

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

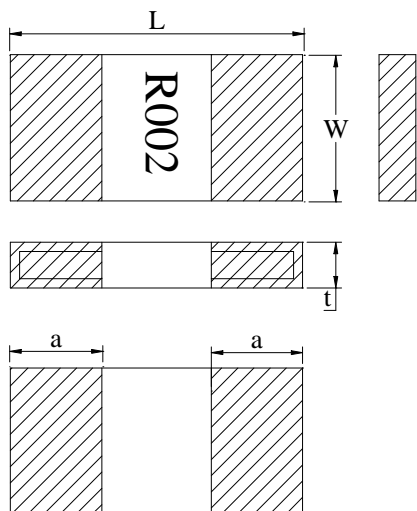
RL2550 H - □□□□ □
 (1) (2) (3) (4)

- 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



SPECIFICATION FOR APPROVAL

3-2 Marking

Resistance value is marked on the top surface. Ex.) $2m\Omega \rightarrow R002$

4. Ratings

4-1 Specification

Power Ratings*	1/2W
Resistance Value	1 ~ 3m Ω
Temperature Coefficient of Resistance	$\pm 275\text{ppm}/^\circ\text{C}$
Resistance Tolerance	$\pm 1\%$, $\pm 2\%$, $\pm 5\%$
Insulation Resistance	Over 100M Ω
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 $^\circ\text{C}$. For resistors operated at ambient temperature in excess of 70 $^\circ\text{C}$, the maximum load shall be derated in accordance with the following curve.

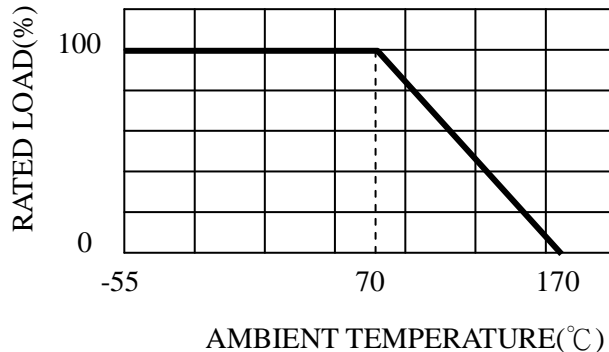


Figure 2. : Power Temperature Derating Curve

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 $^\circ\text{C}$ to +170 $^\circ\text{C}$



SPECIFICATION FOR APPROVAL

5. Characteristics

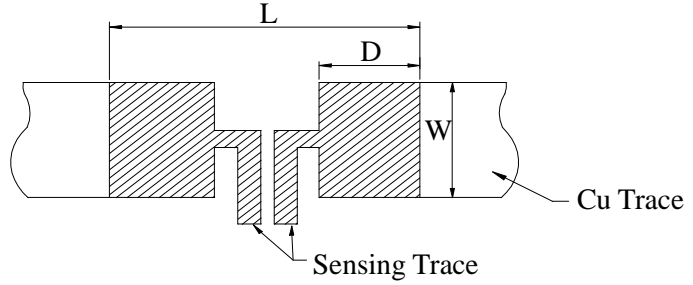
Test Item	Condition of Test	Requirements
Short Time Overload	2.5 * rated voltage for 5 seconds Refer to JIS C 5201-1 4.13	$\Delta R : \pm (0.5\% + 0.0005\Omega)$ Without significant damage by flashover (spark, arching), burning or breakdown etc.
Insulation Resistance	The resistor shall be cramped in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

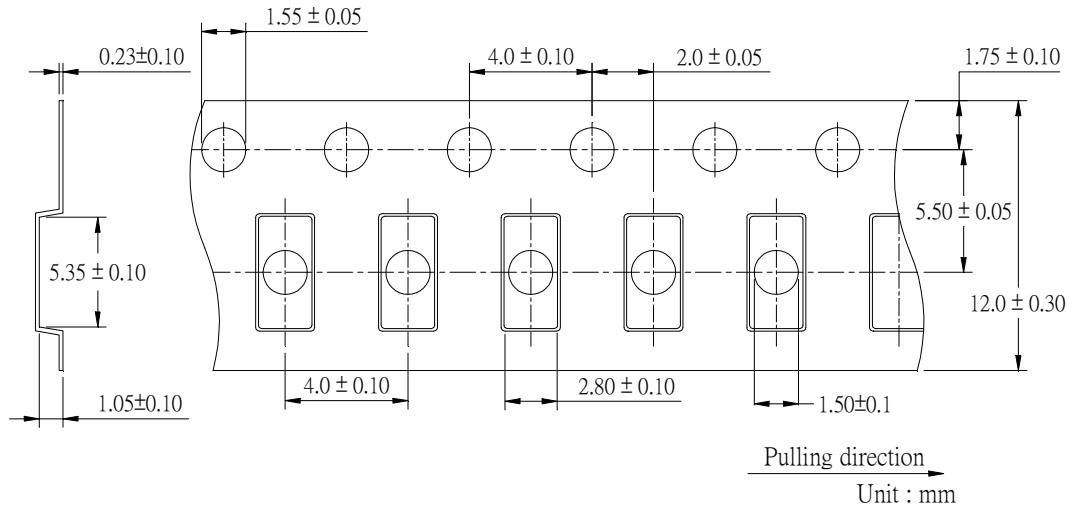


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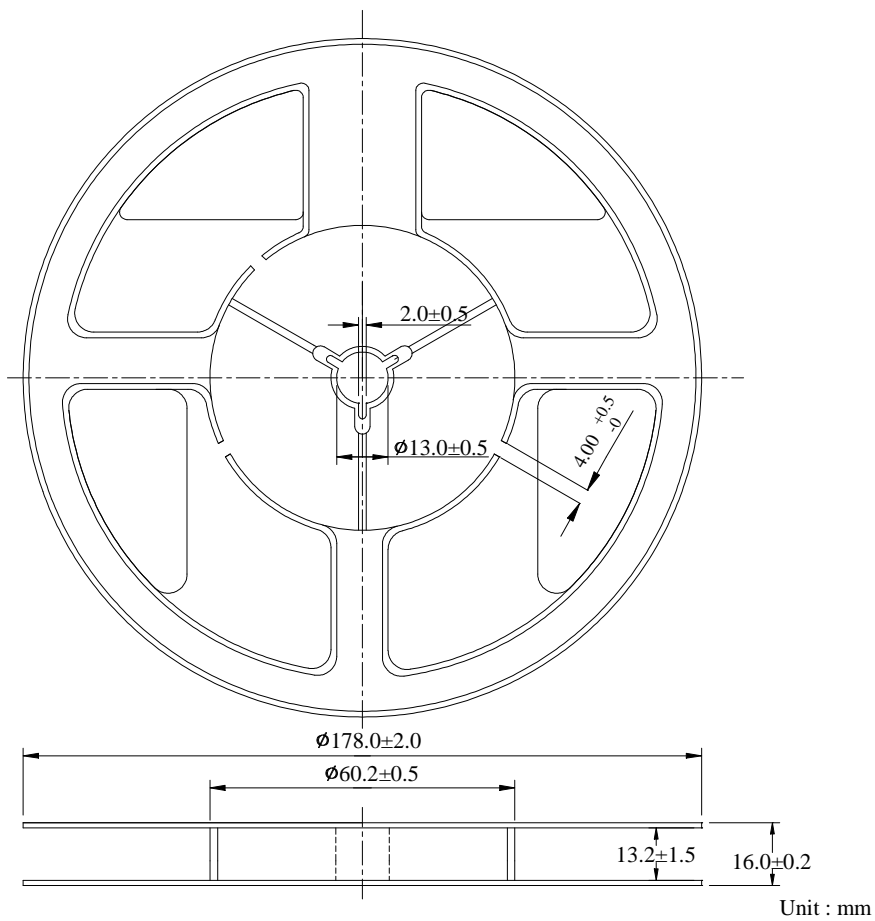
7. Packaging

7-1 Dimensions

7-1-1 Tape packaging dimensions



7-1-2 Reel dimensions

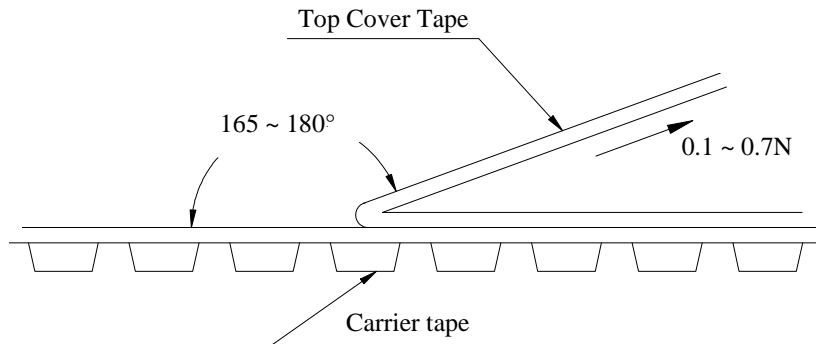


SPECIFICATION FOR APPROVAL

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