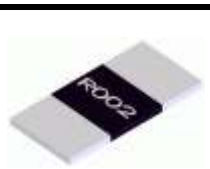
	Lead-Free Current Sensing Resistors RLM Series (Halogen-Free)		Document No	TRLM-250S002M
			Issued date	2011/03/11
			page	1/6

1. Scope：

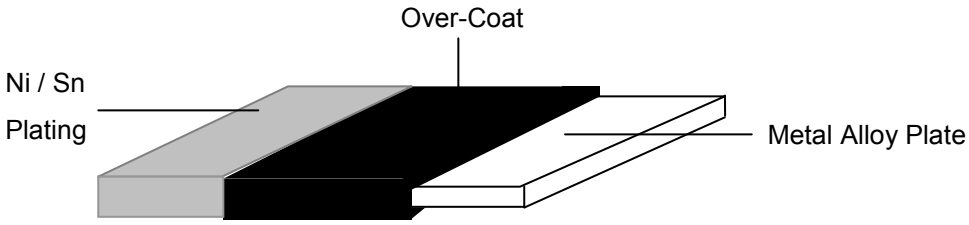
This specification applied to the products of Lead-Free current sensing resistor of metal foil for Lead-Free RLM series manufactured by TA-I TECHNOLOGY CO.,LTD.

2. Type Designation：

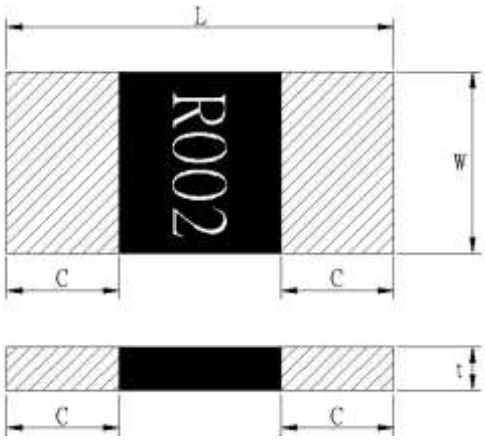
RLM	25	F	E	C	R002
Item	Series No.	Resistance tolerance	Packaging	Power Rating	Resistance
	25:2512(6432)	F:±1% G:±2% J:±5%	E: Embossed Tape	C=1W E=2W	e.g : R002=2mΩ R010=10mΩ

3. Construction and Dimension ：

3.1 Construction:



3.2 Dimension:



UNIT : mm

Style	L	W	C	t	Material
RLM25	6.4±0.2	3.2±0.2	2.0±0.2(R≦2mΩ) 0.9±0.2(R>2mΩ)	0.6 ±0.20	Metal：Copper-Nickel Alloy or Copper-Manganese Alloy Over Coating：molding Compound UL-94V-0 grade

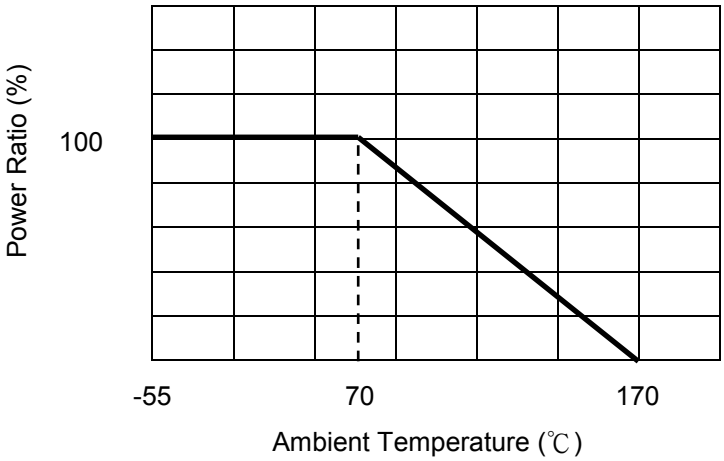
4. Features:

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	**Reference standard**	Condition of Test	Test Limits
Temperature Coefficient of Resistance	IEC60115-1-4.8 JIS-C5201-4.8	+25℃ ~ +125℃	Refer 4.0
Load Life	IEC60115-1-4.25.1 JIS-C5201-4.25.1	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- 4.24.2.1a) JIS-C5201- 4.24.2.1a)	85℃, 85%RH, 1000hrs	< ±0.5%
Temperature cycle	IEC60115-1-4.19 JIS-C5201-4.19	-55℃ & +155℃, 300cycle, 15min per extreme condition	< ±0.5%
Resistance to Soldering Heat	IEC60115-1-4.18 JIS-C5201-4.18	260±5℃ for20±1 sec	< ±0.5%
Solderability	IEC60115-1-4.17 JIS-C5201-4.17	245±5℃, 2±0.5sec	At least 95% of surface area of electrode shall be covered with new solder
High Temperature Exposure	IEC60115-1- 4.23.2 JIS-C5201-4.23.2	170℃, 1000hrs	< ±0.5%
Low Temperature Storage	EC60115-1- 4.23.4 JIS-C5201-4.23.4	-55℃, 1000hrs	<±0.5%
Substrate Bending	IEC60115-1-4.33 JIS-C5201-4.33	Bending width 2mm	< ±0.5%
Insulation Resistance	IEC60115-1-4.6 JIS-C5201-4.6	100V DC for 1 minute	>100 MΩ

5.1Derating Curve



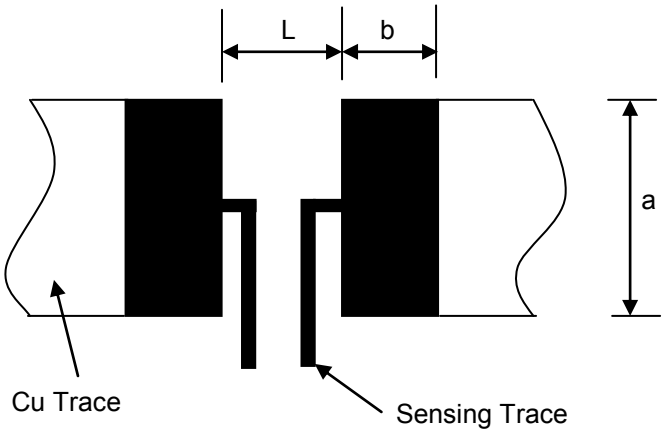
5.2 Rated Voltage

The rated voltage is calculated by the following fomula:

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

V:Rated Voltage(V)
P:Rated Power(W)
R:Resistance Value(Ω)

6. Recommanded Solder Pad Dimension



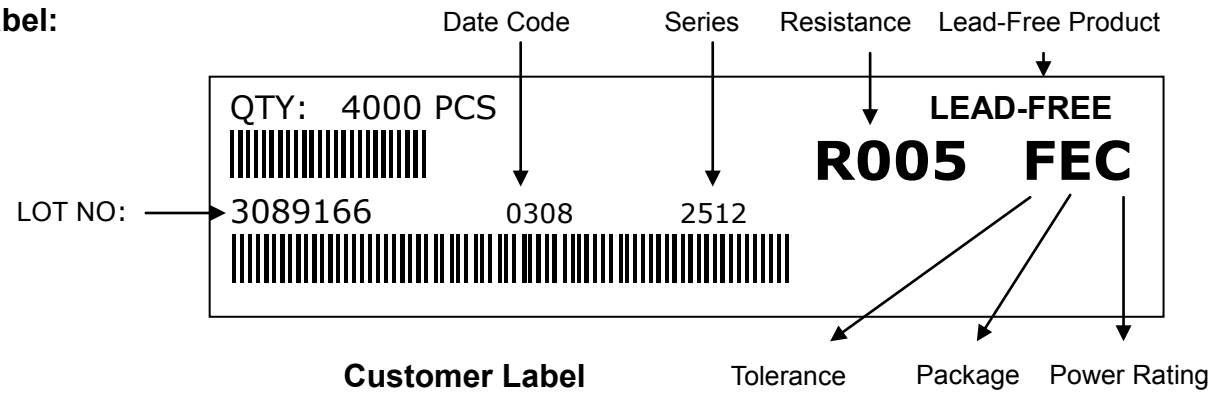
Resistance Range (Ω)	a	b	L
0.001-0.002	4.0	3.1	1.3
0.003-0.050	4.0	2.1	4.1

Unit:mm

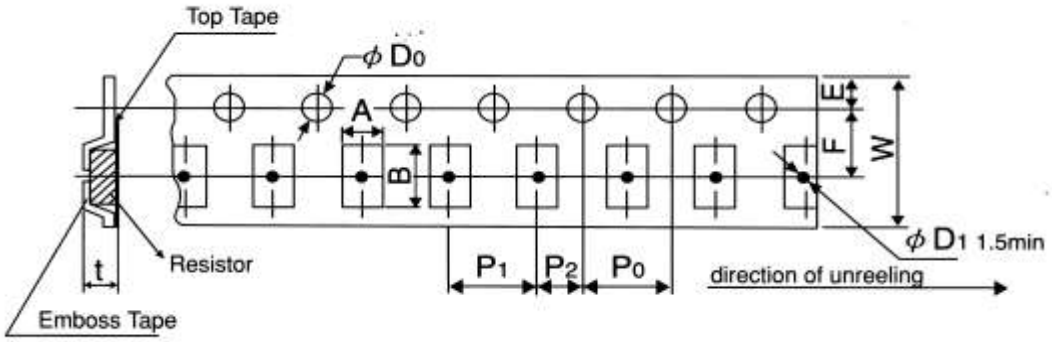
7. Number of Package:

4000 Pieces / package

8. Label:

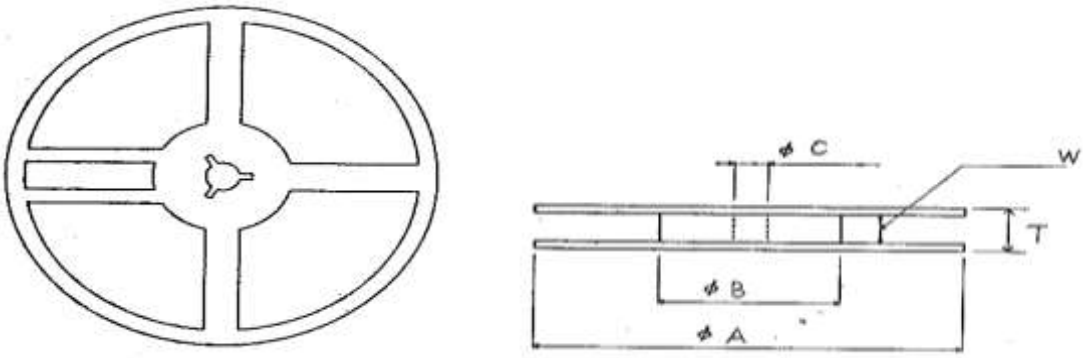


9. Taping



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	φ1.5 (+0.1/-0)	0.85±0.15

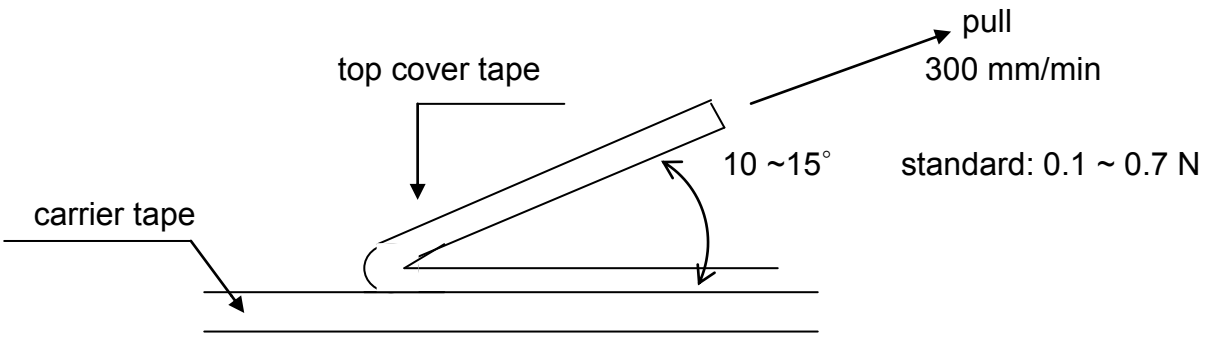
10. Reel Specification



Series	ϕ A	ϕ B	ϕ C	W	T
RLM 25	180 $^{+0}_{-3}$	60 ±1.0	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.



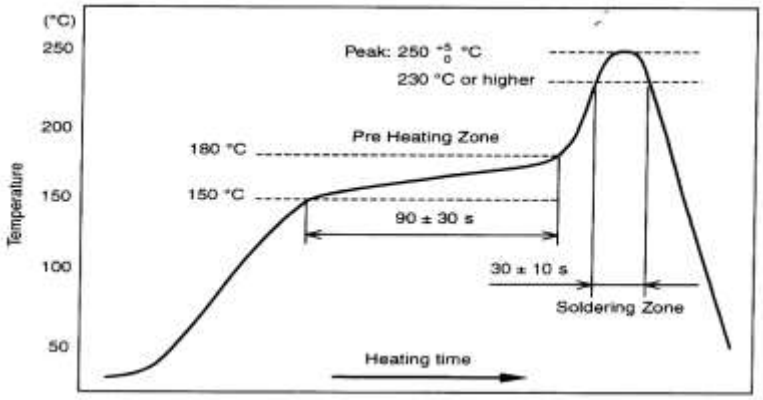
12. Storage Conditions:

Temperature: 5℃~35℃,Humidity:40%~75%

13. Shelf Life:

2 years from manufacturing date.

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



Peak : 250 $^{+5}_{-0}$℃ , 5 sec

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

Soldering Zone : 230℃ or higher , 30±10 sec

Iron Solder:350±10℃ , 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.