



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

Document No	TRLM-100S005E
Issued date	2016/07/29
page	1/6

1. Scope :

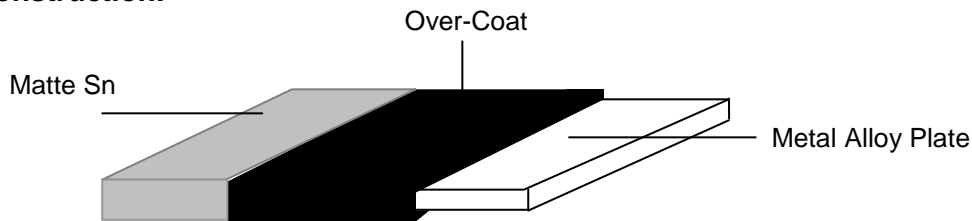
This specification applied to the products of Lead-Free current sensing resistor of metal foil for Lead-Free RLM series manufactured by TA-I TECHNOLOGY CO.,LTD.

2. Type Designation :

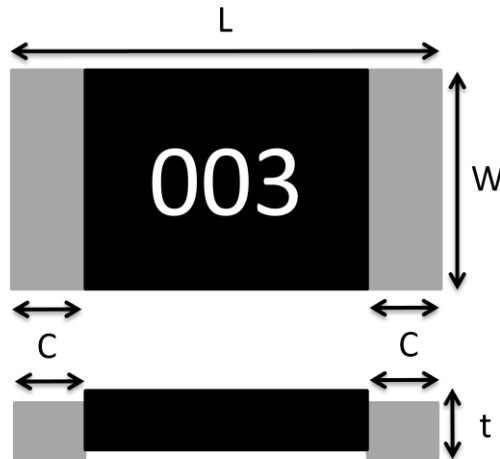
<u>RLM</u> Item	<u>10</u> Series No.	<u>F</u> Resistance tolerance	<u>I</u> Packaging	<u>S</u> Power Rating	<u>M</u> Metal	<u>R003</u> Resistance
	10:0805(2012)	F:±1% G:±2% J:±5%	T: Paper	B=1/8W A=1/4W S=1/2W	M=MnCu	e.g : R003=3mΩ R020=20mΩ

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	0.4±0.2	0.6 ±0.20	Strip : Alloy Over Coating : molding Compound UL-94V-0 grade



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

Document No	TRLM-100S005E
Issued date	2016/07/29
page	2/6

4. Features:

Type	RLM10
Power Rating	1/8W 、 1/4W 、 1/2W
Resistance Value	2~20mΩ
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 :

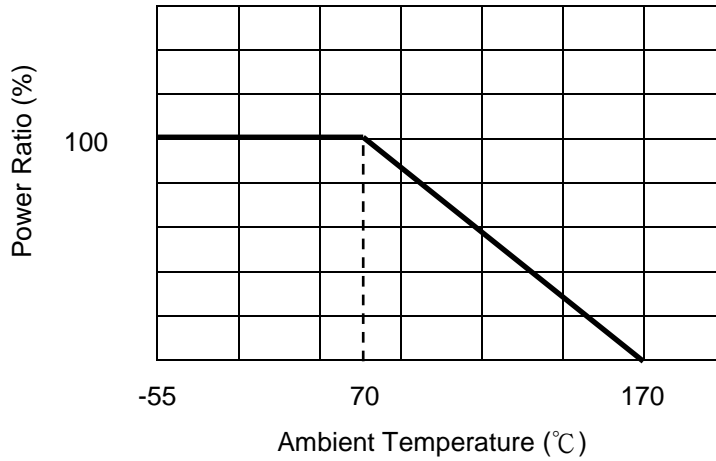
Test Items	Condition of Test	Test Limits
Temperature Coefficient of Resistance	+25 ~ 125℃	Refer 4.0
High Temperature Exposure(Storage)	T=125℃,1000hrs,Measurement at 24hrs after test conclusion.	< ±1%
Low temperature operation	-55 °C for 45 min	< ±0.5%
Temperature Cycling	1000Cycle (-55℃ to 125℃),Measurement 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	



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

Document No	TRLM-100S005E
Issued date	2016/07/29
page	3/6

5.1 Derating Curve



5.2 Rated Voltage

The rated voltage is calculated by the following formula:

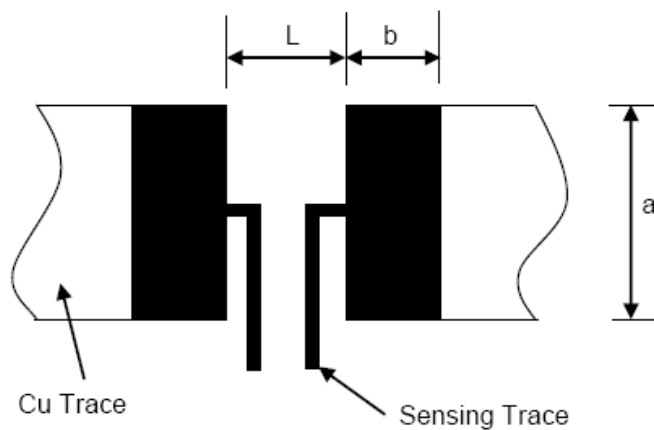
$$V = \sqrt{P \times R}$$

V: Rated Voltage(V)

P: Rated Power(W)

R: Resistance Value(Ω)

6. Recommended Solder Pad Dimension



Resistance Range (Ω)	a	b	L
0.002~0.02	1.4	1.15	1.2

Unit: mm



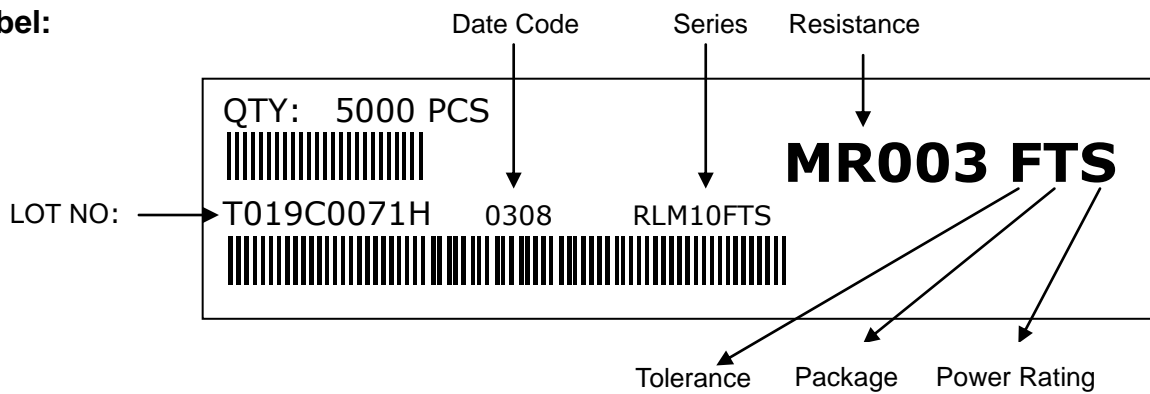
Lead-Free Current Sensing Resistors
RLM Series
 (Halogen-Free)
 AEC-Q 200-Ver D qualified

Document No	TRLM-100S005E
Issued date	2016/07/29
page	4/6

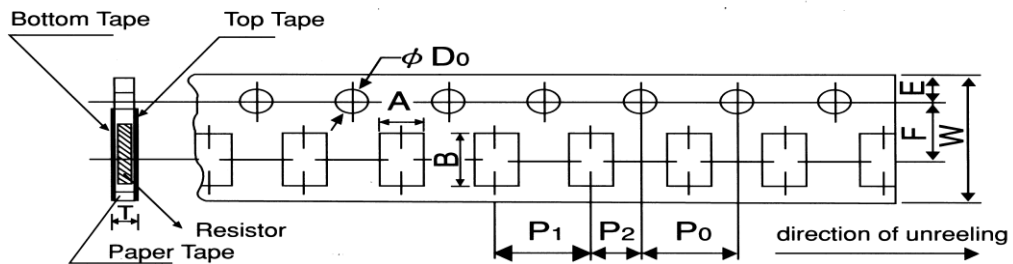
7. Number of Package:

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	Φ 1.5 +0.1 -0	0.84±0.1

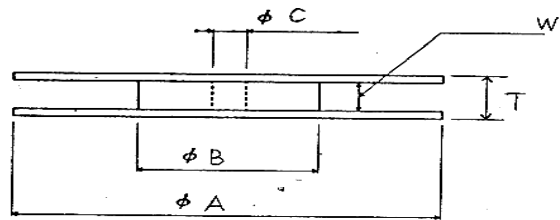
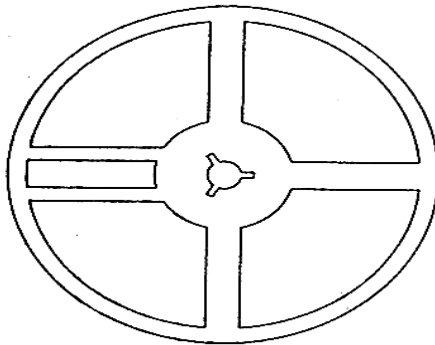
Unit:mm



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

Document No	TRLM-100S005E
Issued date	2016/07/29
page	5/6

10. Reel Specification

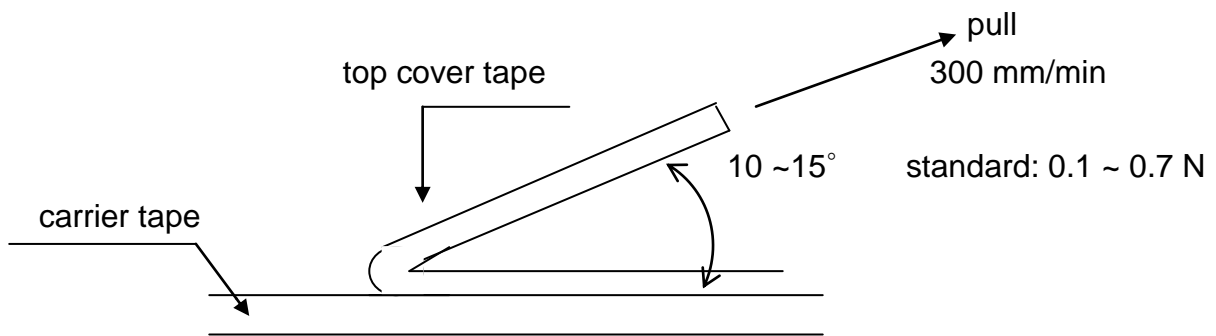


Series	ϕA	ϕB	ϕC	W	T
RLM 10	178.0 \pm 2.0	60.0 \pm 1.0	13.0 \pm 1.0	9.0 \pm 1.0	11.4 \pm 1.0

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:

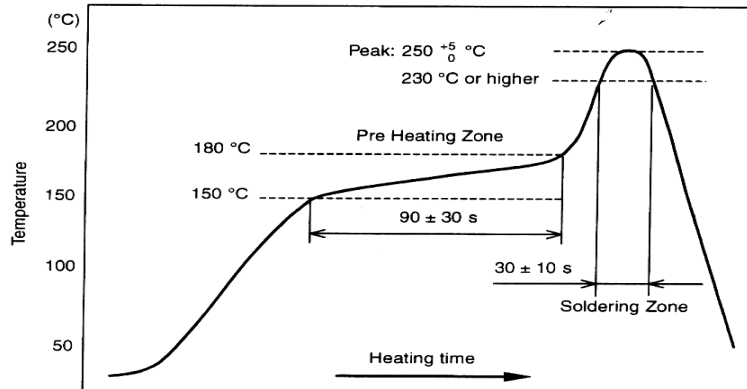
2 years from manufacturing date.



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

Document No	TRLM-100S005E
Issued date	2016/07/29
page	6/6

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



Peak : 260 $\begin{matrix} +5 \\ -5 \end{matrix}$ °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±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 :

(1)TA-I TECHNOLOGY (SU ZHOU) CO., LTD. (China – Su Zhou)

Tel :(+86) 512-63457879 Fax : (+86) 512-63457869

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

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

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

Tel : 604- 3900480 Fax : 604-3901481

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

Tel : 62-21-89830123 Fax : 62-21-89830703