



High Power Low Resistance Chip Resistors (RLH12 Series)

Document No	TRLH-120S001B
Issued date	2012/10/18
Page	1/8

1. Scope :

The specification applies for the RLH12 Series of low resistance chip resistors made by TA-I.

2. Features:

- ◆ Low Resistance and High Accuracy Resistor for Current Detection
- ◆ Large Electrode (All series)
- ◆ Good Performance for Heat Dissipation
- ◆ High Purity Alumina Substrate for High Power Dissipation
- ◆ Pb-free to Meet RoHS Requirements

3. Applications:

- ◆ Power Management Applications
- ◆ Switching Power Supply
- ◆ DC-DC Converter, Battery Pack, Charger, Adaptor
- ◆ Portable Instruments (PDA and Cell Phone)
- ◆ Voltage Regulation Module (VRM)
- ◆ Computer

4. Type Designation:

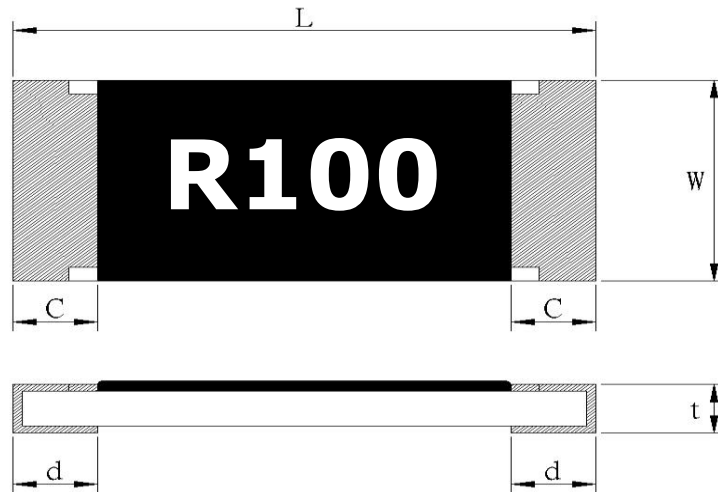
RLH	12	F	T	C	R100
High Power Low Resistance Chip Resistors	Size	Tolerance of Resistance at	Packaging	Power Rating (70°C)	Nominal Resistance
	12:1206	F:±1.0% G:±2.0% J:±5.0%	T: Paper	C=1W	R100 : 100mΩ



High Power Low Resistance Chip Resistors (RLH12 Series)

Document No	TRLH-120S001B
Issued date	2012/10/18
Page	2/8

5. Dimensions:



Unit: mm

Item	L	w	c	d	t
RLH12	3.10±0.20	1.55±0.20	0.50±0.30	0.40±0.20	0.55±0.10

6. Derating Curve :

For resistors operated at ambient temperature over 70°C, power rating shall be derated in accordance with figure 1.

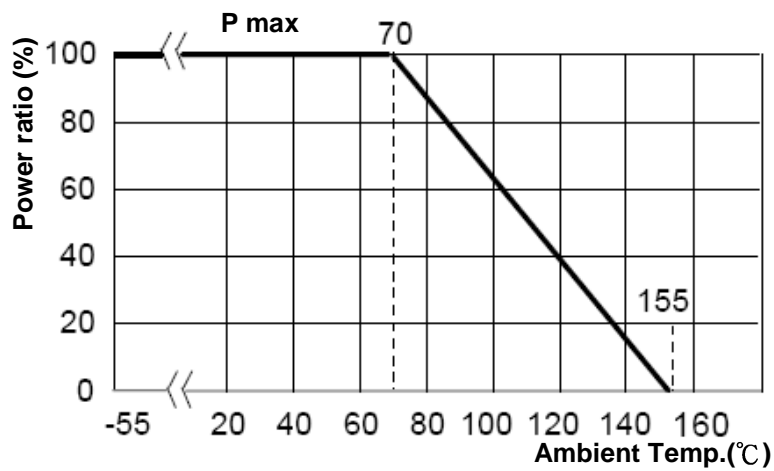


Figure 1



High Power Low Resistance Chip Resistors (RLH12 Series)

Document No	TRLH-120S001B
Issued date	2012/10/18
Page	3/8

7. Electrical Characteristics

Type	RLH 12
Power Rating	1W
Resistance Value	100m Ω ~910m Ω
Operation Temperature Range	-55 $^{\circ}$ C ~ +155 $^{\circ}$ C
Temperature Coefficient of Resistance	100ppm/ $^{\circ}$ C
Tolerance	\pm 1% , \pm 2% , \pm 5%
Insulation Resistance	Over 100M Ω
Maximum Working Voltage(V)	(P*R) ^{1/2}

8. Reliability Tests:

Test Item	Reference standard	Condition of Test	Test Limits
Temperature Coefficient of Resistance	IEC60115-1-4.8 JIS-C5201-1-4.8	25 $^{\circ}$ C ~ 125 $^{\circ}$ C	Refer to paragraph 6
Short Time Overload	IEC60115-1-4.13 JIS-C5201-1-4.13	5 X rated power, 5s	\pm (1.0%+0.5m Ω)
Load Life	IEC60115-1-4.25.1 JIS-C5201-1-4.25.1	1000 hours at rated power, at 70 $^{\circ}$ C	\pm (5.0%+0.5m Ω)
Load Life with Humidity	IEC60115-1-4.24 JIS-C5201-1-4.24	1000 hours at rated power , 40 \pm 2 $^{\circ}$ C , 90~95% RH	\pm (5.0%+0.5m Ω)
Thermal Shock	IEC60115-1-4.19 JIS-C5201-1-4.19	-55 $^{\circ}$ C (15 min.) / +155 $^{\circ}$ C (15 min.) 5 cycles	\pm (1.0%+0.5m Ω)
Resistance to Solder Heat	IEC60115-1-4.18 JIS-C5201-1-4.18	270 \pm 5 $^{\circ}$ C solder , 10 \pm 1 sec dwell .	\pm (1.0%+0.5m Ω)
Solder ability	IEC60115-1-4.17 JIS-C5201-1-4.17	245 \pm 5 $^{\circ}$ C solder, 2 \pm 0.5 sec dwell. Solder : Sn96.5 / Ag3.0 / Cu0.5	At least 95% of surface area of electrode shall be covered with new solder.
Bending Test	IEC60115-1-4.33 JIS-C5201-1-4.33	1mm deflection	\pm (1.0%+0.5m Ω)
Resistance to Dry Heat	IEC60115-1-4.23.2 JIS-C5201-1-4.23.2	155 \pm 5 $^{\circ}$ C for 96 \pm 4hrs	\pm (1.0%+0.5m Ω)



High Power Low Resistance Chip Resistors (RLH12 Series)

Document No	TRLH-120S001B
Issued date	2012/10/18
Page	4/8

9. Marking:

From 1206:

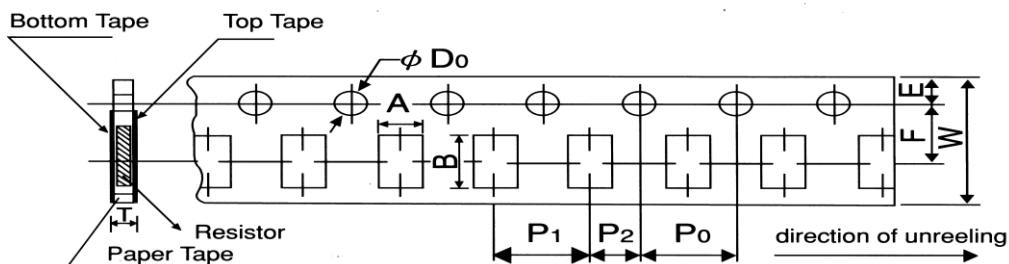
Resistance value is expressed by 4 digits, the first "R" means decimal point and the other digits represent for the normal resistance in Ω .

eg., $100\text{m}\Omega = \text{R}100$

10. Taping & Reel

10.1 Taping Dimensions

10.1.1 4 mm pitch paper



UNIT: mm

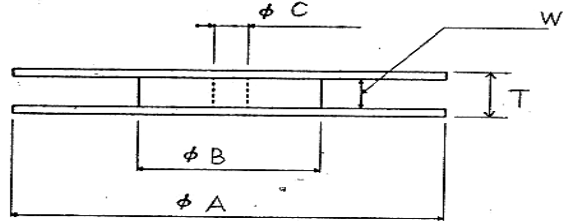
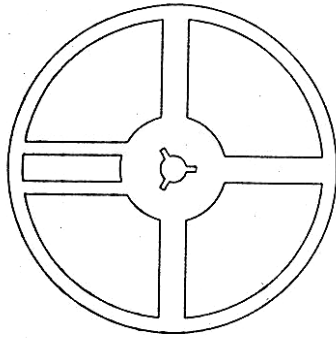
Packing	Type	A	B	W	F	E	P ₁	P ₂	P ₀	D ₀	T
Paper Tape	RLH12	2.0±0.15	3.6±0.2	8.0±0.2	3.5±0.05	1.75±0.1	4.0±0.1	2.0±0.1	4.0±0.1	Φ 1.5 +0.1 -0.1	0.84±0.1



High Power Low Resistance Chip Resistors (RLH12 Series)

Document No	TRLH-120S001B
Issued date	2012/10/18
Page	5/8

10.2 Reel Specifications

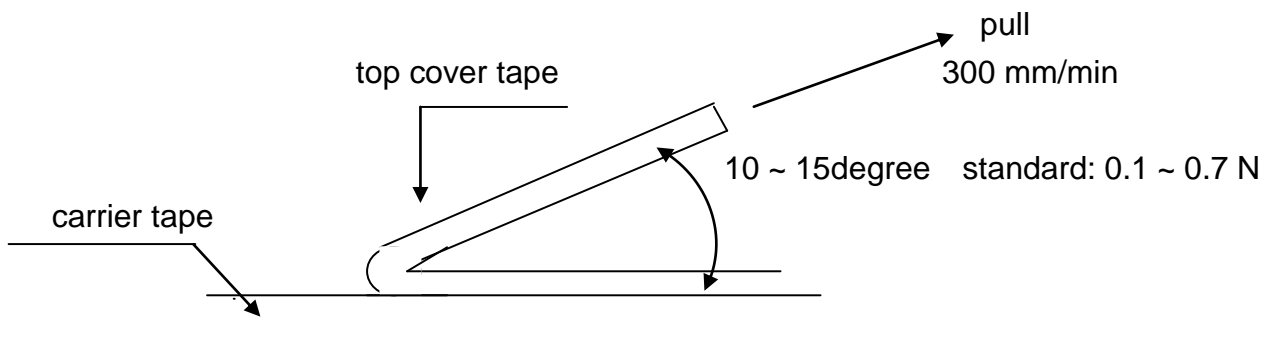


UNIT: mm

Type	ΦA	ΦB	ΦC	W	T
RLH12	178.0 ±2.0	60.0 ±1.0	13.0 ±1.0	9.0 ±1.0	11.4 ±1.0

10.3 Peel – off force :

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.



UNIT: mm

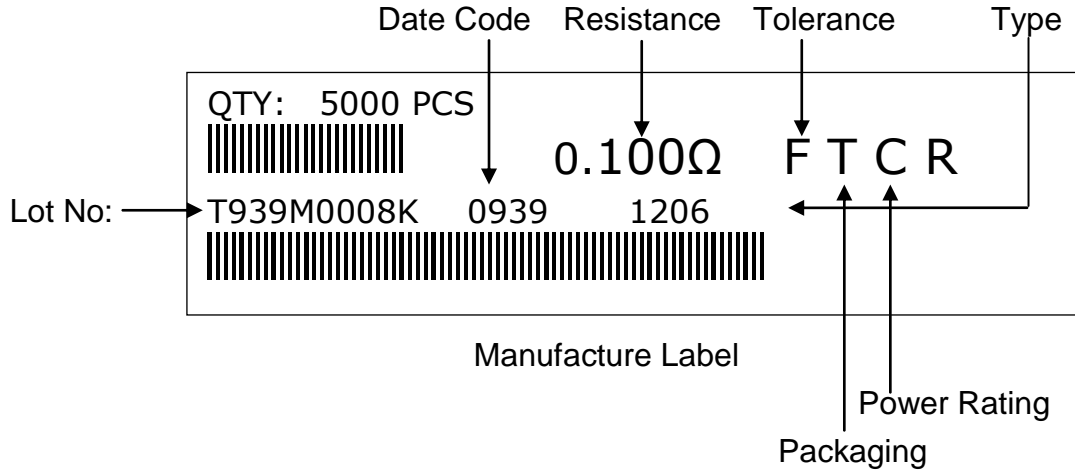


High Power Low Resistance Chip Resistors (RLH12 Series)

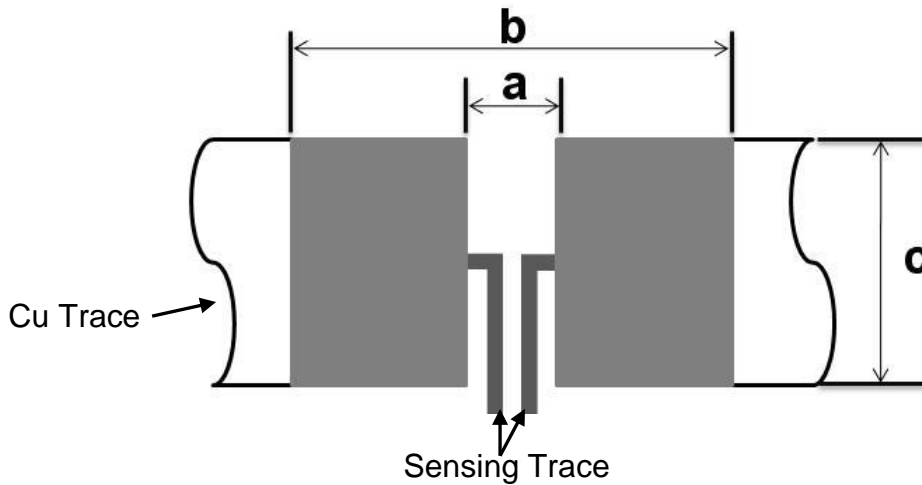
Document No	TRLH-120S001B
Issued date	2012/10/18
Page	6/8

11. Label

11.1 Normal Products :



12. Recommended land patterns



Land pattern		Dimension (mm)		
Type	Size	a	b	c
RLH	12 (1206)	0.70±0.20	5.10±0.20	2.50±0.20



High Power Low Resistance Chip Resistors (RLH12 Series)

Document No	TRLH-120S001B
Issued date	2012/10/18
Page	7/8

13. 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.

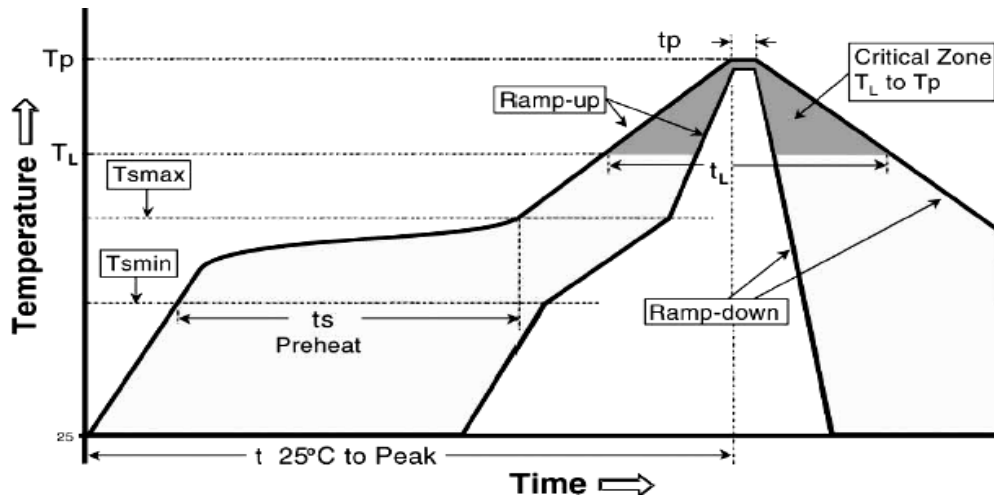
14. Storage Conditions:

Temperature: 5°C~35°C, Humidity: 40%~75%

15. Shelf Life:

2 years from manufacturing date.

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



Profile Feature	Lead (Pb)-Free Assembly
Average ramp-up rate (T _{smax} to T _p)	3°C / second max.
Preheat - Temperature Min (T _{smin}) - Temperature Max (T _{smax}) - Time (T _{smin} to T _{smax}) (t _s)	150°C 200°C 60 -150 seconds
Time maintained above : - Temperature (T _L) - Time (T _L)	217°C 60-120 seconds
Peak Temperature (T _p)	260°C
Time within $\begin{matrix} +0 \\ -5 \end{matrix}$ °C of actual Peak Temperature (t _p) ²	10 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8minutes max.



High Power Low Resistance Chip Resistors (RLH12 Series)

Document No	TRLH-120S001B
Issued date	2012/10/18
Page	8/8

17. 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 :62-21-89830123 Fax : 62-21-89830703

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 :

[CRL0603-FW-R700ELF](#) [PFS35-200RF1](#) [NPS 2-T126 5.000 OHM 1%](#) [PFS35-0R01J1](#) [PFS35-0R05J1](#) [PFS35-5RF1](#) [CD2015FC-0.10-1%](#)
[PR2512FKF7W0R004L](#) [RC1005F124CS](#) [RL73K3AR56JTDF](#) [RL7520WT-R001-F](#) [RL7520WT-R009-G](#) [RL7520WT-R020-F](#) [LRC-](#)
[LR2512LF-01-R820J](#) [WR06X104JGLJ](#) [TL2BR01F](#) [65709-330](#) [SP1R12J](#) [RL7520WT-R039-G](#) [RL7520WT-R002-F](#) [RL7520WT-R005-F](#)
[KRL1632E-C-R200-F-T5](#) [KRL1632E-C-R200-F-T1](#) [RLP73M1ER051FTDF](#) [RLP73M2AR075FTDF](#) [SR731ERTTP5R10F](#) [SR731ERTTP100J](#)
[SR731ERTTP6R80F](#) [SR731ERTTP4R70F](#) [SR731ERTTP2R20F](#) [SR731ERTTP3R90F](#) [SR731ERTTP1R00F](#) [SR731ERTTP10R0F](#)
[SR731ERTTP2R00F](#) [SR731ERTTP8R20F](#) [SR731ERTTP3R9J](#) [SR731ERTTP8R2J](#) [SR731ERTTP2R0J](#) [SR731ERTTP4R7J](#)
[SR731ERTTP9R1J](#) [SR731ERTTP1R0J](#) [SR731ERTTP2R2J](#) [SR731ERTTP5R1J](#) [SR731ERTTP6R8J](#) [SR731ERTTP9R10F](#) [FCSL64R007JER](#)
[LRF1206-R018FW](#) [TLR2B10DR022FTDG](#) [TLR2H10DR01FTDG](#) [73L4R10G](#)