



Low Resistance Chip Resistors (RBL12 Series)

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1. Scope :

The specification applies for the RBL12 Series of low resistance chip resistors made by TA-I.

2. Features:

- ◆ Low Resistance and High Accuracy Resistor for Current Detection
- ◆ Good Performance for Heat Dissipation
- ◆ High Purity Alumina Substrate for High Power Dissipation
- ◆ Pb-free to Meet RoHS Requirements
- ◆ Halogen-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:

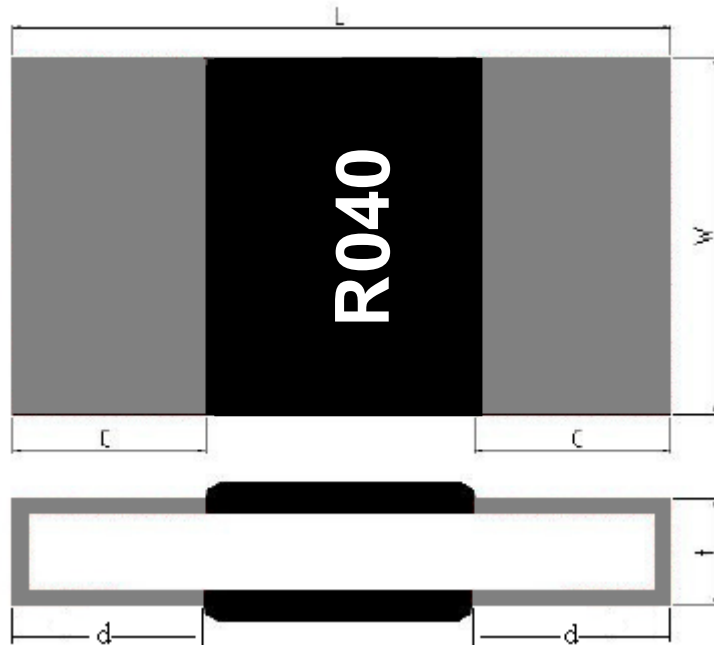




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5. Dimensions:



Unit: mm

Item	L	w	c	d	t
RBL12	3.20±0.1	1.60±0.1	1.10±0.2	1.10±0.2	0.62±0.1



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6. Electrical Characteristics

Chip Size	Power Rating	TCR (ppm/°C)	Resistance Range (mΩ)			Operating Temp. Range
			F : ±1%	G : ±2%	J : ±5%	
1206	1W	± 50	40 · 50			-55°C~ +155°C

6.1. Rated Voltage:

The rated voltage is calculated by the following formula:

$$E = \sqrt{P \cdot R}$$

E=Rated Voltage(V)

P=Rated Power(W)

R=Resistance Value(Ω)

7. Reliability Tests(As specified in JIS C 5202):

Test Item	Reference standard	Condition of Test	Test Limits
Temperature Coefficient of Resistance	IEC60115-1-4.8 JIS-C5201-4.8	25 ~ 125°C	± 50 ppm/°C
Short Time Overload	IEC60115-1-4.13 JIS-C5201-4.13	5 X rated power, 5s	± (0.5%+0.5m Ω)
Load Life	IEC60115-1-4.25.1 JIS-C5201-4.25.1	1000 hours at rated power, at 70°C	± (1.0%+0.5m Ω)
Load Life with Humidity	IEC60115-1-4.24 JIS-C5201-4.24	1000 hours at rated power , 40 ± 2°C , 90~95% RH	± (0.5%+0.5m Ω)
Rapid Change of Temperature	IEC60115-1-4.19 JIS-C5201-4.19	-55°C (15 min.) / +155 °C (15 min.) 5 cycles	± (1.0%+0.5m Ω)
Resistance to Soldering Heat	IEC60115-1-4.18 JIS-C5201-4.18	270 ± 5°C solder , 10 ± 1 sec dwell .	± (0.5%+0.5m Ω)
Solderability	IEC60115-1-4.17 JIS-C5201-4.17	245±5°C solder, 2±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.
Robustness of Termination (Bending Strength)	IEC60115-1-4.33 JIS-C5201-4.33	3mm deflection	± (0.5%+0.5m Ω)



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Resistance to Dry Heat	IEC60115-1-4.23.2 JIS-C5201-4.23.2	155 ± 5°C for 1000hrs	± (1.0%+0.5m Ω)
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8. Marking:

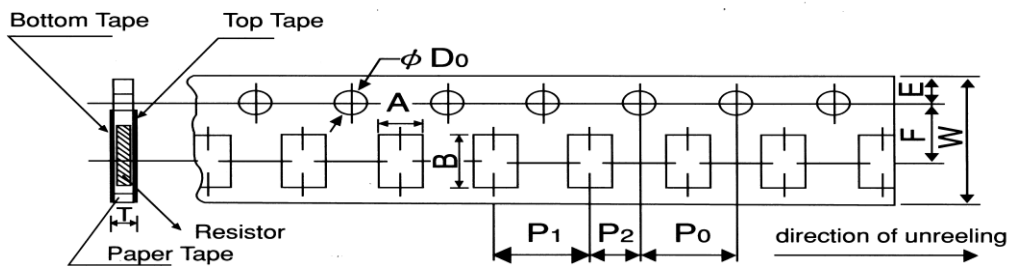
Resistance value is expressed by 4 digits, the first "R" means decimal point and the other digits represent for the normal resistance in Ω.

eg., 40mΩ= R040

9. Taping & Reel

9.1 Taping Dimensions

9.1.1 4 mm pitch paper



Packing	Type	A	B	W	F	E	P ₁	P ₂	P ₀	D ₀	T
Paper Tape	RBL12	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	Φ1.5 ^{+0.1} _{-0.1}	0.84±0.1

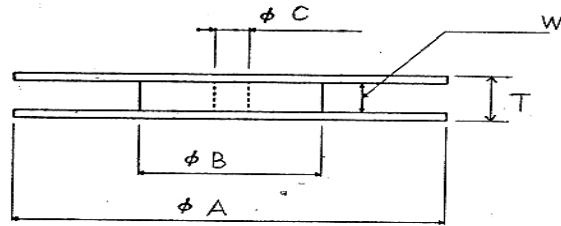
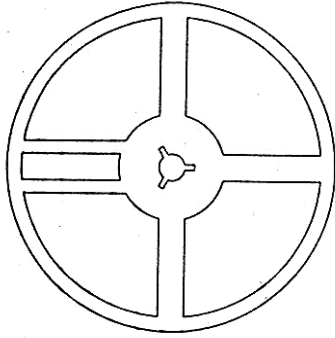
UNIT: mm



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9.2 Reel Specifications

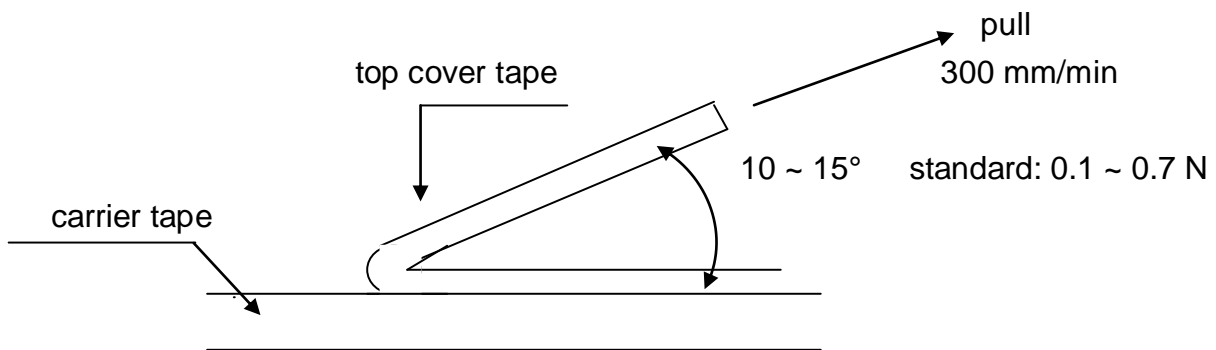


UNIT: mm

Type	ΦA	ΦB	ΦC	W	T
RBL 12	178.0 \pm 2.0	60.0 \pm 1.0	13.0 \pm 1.0	9.0 \pm 1.0	11.4 \pm 1.0

9.3 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

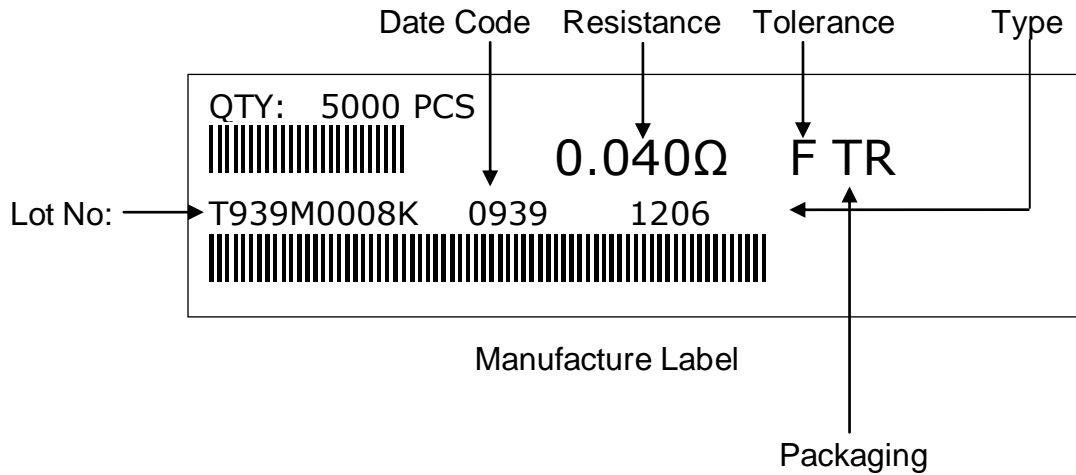


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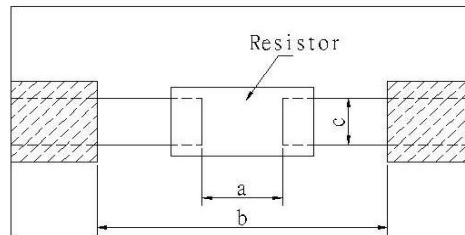
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10. Label

10.1 Normal Products :



11. Recommended land patterns



Land pattern		Dimension (mm)		
		a	b	c
Type	Size			
RBL	12 (1206)	2.0 ~ 2.4	4.4 ~ 5.0	1.5 ~ 1.8

12. 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.

13. Storage Conditions:

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

14. Shelf Life:

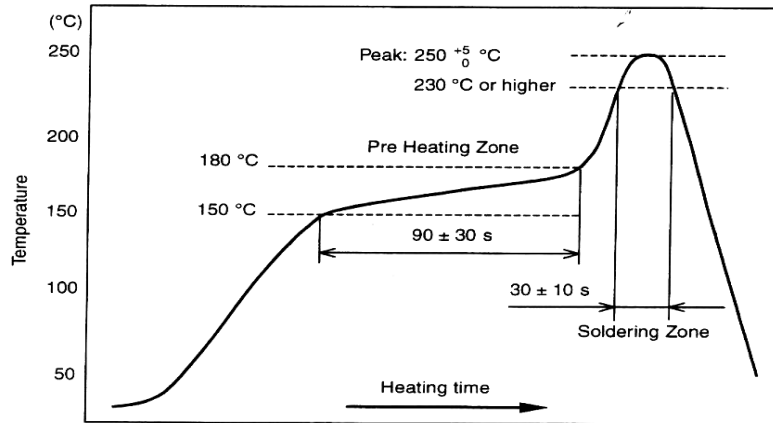
2 years from manufacturing date.



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



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

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

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

16. Manufacturing Country & City :

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Associated companies :

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

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