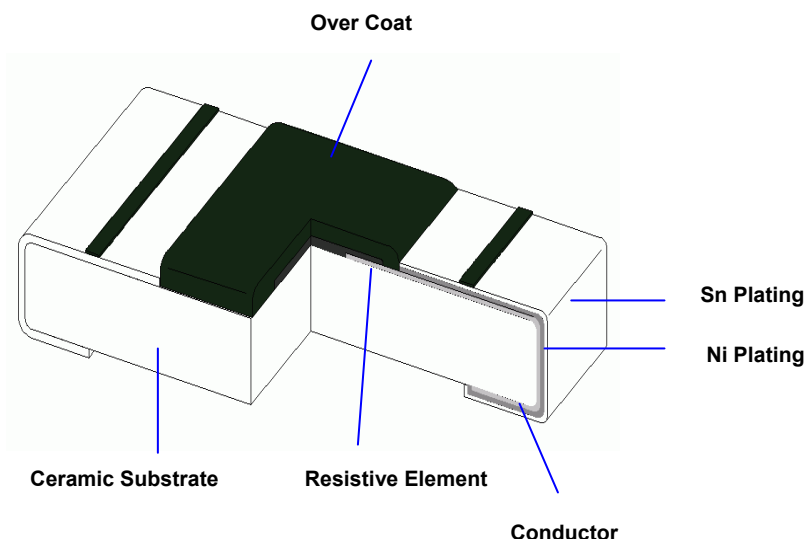


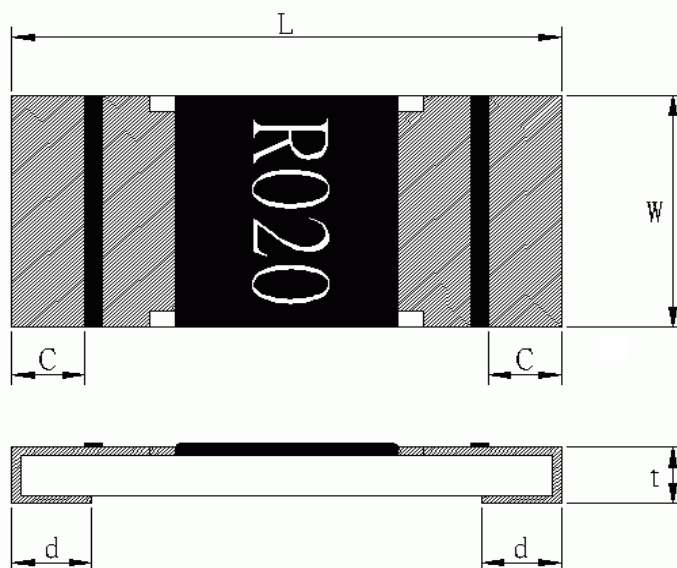
1. Scope :

This specification applies for the RL25 series of chip resistors made by TA-I.

2. Construction:**3. Type Designation:**

<u>RL</u>	<u>25</u>	<u>F</u>	<u>EN</u>	<u>R020</u>
Product Code	Size	Tolerance	Packaging	Nominal Resistance
RL : Chip Resistor	Power Rating			
25-2512(6432) 1W	J- $\pm 5\%$ G- $\pm 2\%$ F- $\pm 1\%$	EN-Lead Free & Embossed Tape N-Lead Free	4 Digits e.g.,: (E24) R020=20m Ω	

4. Dimensions:



UNIT : mm

Type	L	W	C	d	t
RL25	6.30 ±0.20	3.20 ±0.20	0.60 ±0.30	0.50 ±0.25	0.55 ±0.10

5. Electrical characteristics :

Characteristics	Type			Measurement Method
	RL25			
Power Ratings (W)	1W			JIS Code 3A / JIS Code 3D
Resistance Value (mΩ)	20-91			Refer to JIS C 5202 5.1
T.C.R (ppm/°C)	20 mΩ	21-50 mΩ	51-91 mΩ	Refer to JIS C 5202 5.2
	±600	±400	±200	
Operation Temperature Range (°C)	-55 ~+125			
Resistance Tolerance (%)	±1, ±2, ±5			JIS C 5201 4.2.5
Insulation Resistance (MΩ)	Over 100			Refer to JIS C 5202 5.6 Mounting condition G
Maximum Working Voltage (V)	(P*R) ^{1/2}			

Note :Except for the above standardized products, we also provide the customized products.

5.1 Derating Curve :

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

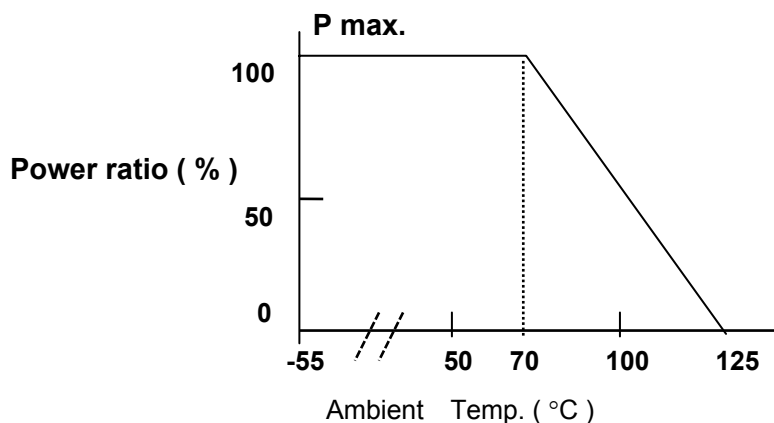


Figure 1

6. Reliability Test:(As specified in JIS C 5202)

Test Item	Reference standard	Condition of Test	Test Limits
Temperature Coefficient of Resistance	JIS-C5202-5.2	-55 ~+125 °C	Refer to paragraph 5
Short Time Overload	JIS-C5202-5.5	2.5 X rated voltage, 5s	$\pm(2\%+0.001\Omega)$
Load Life	JIS-C5202-7.10	1000 hours at rated power , 70°C , 1.5hours "ON " , 0.5hour "OFF"	$\pm(2\%+0.001\Omega)$
Load Life with Humidity	JIS-C5202-7.5	40 $\pm$ 2°C , 90~95% RH , for 1000 hours	$\pm(2\%+0.001\Omega)$
Rapid Change of Temperature	JIS-C5202-7.4	-55°C (30 min.) / +125 °C(30 min.) 5 cycles	$\pm(1\%+0.001\Omega)$
Resistance to Soldering Heat	JIS-C5202-6.10	270 $\pm$ 5°C solder , 10 $\pm$ 1 sec dwell .	$\pm(1\%+0.001\Omega)$
Solderability	JIS-C5202-6.11	245 $\pm$ 5°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.
Resistance to Dry Heat	JIS-C5202-7.2	125 $\pm$ 5°C for 96 $\pm$ 4 hrs	$\pm(2\%+0.001\Omega)$

Note* :RCWV : Rated continuous working voltage .

7. Marking

7.1 E24: 1, 2, 5%

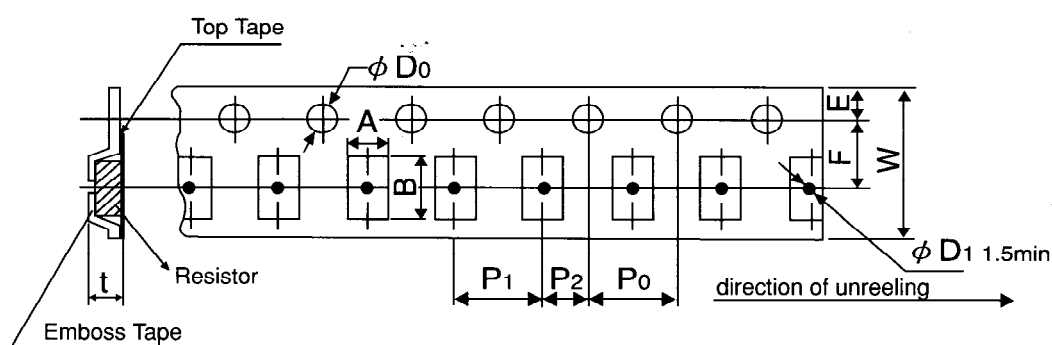
Resistance value is expressed by 4 digits, the first "R" means decimal point and the other digits represent for the normal resistance in Ω .

e.g., R020 = 20 m Ω

8. Taping & Reel

8.1 4 mm pitch Emboss

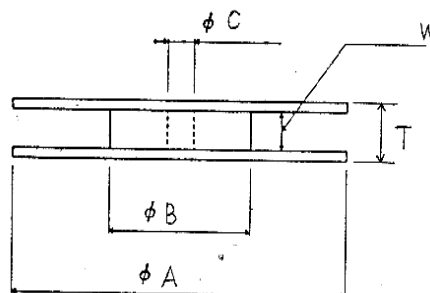
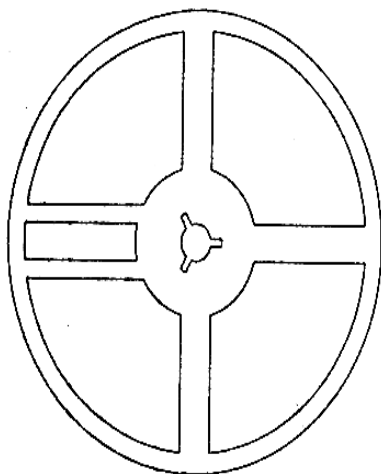
UNIT: mm



Packing	Type	A	B	W	F	E	P ₁	P ₂	P ₀	D ₀	T
Emboss	RL25	3.6±0.2	6.9±0.2	12.0±0.2	5.5±0.05	1.75±0.1	4.0±0.1	2.0±0.1	4.0±0.05	ϕ 1.5 ^{+0.1} ₋₀	0.85±0.15

Type Size		Emboss Plastic Tape 4 mm pitch
RL	25	4000

8.2 Reel Specifications

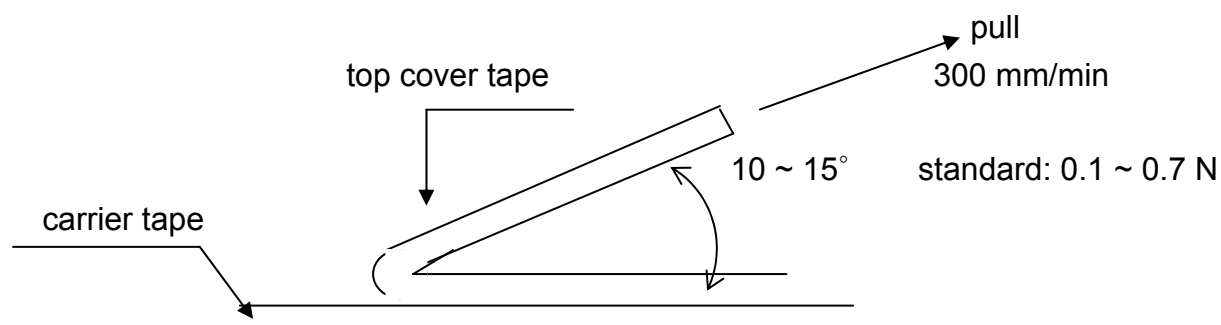


UNIT: mm

Series	ϕA	ϕB	ϕC	W	T
RL25	178 $\pm$ 2.0	60.0 $\pm$ 1.0	13.0 $\pm$ 1.0	13.0 $\pm$ 1.0	15.5 $\pm$ 1.0

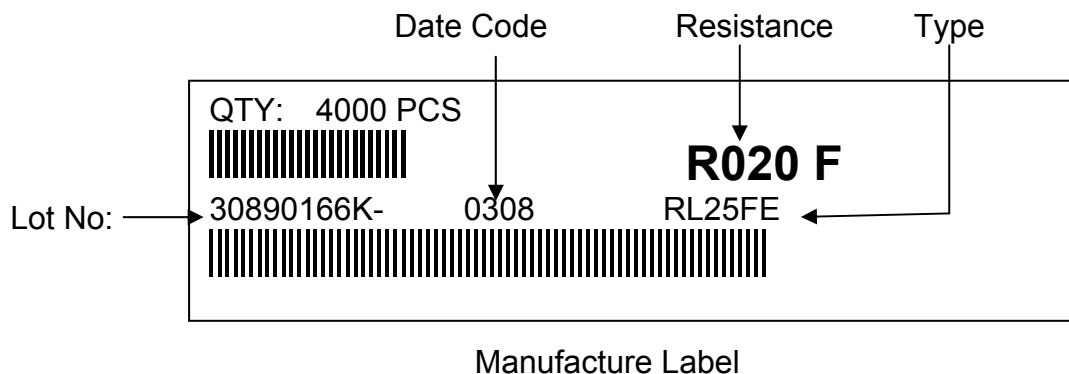
8.4 Peel –off force :

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.



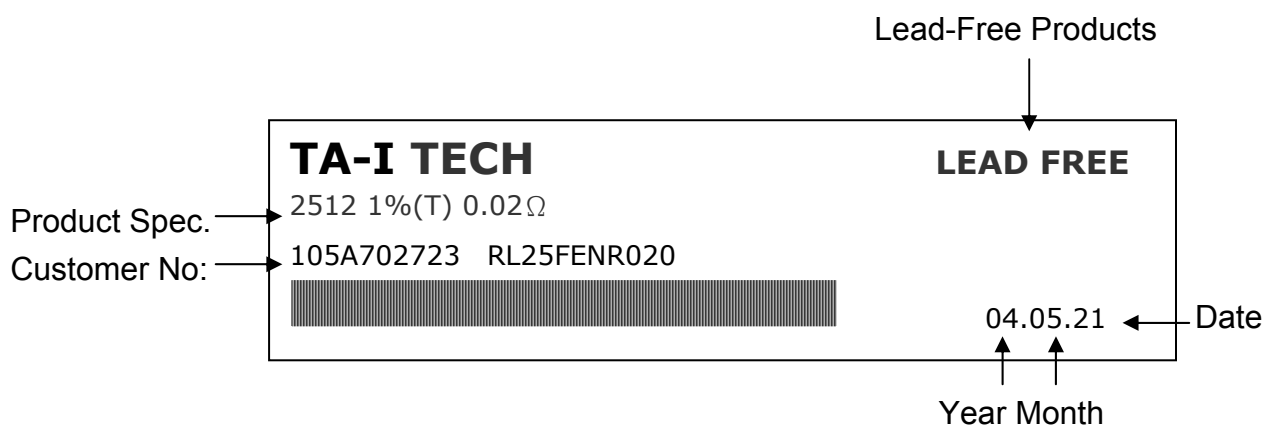
9. Label

9.1 Manufacture Label :

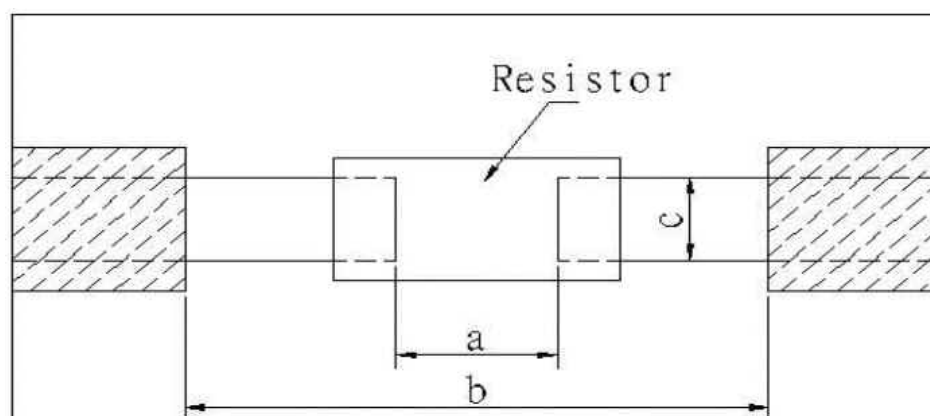


Packaging

9.2 Customer Label: (By customer request)

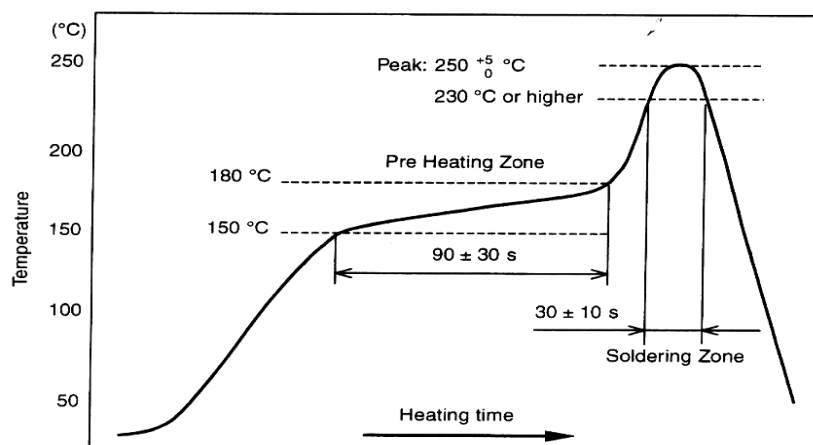


10. Recommended land patterns



Land pattern		Dimension (mm)		
Type	Size	a	b	c
RL	25 (2512)	3.6~4.0	7.6~8.6	3.2~3.5

11. Recommend IR – Reflow profile : (Lead-Free solder : Sn96.5 / Ag3 / Cu0.5)



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

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

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

12. Storage Conditions:

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

13. Shelf Life:

2 years from manufacturing date