



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

Document No	TRLM-120S032D
Issued date	2017/12/27
page	1/6

**1. Scope :**

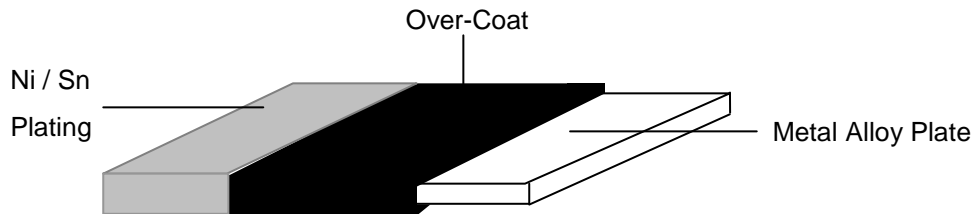
This specification applied to the products of current sensing resistor of metal foil for Lead-Free RLM series manufactured by TA-I TECHNOLOGY CO., LTD.

**2. Type Designation :**

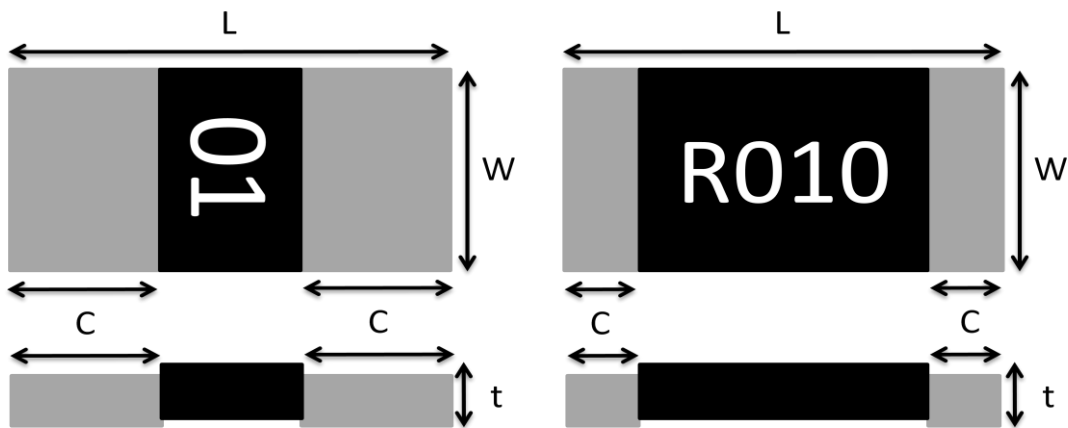
<u>RLM</u> Item	<u>12</u> Series No	<u>E</u> Resistance tolerance	<u>I</u> Packaging	<u>C</u> Power Rating	<u>M</u> Metal	<u>R001</u> Resistance
	12:1206 (3216)	F:±1% G:±2% J:±5%	T: Paper Tape	A=1/4W S=1/2W C=1W D = 1.5W	M= Metal	e.g: R001=1mΩ R030=30mΩ

**3. Construction and Dimension :**

**3.1 Construction:**



**3.2 Dimension:**



UNIT: mm

Style	L	W	C	t	Material
RLM12	3.2±0.20	1.6±0.20	1.1 ± 0.30 (R=1mΩ)	0.75 ± 0.20 (R=1mΩ)	Metal : Alloy Over Coating : molding Compound UL-94 grade
			0.5 ± 0.30 (2mΩ ≤ R ≤ 30mΩ)	0.6 ± 0.20 (2mΩ ≤ R ≤ 30mΩ)	



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

Document No	TRLM-120S032D
Issued date	2017/12/27
page	2/6

**4. Features:**

Type	RLM12
Power Rating	1/4W & 1/2W & 1W & 1.5W
Resistance Value	1~30mΩ (1/4W ~ 1W) 1~5 mΩ (1/4W ~ 1.5W)
Operation Temperature Range	-55°C ~+170°C
Temperature Coefficient of Resistance	±50ppm/°C
Tolerance	±1%、±2%、±5%
Insulation Resistance	Over 100MΩ
Maximum Working Voltage(V)	(P*R) <sup>1/2</sup>

Note\*:1 Watts with total solder pad and trace size of 300mm<sup>2</sup>

**5. Reliability Tests:**

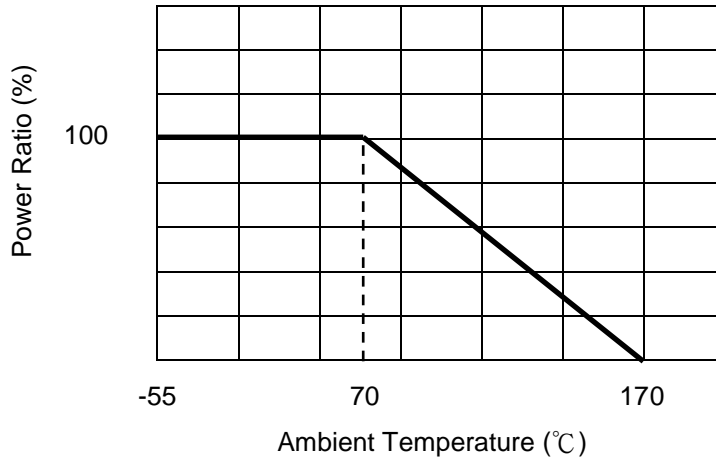
Test Items	Reference	Condition of Test	Test Limits
Temperature Coefficient of Resistance	IEC60115-1 4.8	+25 ~ 125°C	Refer 4.0
High Temperature Exposure(Storage)	MIL-STD-202 Method 108	T=125°C,1000hrs,Measurement at 24hrs after test conclusion.	< ±1%
Low temperature operation	IEC60115-1 4.23.4	-55 °C for 45 min	< ±0.5%
Temperature Cycling	JESD22 Method JA-104	1000Cycle (-55°C to 125 °C),Measurement at 24hrs after test conclusion.	< ±0.5%
Short time overload	IEC60115-1 4.13	5 X rated power for 5s	< ±0.5%
Biased Humidity	MIL-STD-202 Method 103	10% Rated voltage at 85 °C,RH:85% ,1000Hrs, Measurement at 24hrs after test conclusion.	< ±0.5%
Operation life	MIL-STD-202 Method 108	1000 h at +70 °C, 1.5 h "ON", 0.5 h "OFF"	< ±1%
Resistance to Soldering Heat	IEC60115-1 4.18	T=260+/-5°C solder,10+/-1 sec dwell	< ±0.5%
Mechanical Shock	MIL-STD-202 Method 213	100g's , Normal duration is 6ms , half sine shock pulse	< ±0.5%
Resistance to vibration	MIL-STD-202 Method 204	5g's for 20min.12cycles, 10-2000Hz	<±0.5%
Board Flex	AEC-Q200-005	Min 2mm deflection ,60sec.	< ±0.5%
Flammability	UL-94	V-0 or V-1are acceptable, Electrical test not required	



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

Document No	TRLM-120S032D
Issued date	2017/12/27
page	3/6

### 5.1 Derating Curve



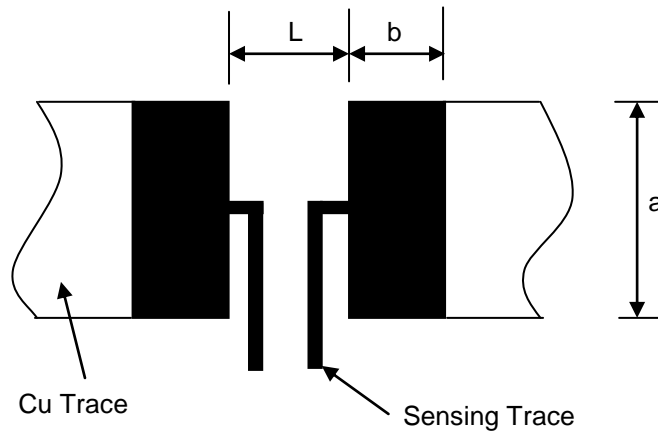
### 5.2 Rated Current

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	1.8	2.3	1.0
0.002~0.030	1.8	1.7	1.6

Unit: mm



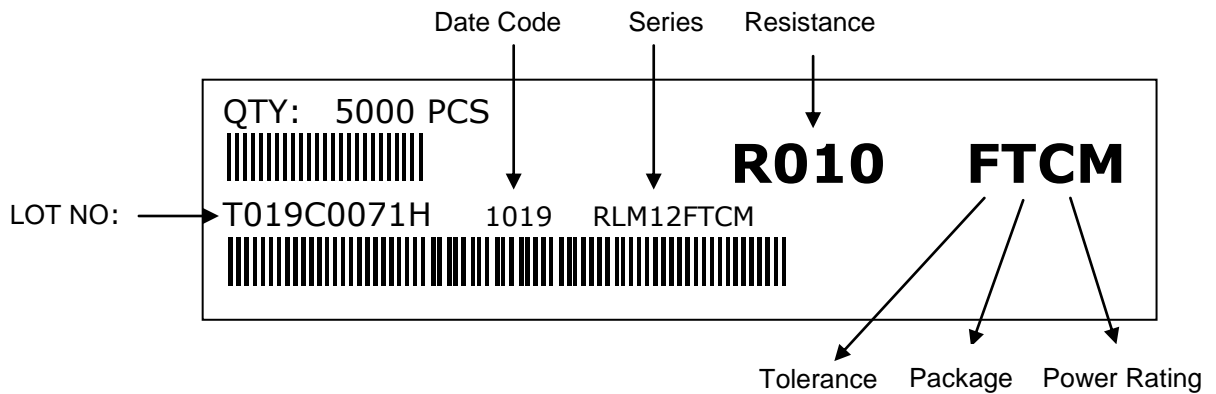
**Current Sensing Resistors  
RLM Series  
( Halogen-Free )  
AEC-Q 200-Ver D qualified**

Document No	TRLM-120S032D
Issued date	2017/12/27
page	4/6

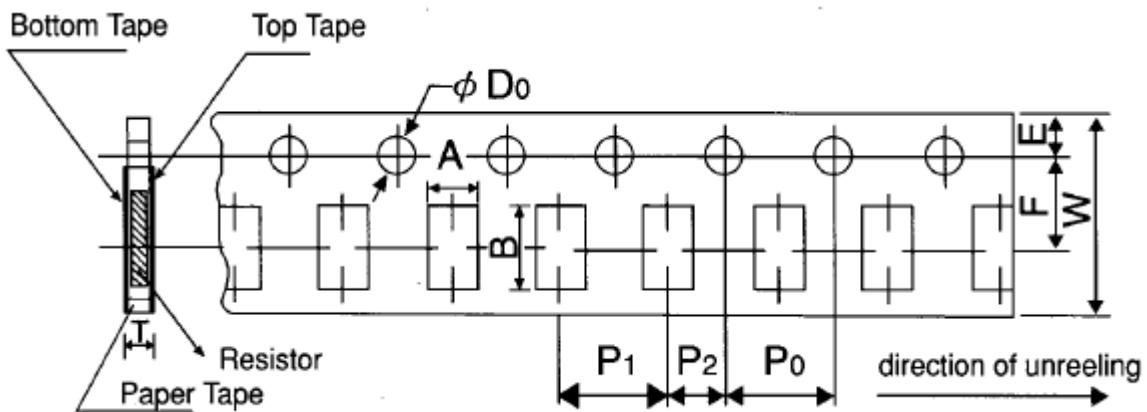
**7. Number of Package:**

5000 Pieces / package

**8. Label:**



**9. Taping**



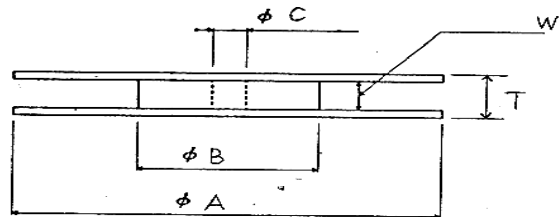
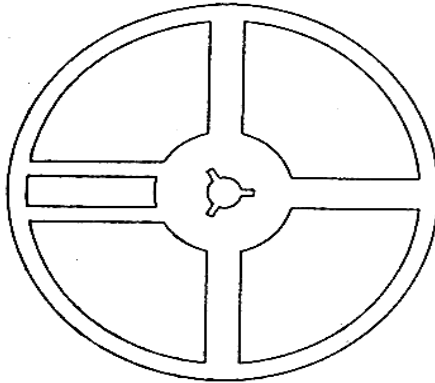
Packing	Type	A	B	W	F	E	P <sub>1</sub>	P <sub>2</sub>	P <sub>0</sub>	D <sub>0</sub>	T
Paper Tape	RLM12	2.0±0.15	3.6±0.2	8.0±0.2	3.5±0.05	1.75±0.1	4.0±0.1	2.0±0.05	4.0±0.1	φ 1.5 (+0.1/-0)	0.84±0.1



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

Document No	TRLM-120S032D
Issued date	2017/12/27
page	5/6

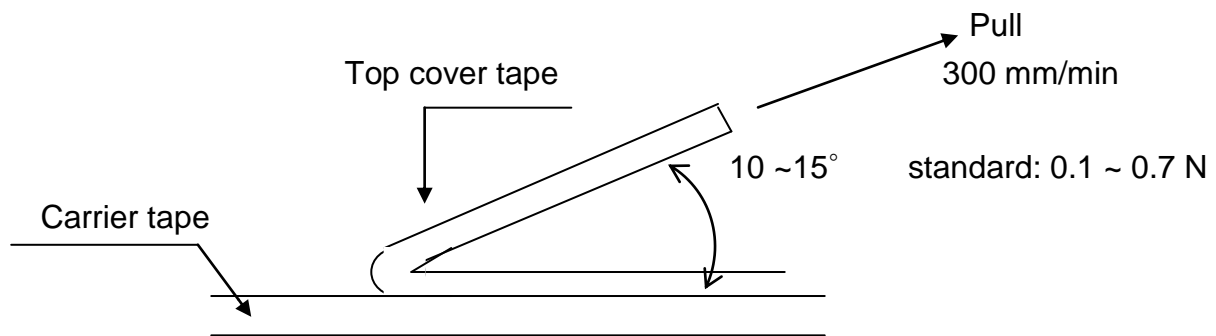
**10. Reel Specification**



Series	$\phi A$	$\phi B$	$\phi C$	W	T
RLM12	178±2.0	60.0±1.0	13.0±1.0	9.0±1.0	11.5±1.0

**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°C~35°C, Humidity: 40%~75%

**13. Shelf Life:**

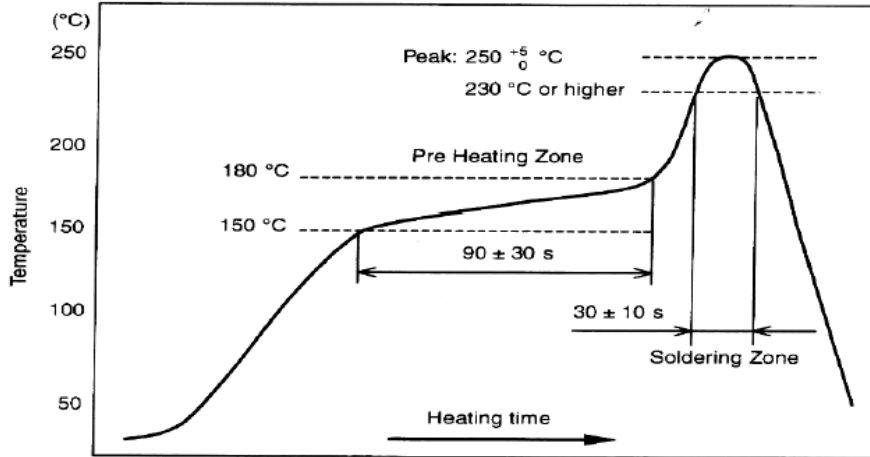
2 years from manufacturing date.



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

Document No	TRLM-120S032D
Issued date	2017/12/27
page	6/6

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



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

Pre-heat zone : 150 to 180 °C , 90±30 sec

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

**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) 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

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Current Sense Resistors - SMD category](#):*

*Click to view products by [TA-I Tech manufacturer](#):*

Other Similar products are found below :

[5112](#) [65709-330JE](#) [PF2512FKF7W0R007L](#) [PR2512FKF7W0R003L](#) [PR2512FKF7W0R005L](#) [RCWL0603R500JNEA](#) [ERJ-3BQF1R1V](#) [ERJ-L14UJ42MU](#) [2-2176088-5](#) [PF2512FKF7W0R006L](#) [PF2512FKF7W0R033L](#) [2-2176089-4](#) [CD2015FC-0.10-1%](#) [PR2512FKF7W0R004L](#) [CGSSL1R01J](#) [CGSSL1R047J](#) [RC1005F124CS](#) [RCWE2512R110FKEA](#) [RCWL0805R330JNEA](#) [RL73H3AR47FTE](#) [RL73K3AR56JTDF](#) [RL7520WT-R001-F](#) [RL7520WT-R009-G](#) [RL7520WT-R020-F](#) [RLP73N1ER43JTD](#) [TL3AR01FTDG](#) [TLR3A20DR0005FTDG](#) [LRC-LR2512LF-01-R820J](#) [ERJ-3BQF4R3V](#) [ERJ-L14UF68MU](#) [TLR3A20DR001FTDG](#) [TLR3A30ER0005FTDG](#) [WR06X104JGLJ](#) [RLP73K1ER82JTD](#) [TL2BR01F](#) [TLR3A20DR01FTDG](#) [WSR3R0600FEA32](#) [ERJ-14BQF1R6U](#) [ERJ-14BQJR30U](#) [SP1220RJT](#) [SP1R12J](#) [ERJ-14BQF6R2U](#) [RL7520WT-R039-G](#) [PF1206FRF7W0R02L](#) [RL7520WT-R002-F](#) [RL7520WT-R047-F](#) [RLP73N2BR068FTDF](#) [RL7520WT-R005-F](#) [RCWE2512R220FKEA](#) [RCWE120625L0FMEA](#)