



High Power Current Sensing Resistors RLP Series (Halogen-Free)

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1. Scope :

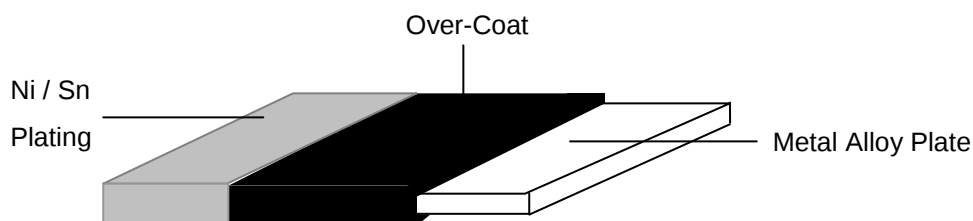
This specification applied to the products of current sensing resistor of metal foil for Lead-Free RLP series manufactured by TA-I TECHNOLOGY CO.,LTD.

2. Type Designation :

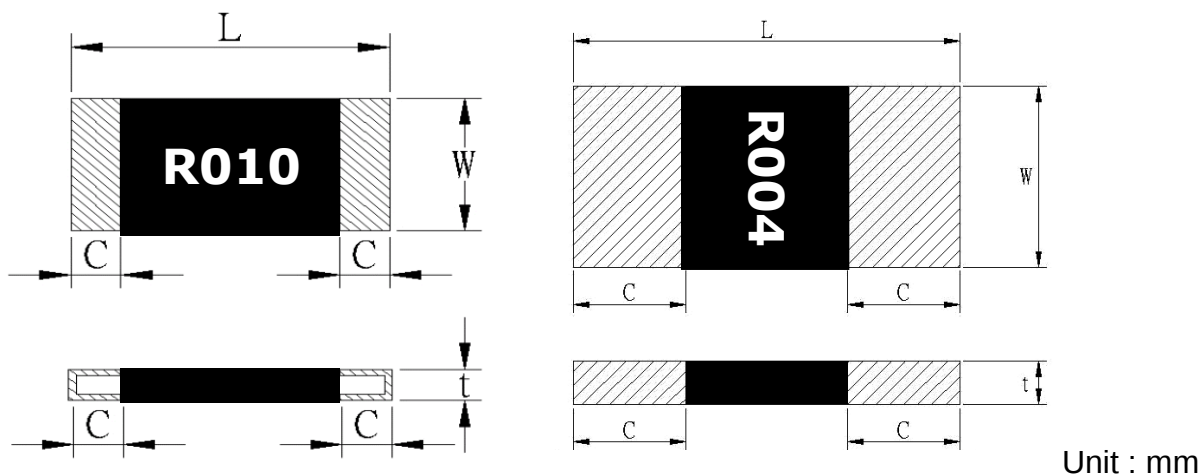
<u>RLP</u> Item	<u>25</u> Series No.	<u>E</u> Resistance tolerance	<u>E</u> Packaging	<u>C</u> Power rating	<u>R010</u> Resistance
	25:2512 (6432)	F:±1% G:±2% J:±5%	E: Embossed Tape	C=1W D=1.5W E=2W G=3W	e.g : R010=10mΩ R100=100mΩ R500=500mΩ

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)	0.7 ±0.20	Strip : Alloy Over Coating : Polymer Compound UL-94V-0 grade
			0.9±0.2(R>4mΩ)		



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4. Features:

Type	RLP25
Power Rating	$1\text{ m}\Omega \leq R \leq 100\text{ m}\Omega$ (1W、1.5 W、2 W、3W) $100\text{ m}\Omega < R \leq 500\text{ m}\Omega$ (1W、1.5 W、2 W)
Resistance Value	1 m Ω ~500m Ω
Operation Temperature Range	-55℃~+170℃
Temperature Coefficient of Resistance	±75ppm/℃
Tolerance	±1%,±2%,±5%
Insulation Resistance	100 Meg Ohms Minimum
Maximum Working Current (A)	$(P/R)^{1/2}$

5. Reliability Tests :

Test Items	Reference standard	Condition of Test	Test Limits
Temperature Coefficient of Resistance	IEC60115-1 4.8 JIS C 5201-1 4.8	+25℃ ~ +125℃	Refer 4.0
Load Life	IEC60115-1 4.25.1 JIS C 5201-1 4.25.1	1000hours at rated power, 70℃, 1.5hours "ON", 0.5hour "OFF"	< ±1%
Short Time Overload	IEC60115-1 4.13 JIS C 5201-1 4.13	5 X rated power for 5s	< ±0.5%
Moisture no Load	IEC60115-1 4.24.2.1a) JIS C 5201-1 4.24.2.1a)	85℃, 85%RH, 1000hrs	< ±1%
Temperature cycle	IEC60115-1 4.19 JIS C 5201-1 4.19	-55℃ & +155℃, 300cycle, 15min per extreme condition	< ±0.5%
Resistance to Soldering Heat	IEC60115-1 4.18 JIS C 5201-1 4.18	260±5℃ for 20±1 sec	< ±0.5%
Solderability	IEC60115-1 4.17 JIS C 5201-1 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 C 5201-1 4.23.2	170℃, 1000hrs	< ±1%
Low Temperature Storage	IEC60115-1 4.23.4 JIS C 5201-1 4.23.4	-55℃, 1000hrs	<±0.5%
Substrate Bending	IEC60115-1 4.33 JIS C 5201-1 4.33	Bending width 2mm	< ±1%
Insulation Resistance	IEC60115-1 4.6 JIS C 5201-1 4.6	100V DC for 1 minute	>100 M Ω

Note: 2&3watts total Solder pad and trace size of 300mm



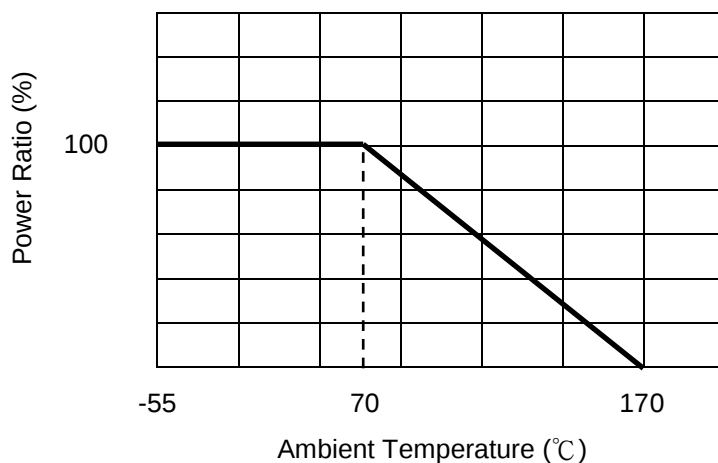
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5.1 Derating Curve



5.2 Rated Current

The rated current is calculated by the following Formula:

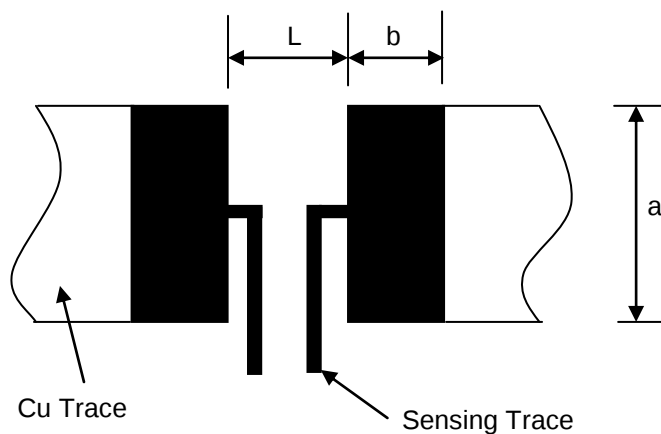
$$I = \sqrt{P/R}$$

I : Rated Current (A)

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
$R \leq 0.004$	4.0	3.1	1.3

Unit: mm



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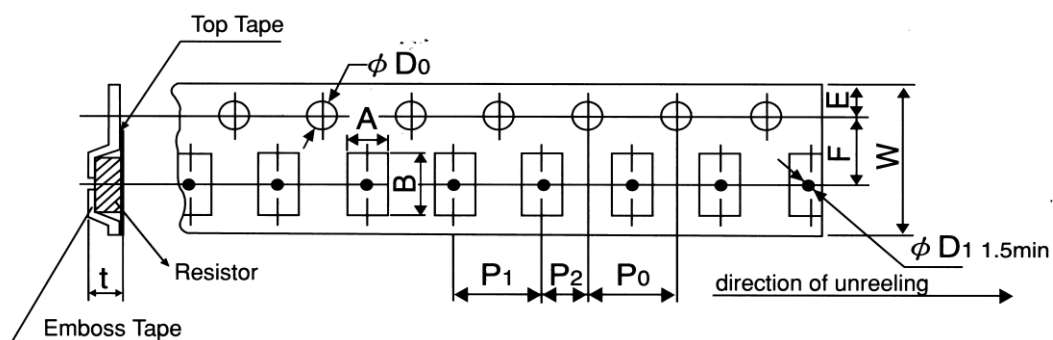
7. Number of Package:

4000 Pieces / package

8. Label:



9. Taping



Packing	Type	A	B	W	F	E	P ₁	P ₂	P ₀	D ₀	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	ϕ 1.5 (+0.1/-0)	1.2±0.15



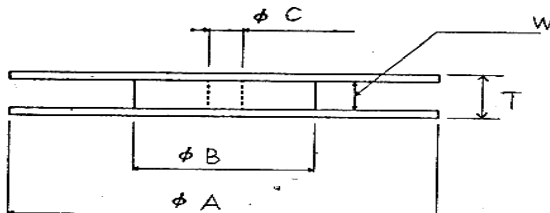
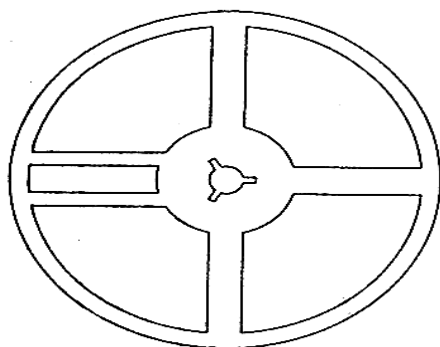
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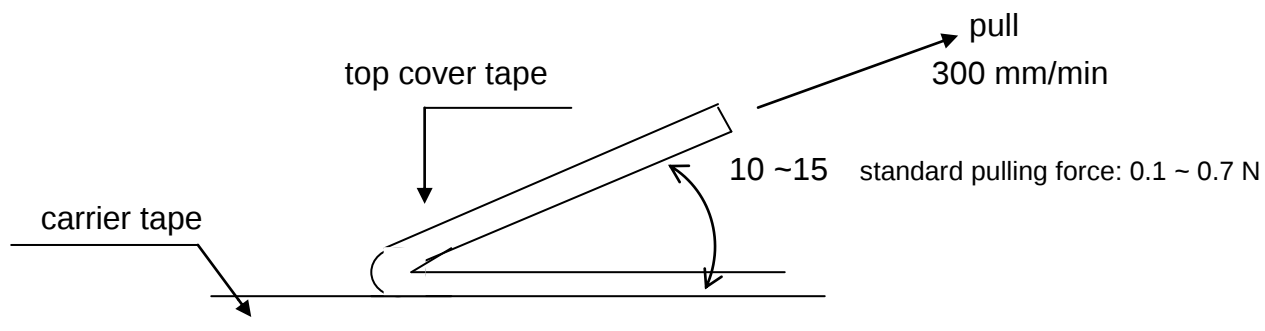
10. Reel Specification



Series	ϕA	ϕB	ϕC	W	T
RLP 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°C~35°C, Humidity: 40%~75%

13. Shelf Life:

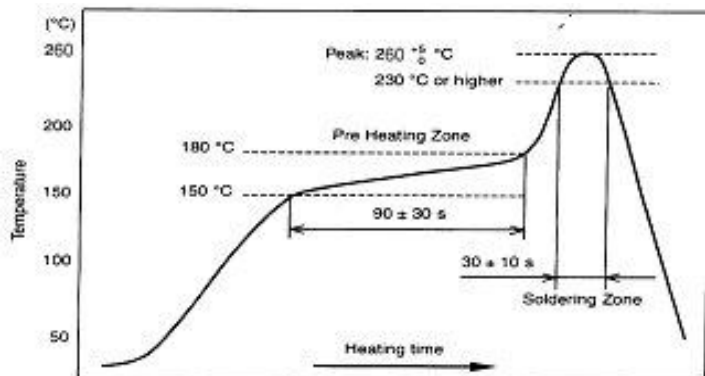
2 years from manufacturing date.



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



Peak : $260 \begin{smallmatrix} +5 \\ -0 \end{smallmatrix}^{\circ}\text{C}$, 5 sec

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

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

Iron Solder: $350 \pm 10^{\circ}\text{C}$, 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) 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