

## SPECIFICATION FOR APPROVAL

### 1/2W, 2550, L Type Low Resistance Chip Resistor (Lead free / Halogen Free)

#### 1. Scope

This specification applies to 2.5mm x 5.0mm size 1/2W, fixed metal foil current sensing resistors used in electronic equipment.

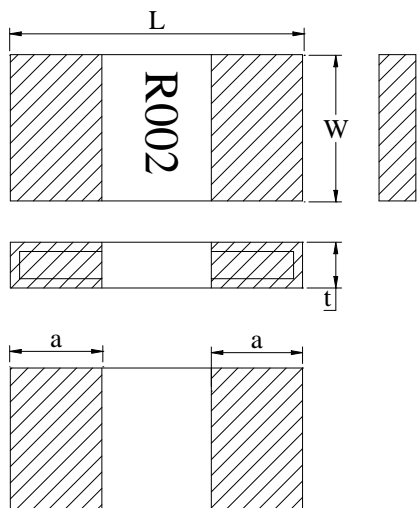
#### 2. Type Designation

RL2550 H - □□□□ □  
 (1) (2) (3) (4)

- Where
- (1) Series No.
  - (2) H = H Type
  - (3) Resistance value :  
 For example - -  
 R002 = 2mΩ
  - (4) Resistance tolerance  
 F = ± 1%  
 G = ± 2%  
 J = ± 5%

#### 3. Outline Designation and Marking

##### 3-1 Outline Designation



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

Code Letter	Dimensions (mm)
	RL2550
L	5.0 ± 0.20
W	2.5 ± 0.20
a	1.40 ± 0.25
t	(1~ 2mΩ) 0.60 ± 0.15 (3mΩ) 0.45 ± 0.15

Figure 1. Construction and Dimensions



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### 3-2 Marking

Resistance value is marked on the top surface.                      Ex.) 2mΩ → R002

## 4. Ratings

### 4-1 Specification

Power Ratings*	1/2W
Resistance Value	1 ~ 3mΩ
Temperature Coefficient of Resistance	±275ppm/°C
Resistance Tolerance	±1% , ± 2% , ±5%
Insulation Resistance	Over 100MΩ
Maximum Working Voltage (V)	$(P \cdot R)^{1/2}$

Note \* :

Power ratings 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.

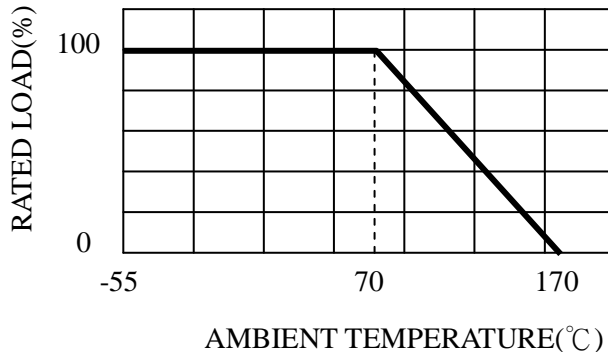


Figure 2. : Power Temperature Derating Curve

### 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 and Storage Temperature Range

-55°C to +170°C

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## 5. Characteristics

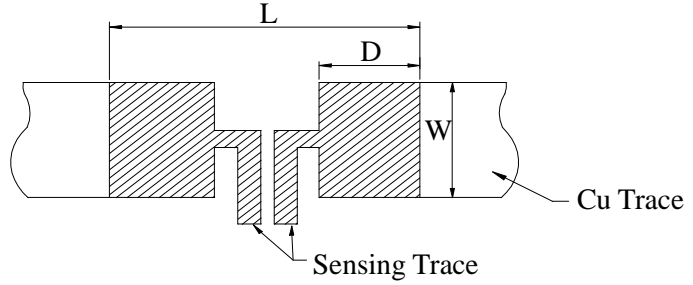
Test Item	Condition of Test	Requirements
Short Time Overload	2.5 * rated voltage for 5 seconds Refer to JIS C 5201-1 4.13	$\Delta R : \pm (0.5\% + 0.0005\Omega)$ Without significant damage by flashover ( spark, arching ), burning or breakdown etc.
Insulation Resistance	The resistor shall be cramped in 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	$\Delta R : \pm (0.5\% + 0.0005\Omega)$ 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	$\Delta R : \pm (0.5\% + 0.0005\Omega)$ 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	$\Delta R : \pm (0.5\% + 0.0005\Omega)$ 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



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#### 6. Recommend Land Pattern

	W	L	D
2550	3.03	6.12	2.56



Note : We recommend there is no circuit design between pads to avoid circuit short

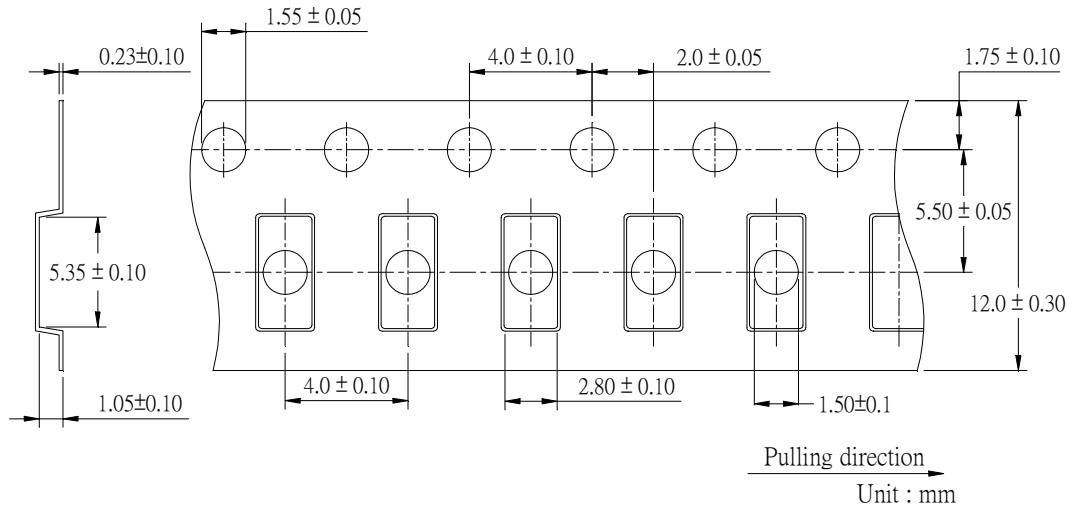


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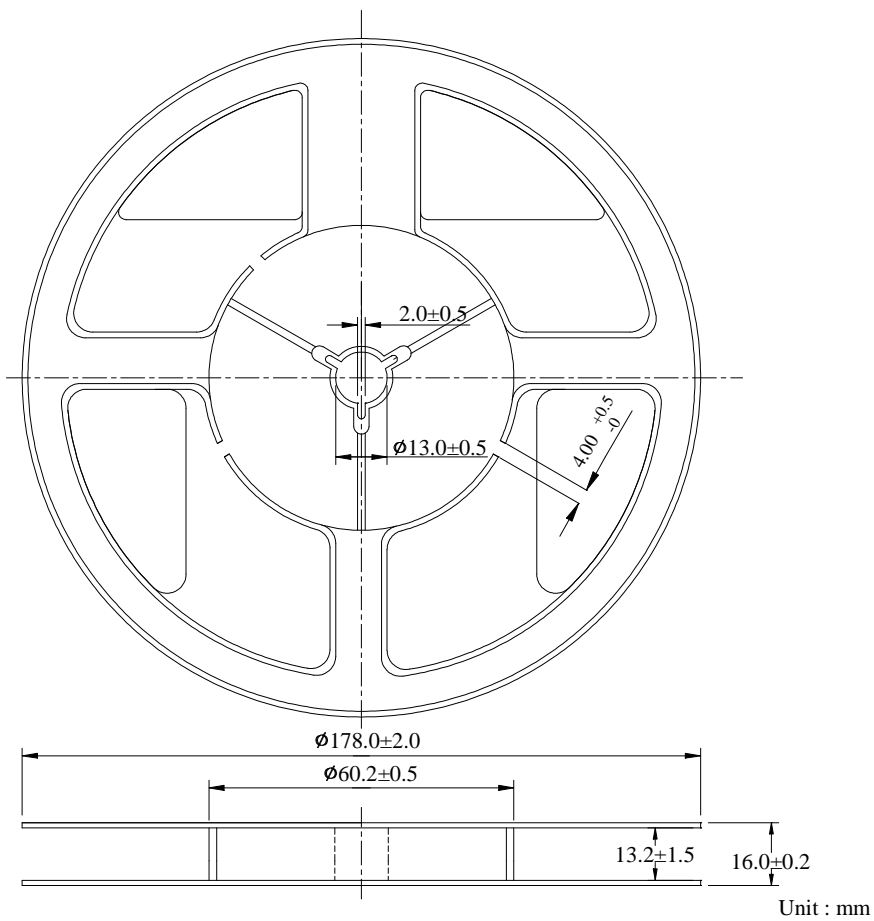
## 7. Packaging

### 7-1 Dimensions

#### 7-1-1 Tape packaging dimensions



#### 7-1-2 Reel dimensions

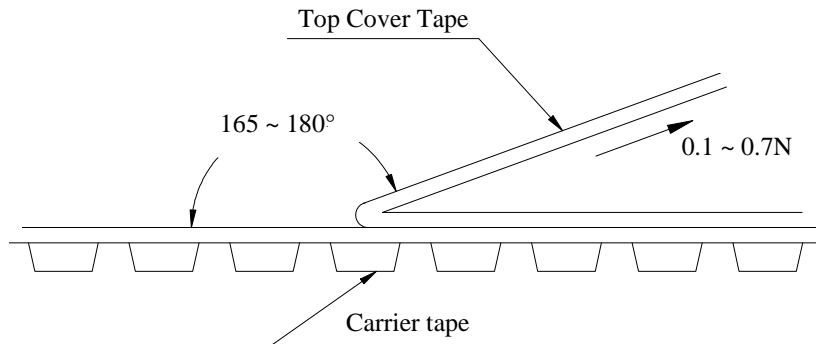


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### 7-2 Peel Strength of Top Cover Tape

The peel speed shall be about 300mm/minute

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



### 7-3 Number of Taping

2,000 pieces / reel

### 7-4 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