



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

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**1. Scope :**

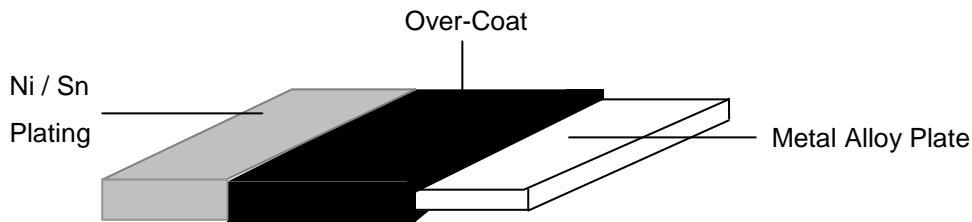
This specification applied to the products of current sensing resistor of metal plate for Lead-Free RLP series manufactured by TA-I TECHNOLOGY CO.,LTD.

**2. Type Designation :**

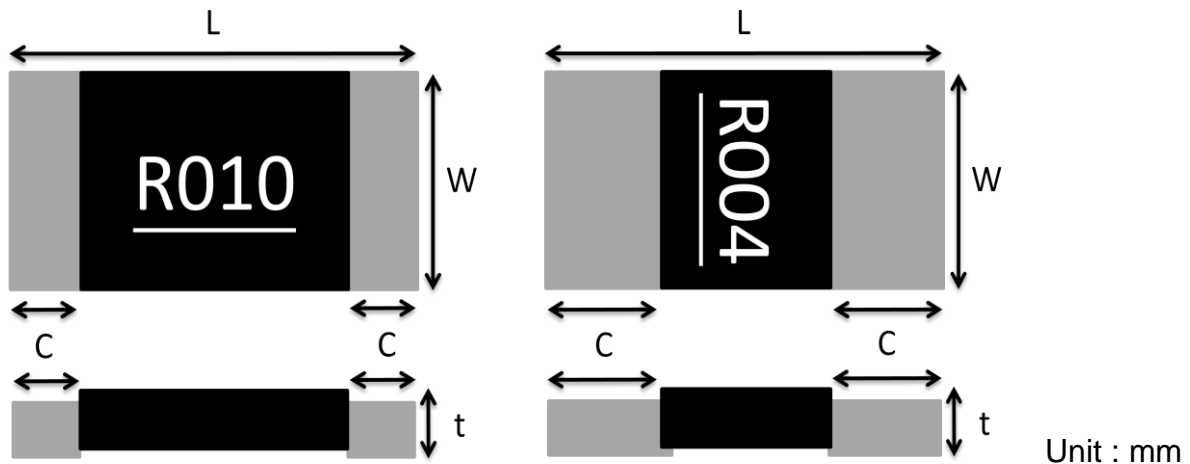
<u>R</u> L <u>P</u> Item	<u>2</u> 5 Series No.	<u>E</u> Resistance tolerance	<u>E</u> Packaging	<u>C</u> Power rating	<u>M</u> Metal	<u>R</u> 0 <u>1</u> 0 Resistance
	25:2512 (6432)	F:±1% G:±2% J:±5%	E: Embossed Tape	C=1W D=1.5W E=2W G=3W	M=Mn/Cu	e.g : R010=10mΩ

**3. Construction and Dimension :**

**3.1 Construction:**



**3.2 Dimension:**



Style	L	W	C	T	Material
RLP25	6.4±0.2	3.2±0.2	2.0±0.2(≤4mΩ)	0.9 ±0.20	Strip : Alloy Over Coating : molding Compound UL-94V-0 grade
			0.9±0.2(R>4mΩ)		



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**4. Features:**

Type	RLP25
Power Rating	$1\text{ m}\Omega \leq R \leq 70\text{m}\Omega$ (1W、1.5W、2W、3W)
Resistance Value	$1\text{ m}\Omega \sim 70\text{m}\Omega$
Operation Temperature Range	$-55^{\circ}\text{C} \sim +170^{\circ}\text{C}$
Temperature Coefficient of Resistance	$\pm 50\text{ppm}/^{\circ}\text{C}$
Tolerance	$\pm 1\%, \pm 2\%, \pm 5\%$
Insulation Resistance	Over 100M $\Omega$
Maximum Working Current( I )	$(P/R)^{1/2}$

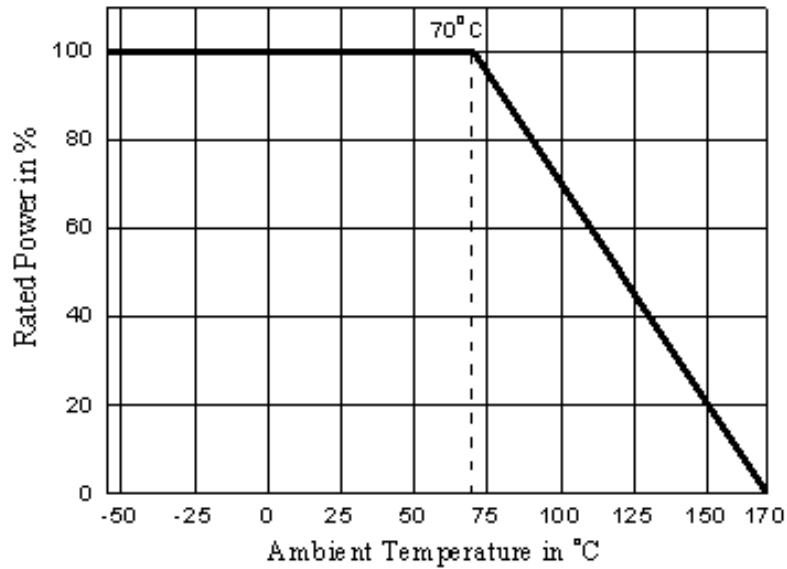
Note: For 2&3watts, copper foil minimum thickness of PCB : 105  $\mu\text{m}$

**5. Reliability Tests :**

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



### 5.1 Derating Curve



### 5.2 Rated Current

The rated voltage is calculated by the following Formula:

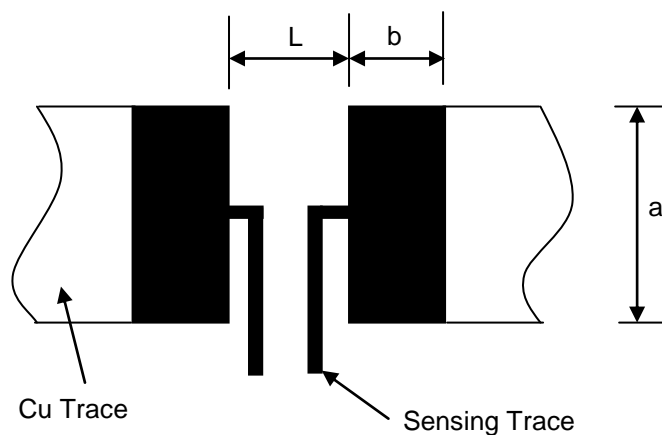
$$I = \sqrt{P \div R}$$

I:Rated Current(I)

P:Rated Power(W)

R:Resistance Value(Ω)

### 6. Recommended Solder Pad Dimension



Resistance Range (Ω)	a	b	L
R > 0.004	4.0	2.1	4.1
R ≤ 0.004	4.0	3.1	1.3

Unit: mm



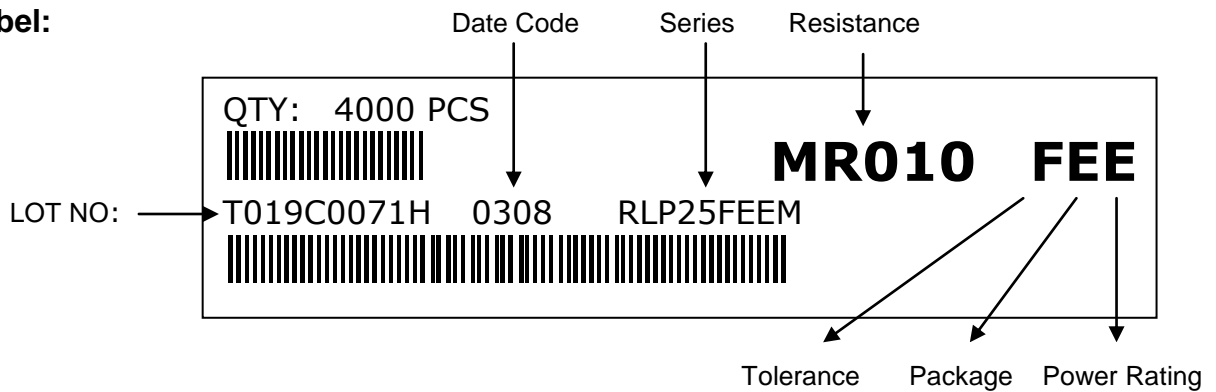
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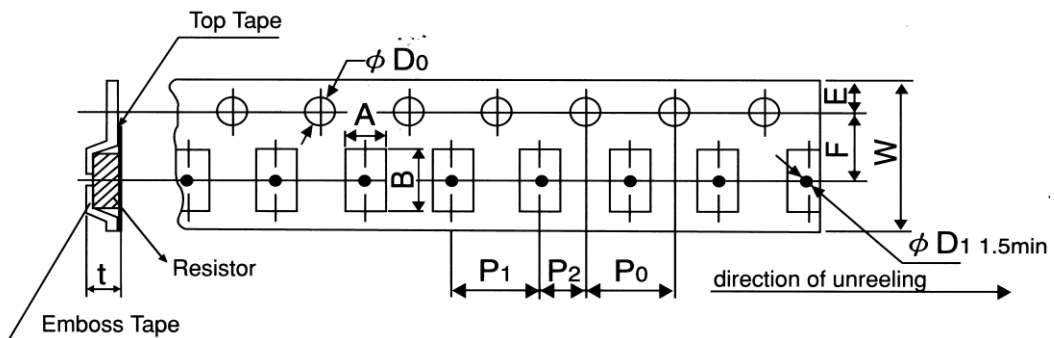
7. Number of Package:

4000 Pieces / package

8. Label:



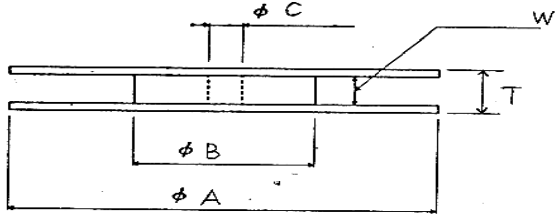
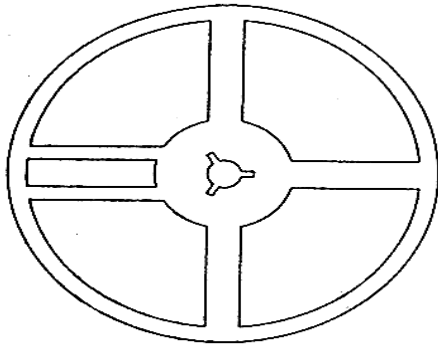
9. Taping



Packing	Type	A	B	W	F	E	P <sub>1</sub>	P <sub>2</sub>	P <sub>0</sub>	D <sub>0</sub>	t
Emboss	RLP25	3.6±0.2	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	$\phi 1.5$ (+0.1/-0)	1.2±0.15



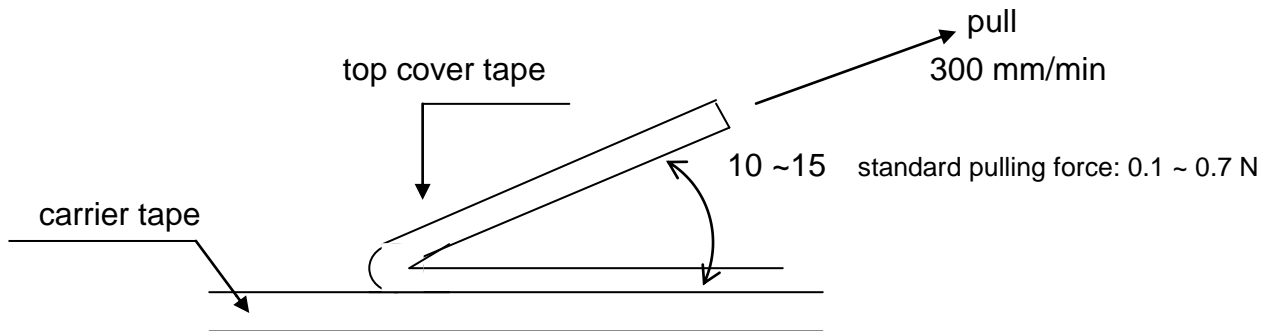
### 10. Reel Specification



Series	$\phi A$	$\phi B$	$\phi C$	W	T
RLP 25	180 <sup>+0</sup> <sub>-3</sub>	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°C~35°C, Humidity: 40%~75%

### 13. Shelf Life:

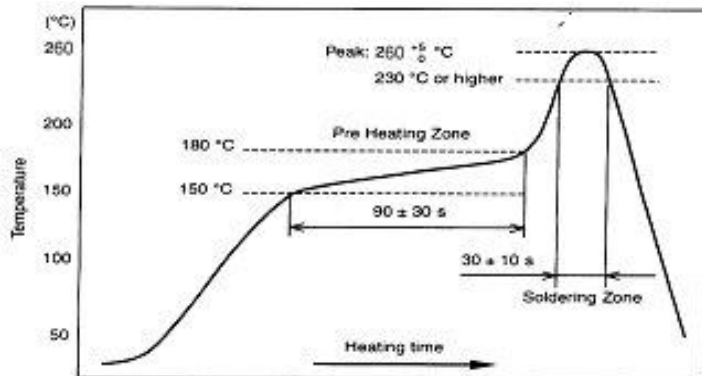
2 years from manufacturing date.



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



**Peak : 260  $\begin{matrix} + 5 \\ - 0 \end{matrix}$  °C , 5 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 )

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

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

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

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[PR2512FKF7W0R004L](#) [RC1005F124CS](#) [RL73K3AR56JTDF](#) [RL7520WT-R001-F](#) [RL7520WT-R009-G](#) [RL7520WT-R020-F](#) [LRC-](#)  
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[SR731ERTTP4R7J](#) [SR731ERTTP9R1J](#) [SR731ERTTP1R0J](#) [SR731ERTTP2R2J](#) [SR731ERTTP5R1J](#) [SR731ERTTP6R8J](#) [SR731ERTTP9R10F](#)  
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