

**1W, 0612 Low Resistance Chip Resistor (Lead /Halogen Free)**

1. Scope

This specification applies to 1.6mm x 3.2mm size 1W, fixed metal film chip resistors rectangular type for use in electronic equipment.

2. Type Designation

RL1632W - □□□□ - □ NH  
 (1) (2) (3) (4)

Where

(1) Series No.

(2) Resistance value :

For example - -

R005 = 5mΩ

The “ R “ shall be used as a decimal point.

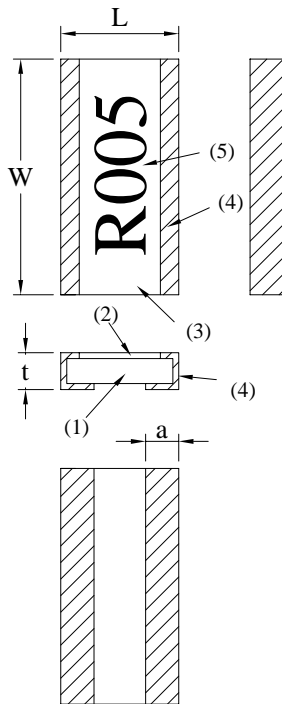
(3) Resistance value :

F = ± 1%

G = ± 2%

(4) NH = Sn plating (Lead Free /Halogen Free)

3. Outline Designation



- (1) Substrate Alumina 96%
- (2) Resistor Copper-alloy
- (3) Terminals Sn (on Cu )
- (4) Protection coat Heat resistive epoxy resin
- (5) Marking Epoxy resin(White)

Code Letter	Dimensions (mm)
L	1.6 ± 0.20
W	3.2 ± 0.20
a	0.5 ± 0.1
t	0.80 ± 0.15

Figure 1. Construction and Dimensions

4. Ratings

4-1 Specification

Power Rating *	1 W
Resistance Value	5mΩ ~ 9mΩ
Resistance Tolerance	±1% ( F ) 、 ±2% ( G )
Temperature Coefficient of Resistance	0 ~ 350ppm/°C

Note \* :

Power rating is based on continuous full load operation at rated ambient temperature of 70°C. For resistors operated at ambient temperature in excess of 70°C, the maximum load shall be derated in accordance with the following curve.

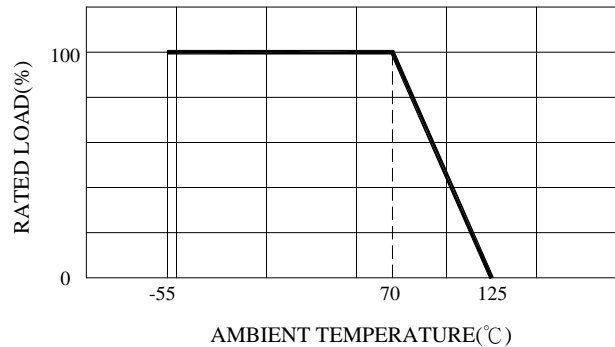


Figure 2. : Power Temperature Derating Curve

4-2 Rated Voltage

The rated voltage shall be determined by the following expression.

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

Where V : Rated voltage (V)

R : Nominal resistance value (Ω)

P : Rated dissipation (W)

4-3 Operation Temperature

-40°C to +125°C

5. Marking

Resistance value is marked on the top surface.

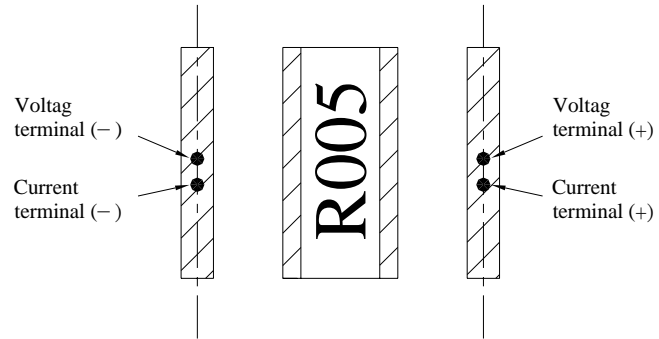
Ex.) 5mΩ → R005

6. Schematic Diagram. Measurement Point

Schematic Diagram



Measurement Point

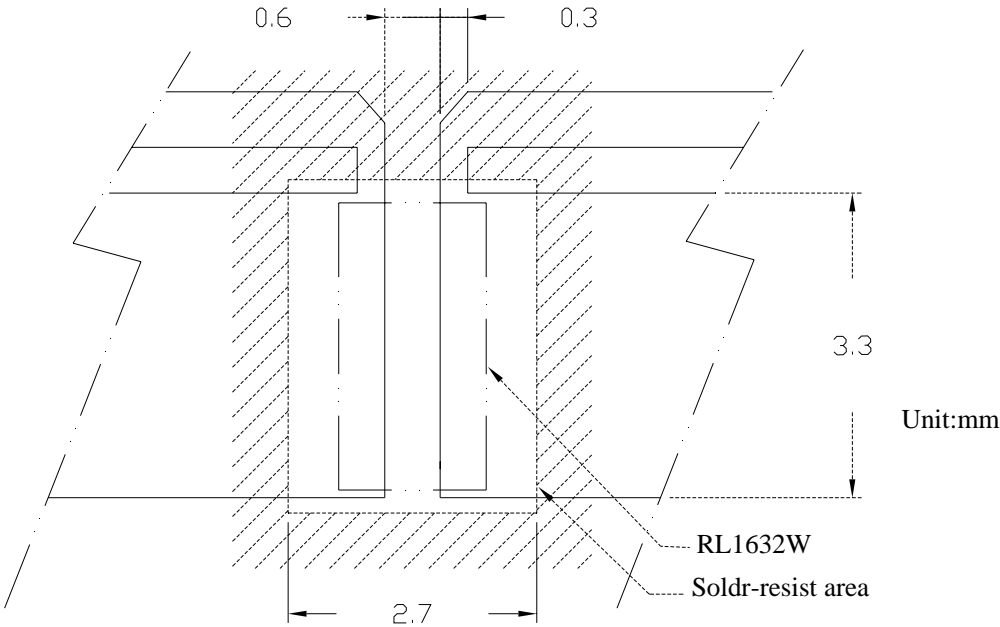


7. Characteristics

Test Item	Condition of Test	Requirements
Short Time Overload	2.5 * Rated voltage for 5 seconds Refer to JIS C 5201-1 4.13	$\Delta R : \pm (0.5\%+0.0005\Omega)$ Without significant damage by flashover ( spark, arching ), burning or breakdown etc.
Insulation Resistance	The resistor shall be cramped in the metal block and tested , as shown below. Test voltage : $100 \pm 15V_{DC}$ for 1 minute Refer to JIS C 5201-1 4.6 Mounting condition G.	Between Electrode and Protection Film $100M\Omega$ or over Between Electrode and Substrate $1,000M\Omega$ or over
Voltage Proof	The voltage : $100V_{AC}$ (rms.) for 1 minute Refer to JIS C 5201-1 4.7	$\Delta R : \pm (0.5\%+0.0005\Omega)$ Without damage by flashover, fire or breakdown, as shown below.
Thermal Shock	$-55 \sim 125^{\circ}C$ 5 cycles, 15 min at each extreme condition Refer to JIS C 5201-1 4.19	$\Delta R : \pm (1.0\%+0.0005\Omega)$ Without distinct damage in appearance
Low Temperature Storage	Kept at $-55^{\circ}C$ , 1,000 hours Refer to JIS C 5201-1 4.23.4	$\Delta R : \pm (1.0\%+0.0005\Omega)$ Without distinct damage in appearance
High Temperature Exposure	Kept at $125^{\circ}C$ for 1,000 hours Refer to JIS C 5201-1 4.23.2	$\Delta R : \pm (1.0\%+0.0005\Omega)$ Without distinct damage in appearance
Solderability	Temperature of Solder : $245 \pm 5^{\circ}C$ Immersion Duration : $3 \pm 0.5$ second Refer to JIS C 5201-1 4.17	Uniform coating of solder cover minimum of 95% surface being immersed
Resistance to Soldering Heat	Dipped into solder at $270 \pm 5^{\circ}C$ for $10 \pm 1$ seconds Refer to JIS C 5201-1 4.18	$\Delta R : \pm (0.5\%+0.0005\Omega)$ Without distinct deformation in appearance

Test Item	Condition of Test	Requirements
Load Life	Rated voltage for 1.5 hours followed by a pause 0.5 hour at $70 \pm 2^{\circ}\text{C}$ . Cycle repeated 1000 hours Refer to JIS C 5201-1 4.25	$\Delta R : \pm (1.0\%+0.0005\Omega)$ Without distinct damage in appearance
Damp Heat with Load	$60 \pm 2^{\circ}\text{C}$ with relative humidity 90% to 95%. D.C. rated voltage for 1.5 hours ON and 30 minutes OFF. Cycle repeated 1,000 hours Refer to JIS C 5201-1 4.24	$\Delta R : \pm (1.0\%+0.0005\Omega)$ Without distinct damage in appearance
Mechanical Shock	100 G's for 6 milliseconds. 5 pulses Refer to JIS C 5201-1 4.21	$\Delta R : \pm (0.5\%+0.0005\Omega)$ Without mechanical damage such as break
Bending Test	Glass-Epoxy board thickness : 1.6mm Bending width : 2mm Between the fulcrums : 90mm Refer to JIS C 5201-1 4.33	$\Delta R : \pm(0.5\%+0.0005\Omega)$ Without mechanical damage such as break

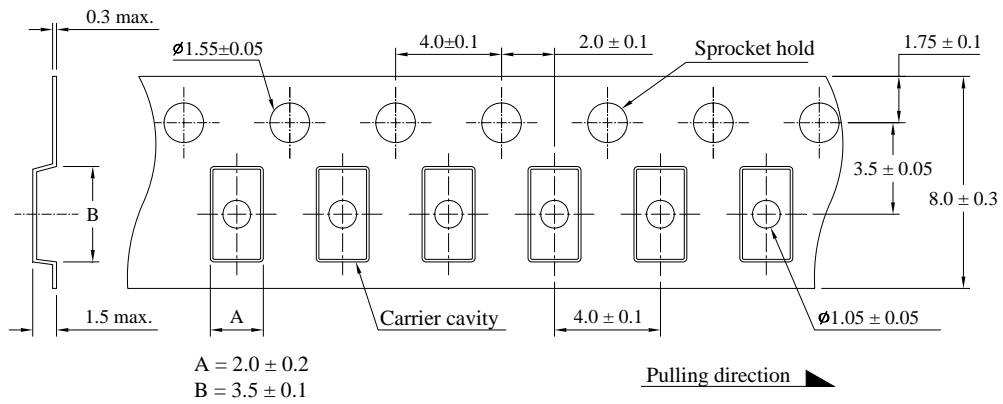
8. Recommend Land Pattern



9. Packaging

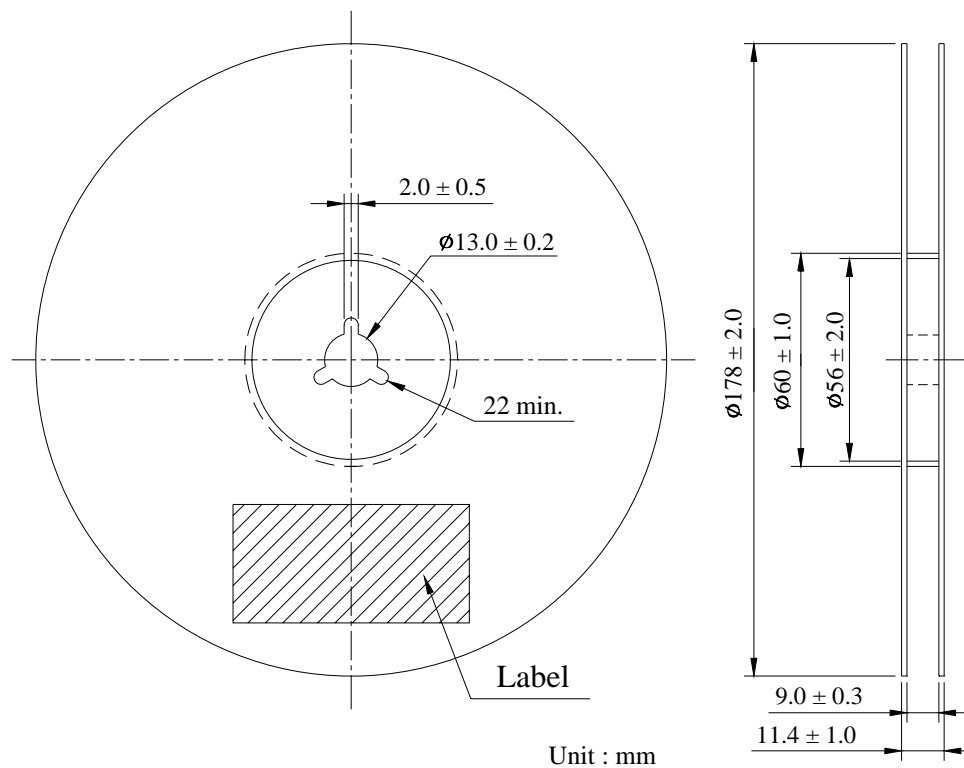
9-1 Dimensions

9-1-1 Tape packaging dimensions



Unit : mm

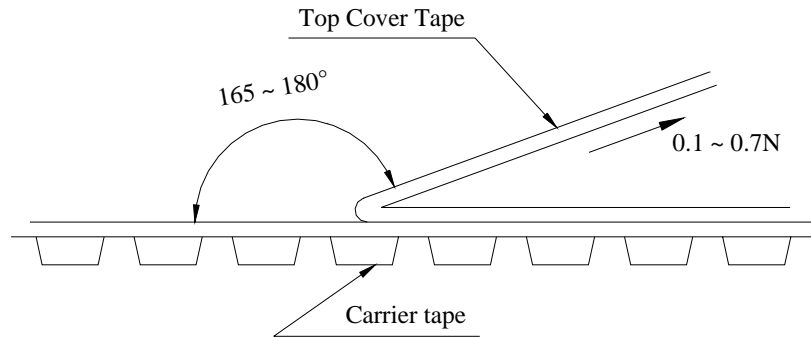
9-1-2 Reel dimensions



### 9-2 Peel Strength of Top Cover Tape

The peel speed shall be about 300mm/minute

The peel force of top cover tape shall between 0.1 to 0.7N



### 9-3 Number of Taping

2,000 pieces / reel

### 9-4 Label marking

The following items shall be marked on the reel.

- (1) Type designation
- (2) Quantity
- (3) Manufacturing date code
- (4) Manufacturer's name
- (5) The country of origin