1. Scope

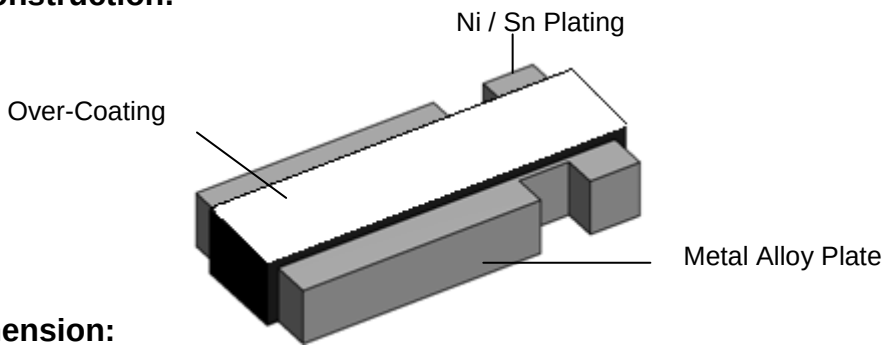
This specification applied to the products of Lead-Free current sensing resistor of metal foil for Lead-Free RLF series manufactured by TA-I TECHNOLOGY CO.,LTD.

2. Type Designation

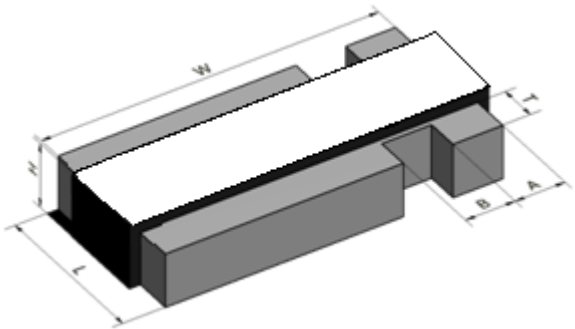
RLF	06	F	E	C	(M)	R001
Item	Series No	Resistance tolerance	Packaging	Power Rating	Metal	Resistance
	06:0612	F:±1% G:±2% J:±5%	E:Embossed Tape	S=1/2W C=1 W	M=MnCu	e.g: R001=1mΩ R50M=0.5mΩ

3. Construction and Dimension

3.1 Construction:



3.2 Dimension:



Unit: mm

Style	L	W	H	T	A	B	Material
RLF06	1.65±0.2	3.05±0.25	0.65±0.2	0.4±0.25	0.51±0.13	0.51±0.13	Strip： Alloy Over Coating：molding Compound UL-94V-O grade

Note* Patent Pending

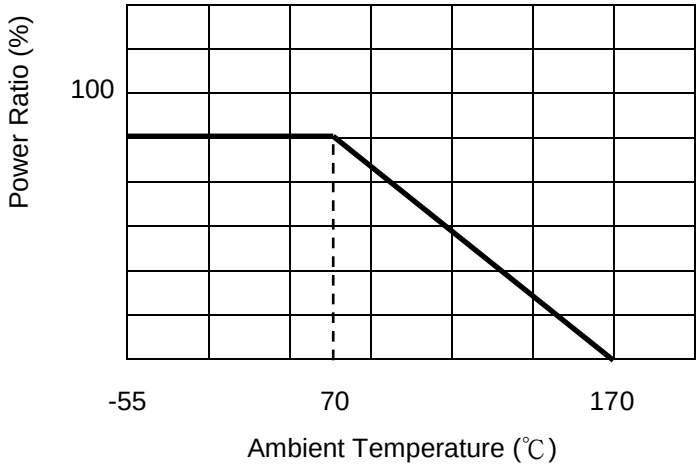
4. Features

Type	RLF
Power Rating	1/2 W&1W
Resistance Value	0.5mΩ~5mΩ
Operation Temperature Range	-55℃~+170℃
Temperature Coefficient of Resistance	± 200ppm/°C (0.5mΩ≦R≦3mΩ)
	± 150ppm/°C (3 mΩ≦R≦5mΩ)
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 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”	< ±2%
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	< ±0.5%
Temperature cycle	IEC60115-1 4.19 JIS C 5201-1 4.19	-55℃ & +155℃, 300cycle, 15min per extreme condition	< ±1%
Resistance to Soldering Heat	IEC60115-1 4.18 JIS C 5201-1 4.18	260±5℃ for10±1 sec 2 cycle	< ±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	< ±2%
Low Temperature Storage	EC60115-1 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	< ±0.5%
Insulation Resistance	IEC60115-1 4.6 JIS C 5201-1 4.6	100V DC for 1 minute	>100 MΩ

5.1Derating Curve



5.2 Rated Voltage

The rated voltage is calculated by the following formula:

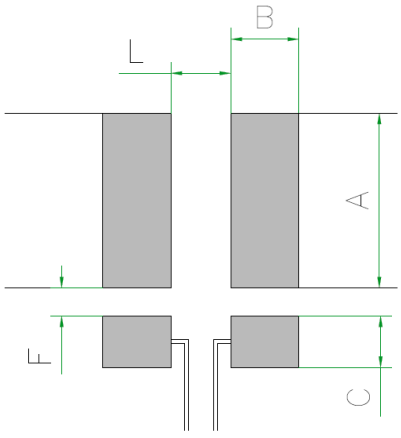
$$V=\sqrt{P \times R}$$

V: Rated Voltage (V)

P: Rated Power (W)

R: Resistance Value(Ω)

6. Recommended Solder Pad Dimension



Copper foil minimum thickness of PCB: 3oz

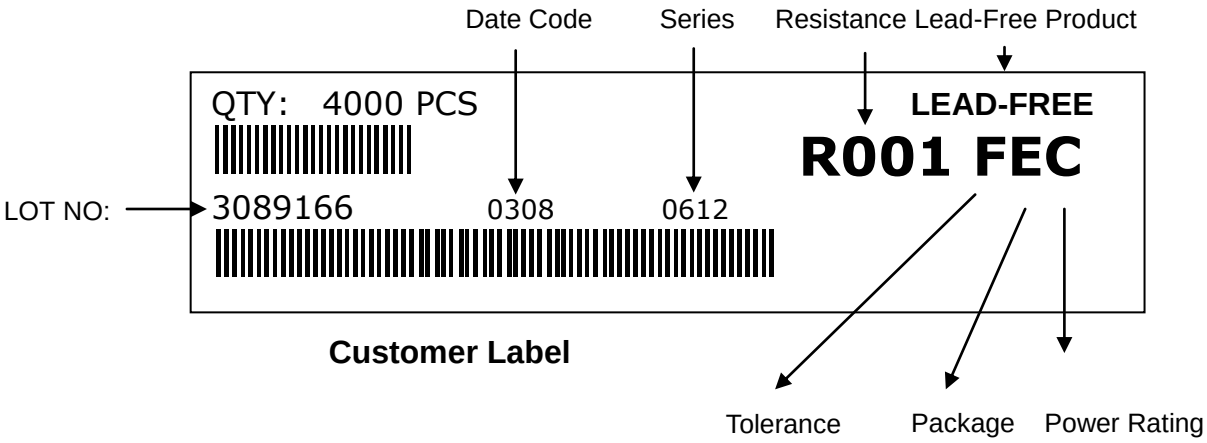
Resistance Range (Ω)	A	B	C	L	F
0.0005-0.005	2.3	1.0	0.8	0.7	0.4

Unit: mm

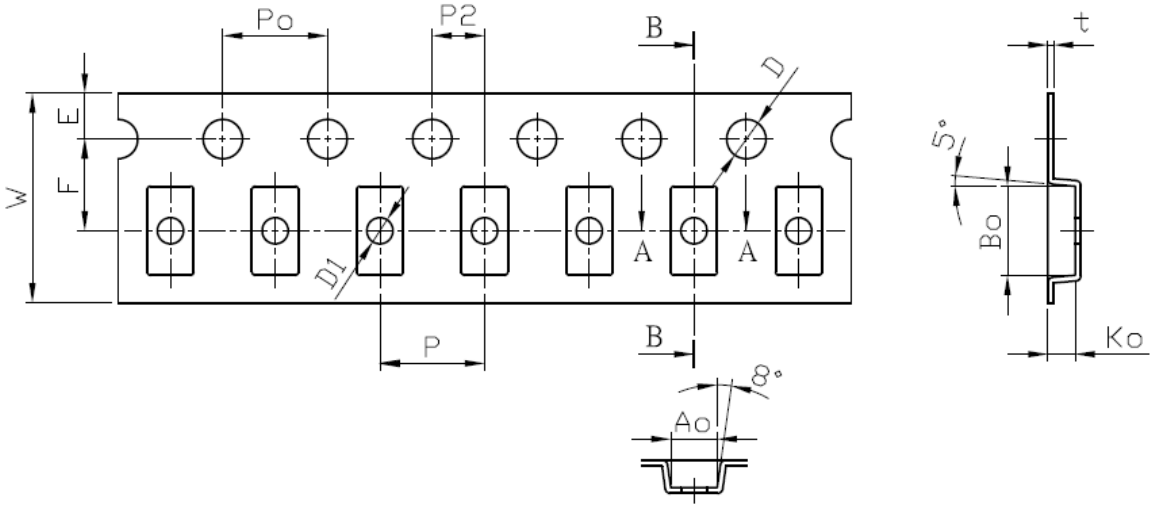
7. Number of Package:

4000 Pieces / package

8. Label:



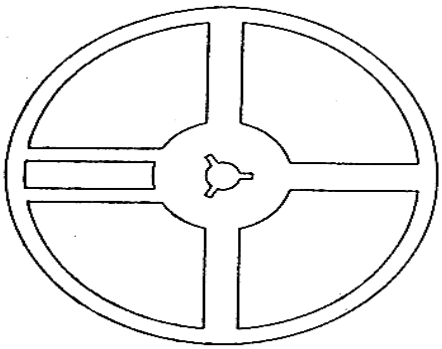
9. Taping

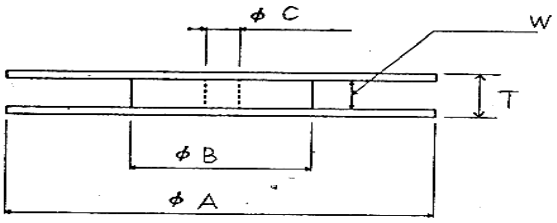


Type	Packing	W	P	E	F	P2	D	D1	P_0	$10P_0$	A_0	B_0	K_0	t
RLF06	Emboss	8.00	4.00	1.75	3.50	2.00	1.50	1.00	4.00	40.00	1.77	3.40	1.04	0.22
	Tolerance	±0.10	±0.10	±0.10	±0.05	±0.05	+0.10 -0.00	±0.10	±0.10	±0.20	±0.10	±0.10	±0.10	±0.05

Unit: mm

10. Reel Specification



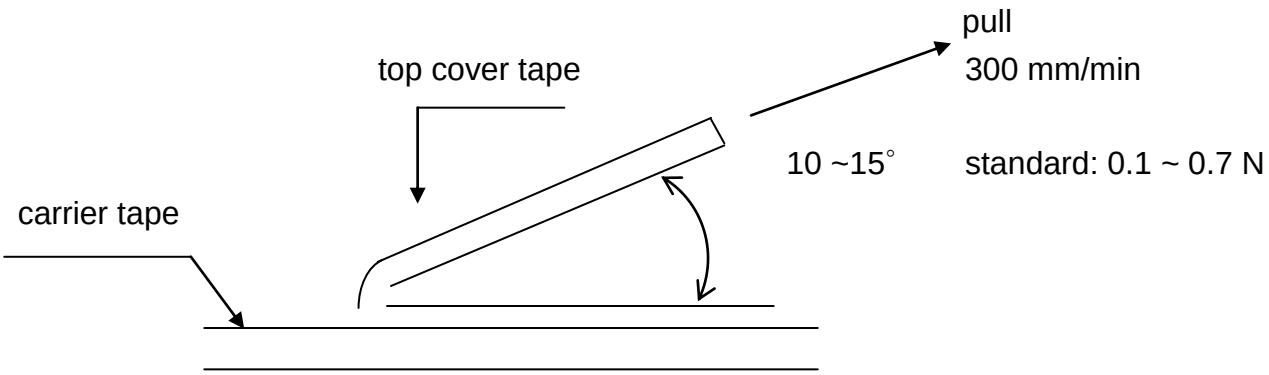


Series	ϕA	ϕB	ϕC	W	T
RLF06	178±2.0	60.0±1.0	13.0±1.0	9.0±1.0	11.5±1.0

Unit: mm

11. Peeling Strength of Top Cover Tape

Test Condition: 0.1 to 0.7 N at a peel-off speed of 300 mm / min.



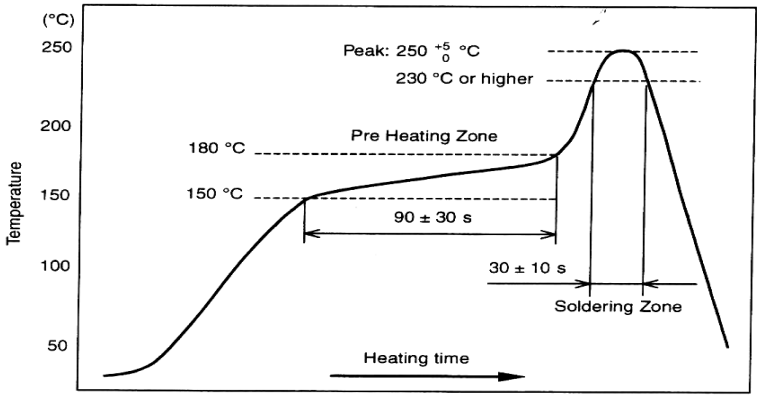
12. Storage Conditions:

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 : 260 $^{+5}_{-5}$℃ , 10±1 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.

16. Manufacturing Country & City :

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