15	1.2

Unit: mm



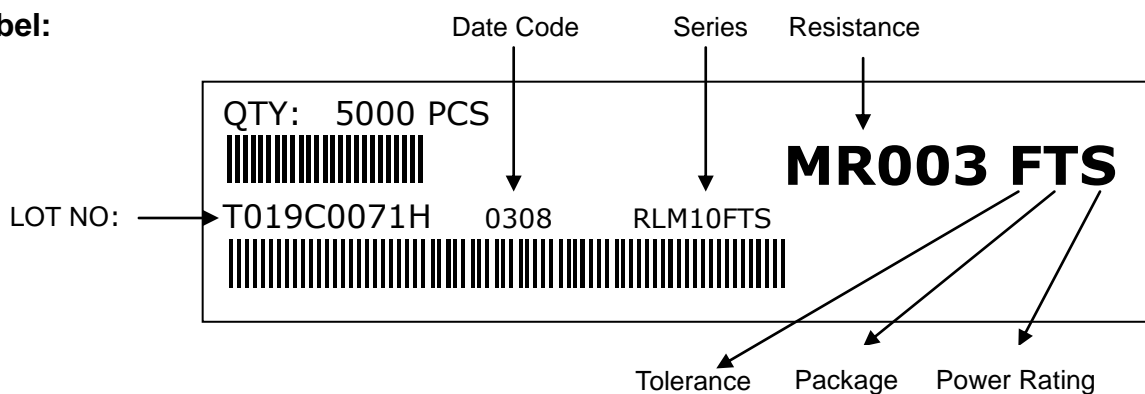
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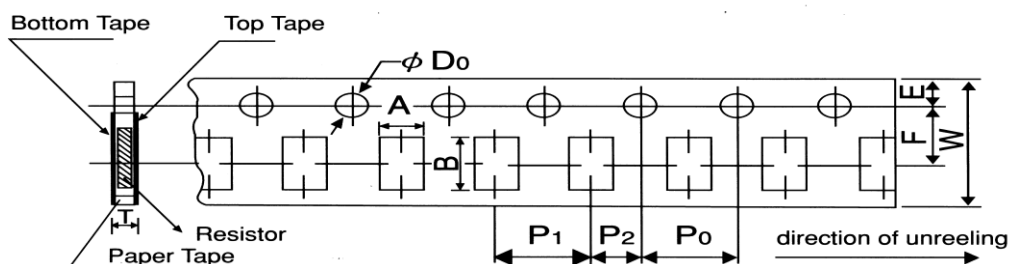
7. Number of Package:

5000 Pieces / package

8. Label:



9. Taping



Packing	Type	A	B	W	F	E	P ₁	P ₂	P ₀	D ₀	T
Paper Tape	RLM10	1.6±0.15	2.4±0.2	8.0±0.2	3.5±0.05	1.75±0.1	4.0±0.1	2.0±0.1	4.0±0.1	$\Phi \begin{matrix} +0.1 \\ 1.5 \\ -0 \end{matrix}$	0.84±0.1

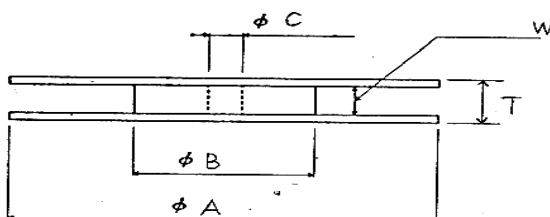
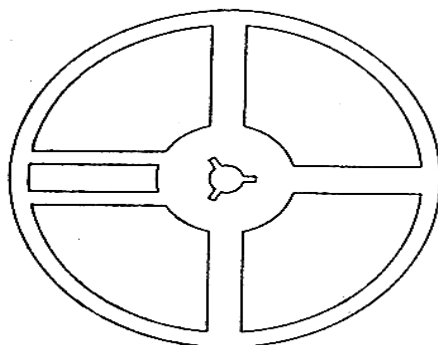
Unit:mm



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10. Reel Specification

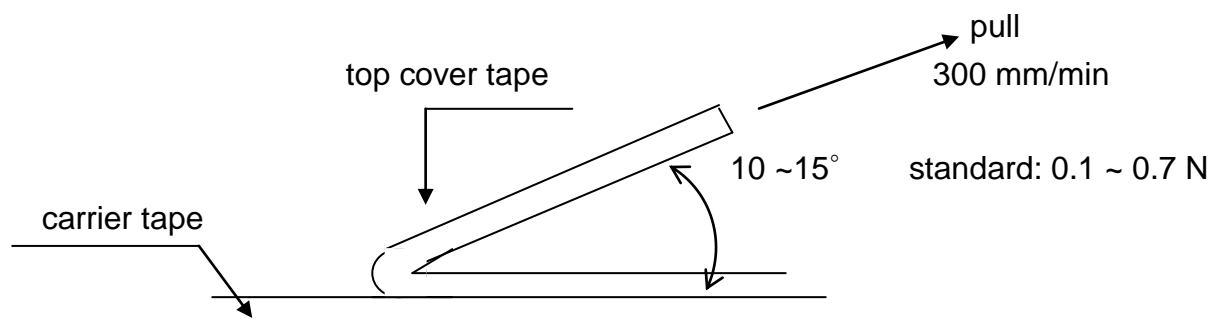


Series	ϕA	ϕB	ϕC	W	T
RLM 10	178.0 ± 2.0	60.0 ± 1.0	13.0 ± 1.0	9.0 ± 1.0	11.4 ± 1.0

Unit: mm

11. Peeling Strength of Top Cover Tape

Peel – off force of paper and blister tape is in accordance with “JIS ”
that is , 0.1 to 0.7 N at a peel-off speed of 300 mm / minute.



12. Storage Conditions:

Temperature: 5°C ~35°C , Humidity: 40% ~75%

13. Shelf Life:

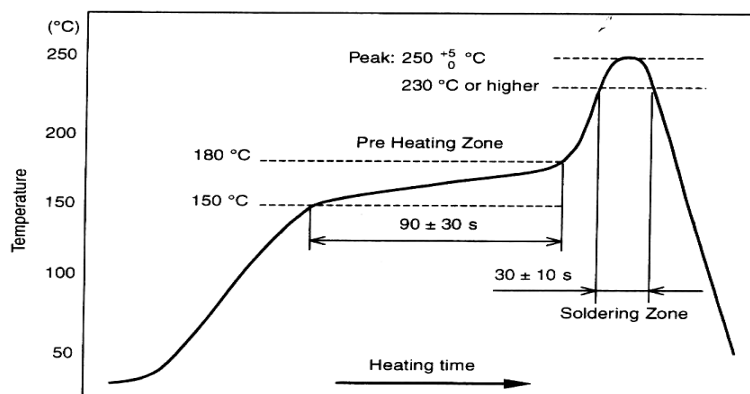
2 years from manufacturing date.



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



Peak : $260 \pm 5^{\circ}\text{C}$, 10 ± 1 sec

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

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

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

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

Tel : 604- 3900480 Fax : 604-3901481

(4) P.T.TAI ELECTRONICS Indonesia (Indonesia – Jakarta)

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