5W, 4527, SL Type Low Resistance Chip Resistor (Lead / Halogen Free)

1. Scope

   This specification applies to 7.1mm x 12mm size 5W, fixed metal foil current sensing resistors used in electronic equipment.

2. Type Designation

   RL4527JW – □□□□ □

   (1) (2) (3)

   Where (1) Series No.

   (2) Resistance value :

   For example :

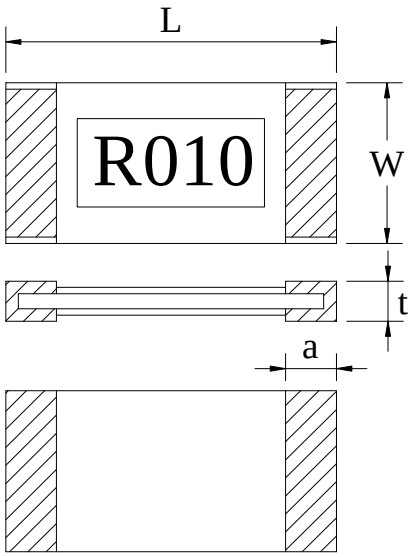
   Four digits of number

   R010 = 10mΩ

   (3) Tolerance :

   Refer to paragraph 4

3. Dimensions and schematic



Code Letter	Dimensions (mm)
	4527
L	11.80 ± 0.20
W	7.10 ± 0.20
a	2.50 ± 0.20
t	0.90 ± 0.20

Figure 1. Construction and Dimensions

4. Specification

Characteristics	Feature
Power Rating*	5W
Resistance Value	10 ~120 mΩ
Temperature Coefficient of Resistance	± 75ppm/℃
Operation Temperature Range	-55℃ ~ +170℃
Resistance Tolerance	± 1%(F) , ± 2%(G) , ± 5%(J)
Insulation Resistance	Over 100MΩ
Maximum Working Voltage (V)	$(P*R)^{1/2}$

Note * :

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

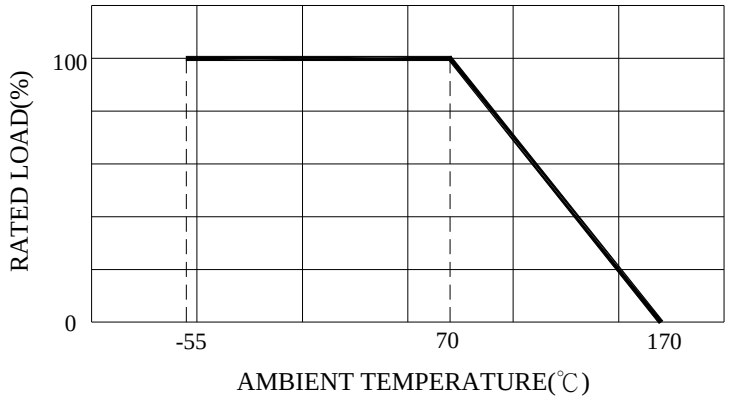


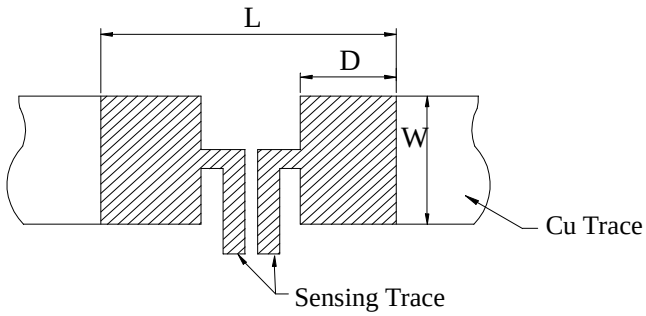
Figure 2.：Power Temperature Derating Curve

5. Reliability Performance

Test Item	Condition of Test	Requirements
Short Time Overload	5 x Rated power for 5 seconds Refer to JIS C 5201-1 4.13	ΔR：± 1.0%
Thermal Shock	-55 ~125℃ 100 cycles, 15 min at each extreme condition Refer to JIS C 5201-1 4.19	ΔR：± 0.5%
Low Temperature Storage	Kept at -55℃, 1,000 hours Refer to JIS C 5201-1 4.23.4	ΔR：± 1.0%
Resistance to Soldering Heat	Dipped into solder at 270 ± 5℃ for 20 ± 1 seconds Refer to JIS C 5201-1 4.18	ΔR：± 0.5%
Load Life	Rated voltage for 1.5hours followed by a pause 0.5hour at 70 ± 3℃ Cycle repeated 1,000 hours Refer to JIS C 5201-1 4.25	ΔR：± 2.0%
Damp Heat with Load	40 ± 2℃ with relative humidity 90% to 95%. D.C. rated voltage for 1.5 hours ON 30 minutes OFF. Cycle repeated 1,000 hours Refer to JIS C 5201-1 4.24	ΔR：± 1.0%
High Temperature Exposure	Kept at 170℃ for 1,000 hours Refer to JIS C 5201-1 4.23.2	ΔR：± 1.0%
Solderability	Temperature of Solder : 245 ± 5℃ 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
Mechanical Shock	100 G's for 6milliseconds. 5 pulses Refer to JIS C 5201-1 4.21	ΔR：± 0.5%
Substrate Bending	Glass-Epoxy board thickness : 1.6mm Bending width : 2mm Between the fulcrums : 90mm Refer to JIS C 5201-1 4.33	ΔR：± 0.5%

6. Recommend Land Pattern

	W (mm)	L (mm)	D (mm)	t (μm)
4527	7.5	13.0	4.0	105



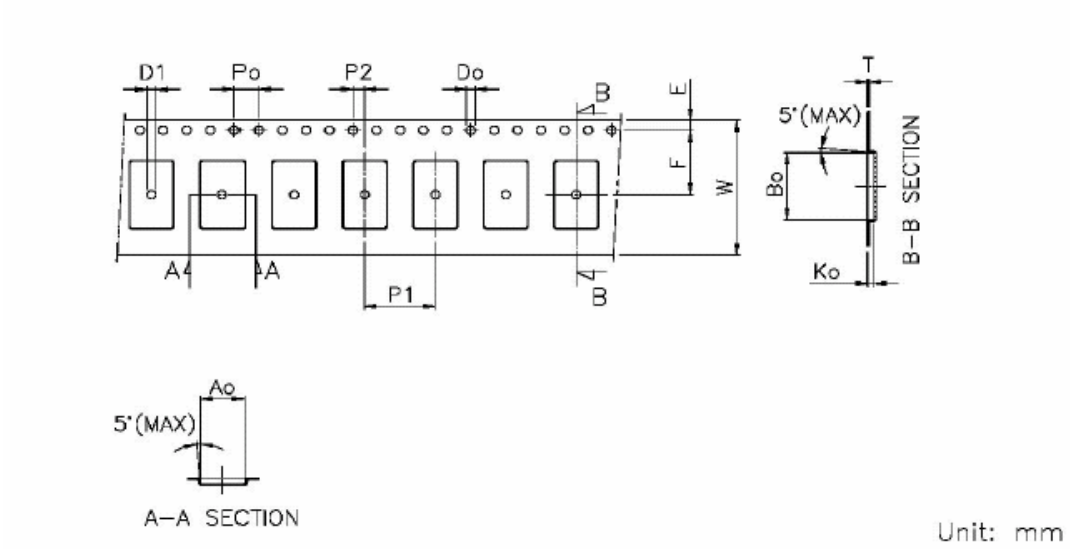
t: Copper foil minimum thickness of PCB

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

7. Packaging

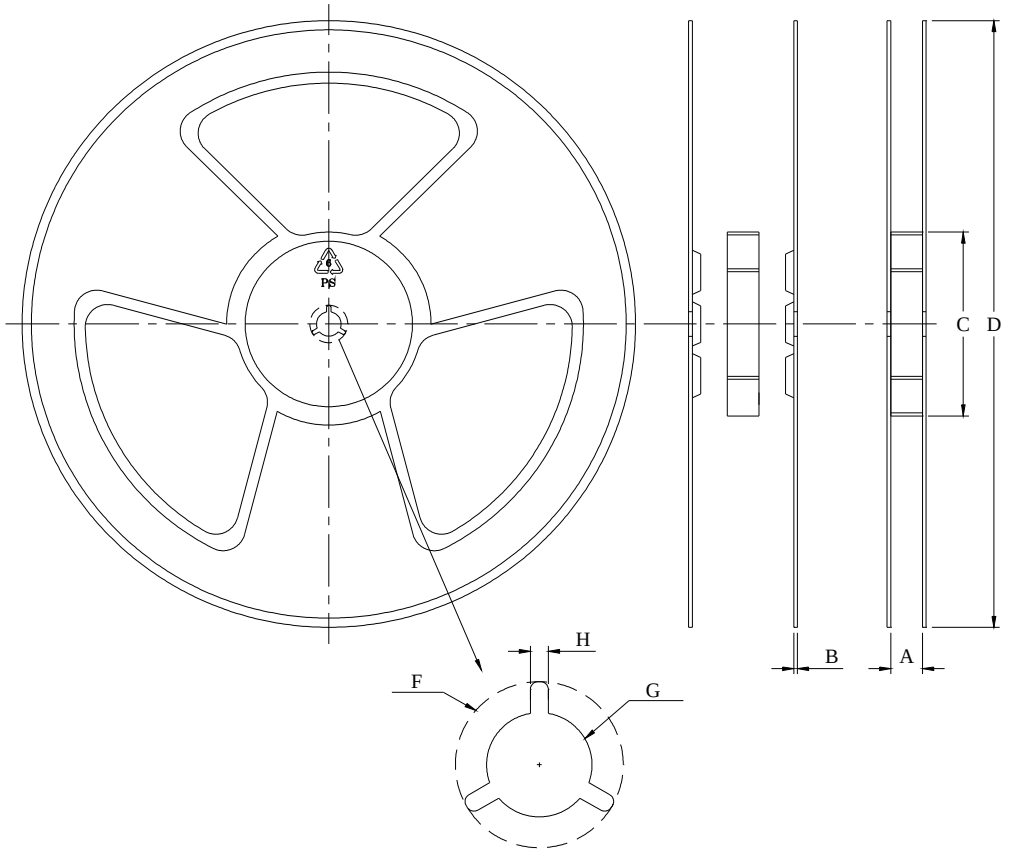
7-1 Dimensions

7-1-1 Tape packaging dimensions



Symbol	Ao	Bo	Ko	Po	P1	P2	T
Spec	7.38±0.10	12.00±0.10	1.05±0.10	4.0±0.10	12.0±0.10	2.0±0.10	0.30±0.10
Symbol	E	F	Do	D1	W	10Po	
Spec	1.75±0.10	11.50±0.10	1.55±0.05	1.50±0.10	24.0±0.30	40.0±0.20	

7-1-2 Reel dimensions



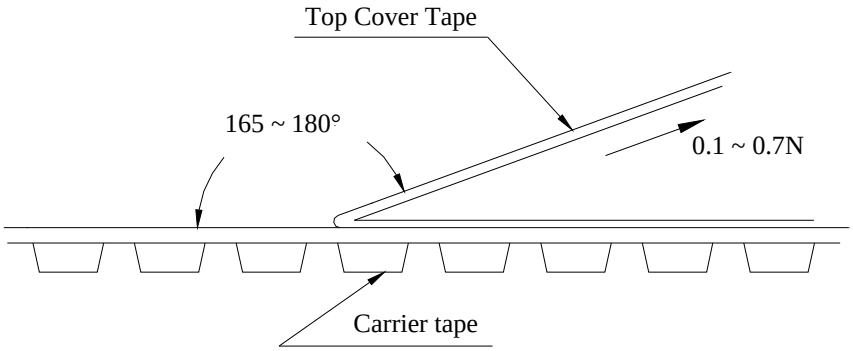
A	24.5 ± 0.5	F	20.2 ± 0.1
B	2.0 ± 0.2	G	$13.0^{+0.5}_{-1.0}$
C	100 ± 1.0	H	2.2 ± 0.1
D	330 ± 0.5		

Unit : mm

7-2 Peel Strength of Top Cover Tape

The peel speed shall be about 300mm/min.

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



7-3 Number of Taping

1,000 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