

深圳市金航标电子有限公司

Shenzhen Kinghelm Electronics Co., Ltd.

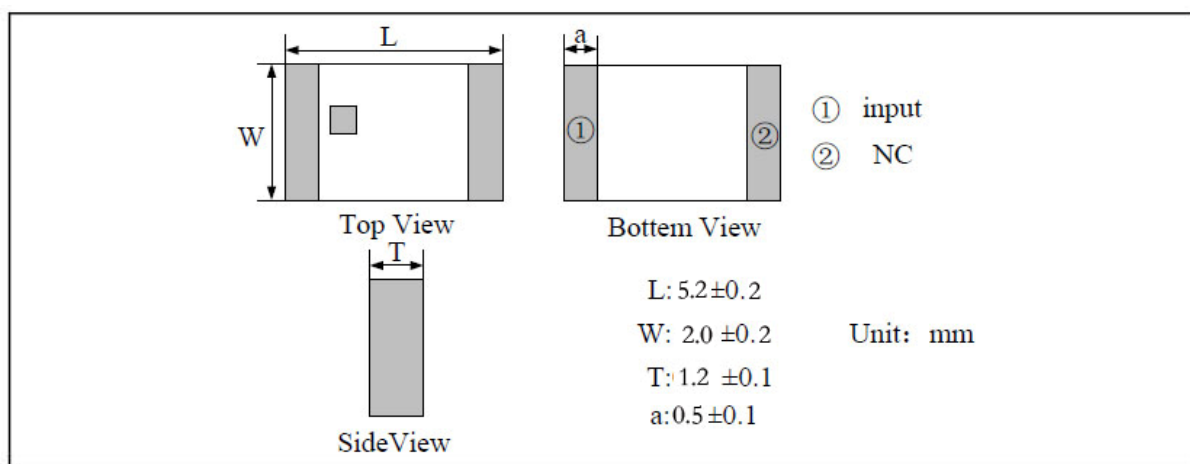
SPECIFICATION

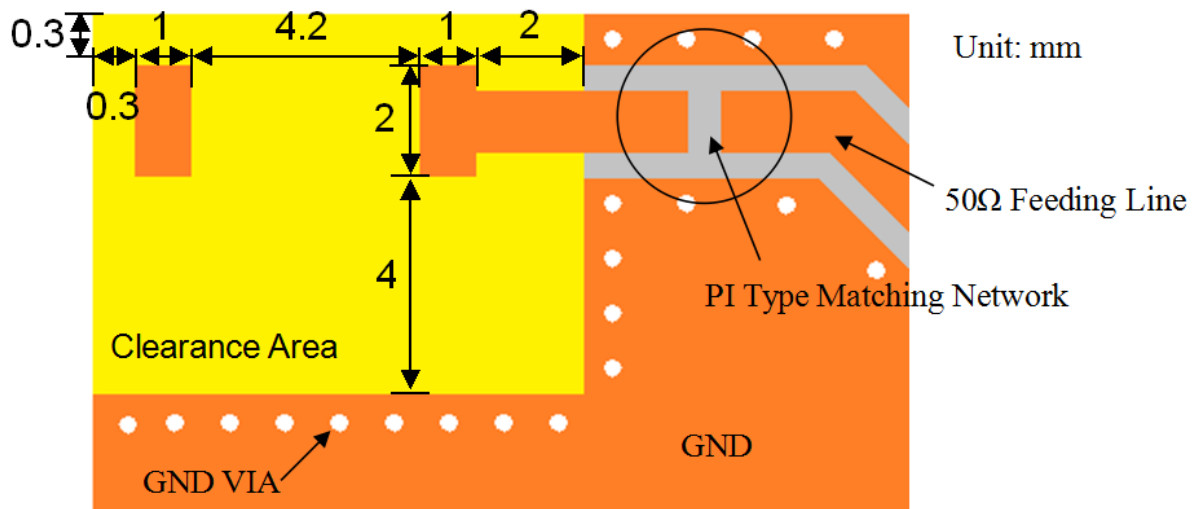
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1. INTRODUCTION

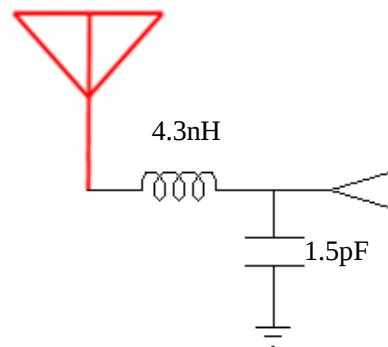
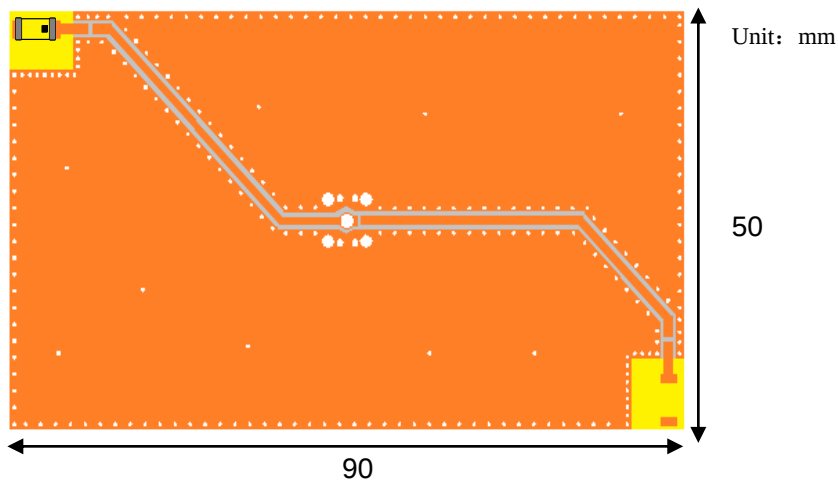
kinghelm Microwave Multi-Layer Ceramic Antenna LA series are designed to be used in WLAN、WiFi、Bluetooth、PHS、 Multiple-band Mobile phone antenna, FM, etc and compact size SMD chip design.

2. Dimensions (Unit: mm)





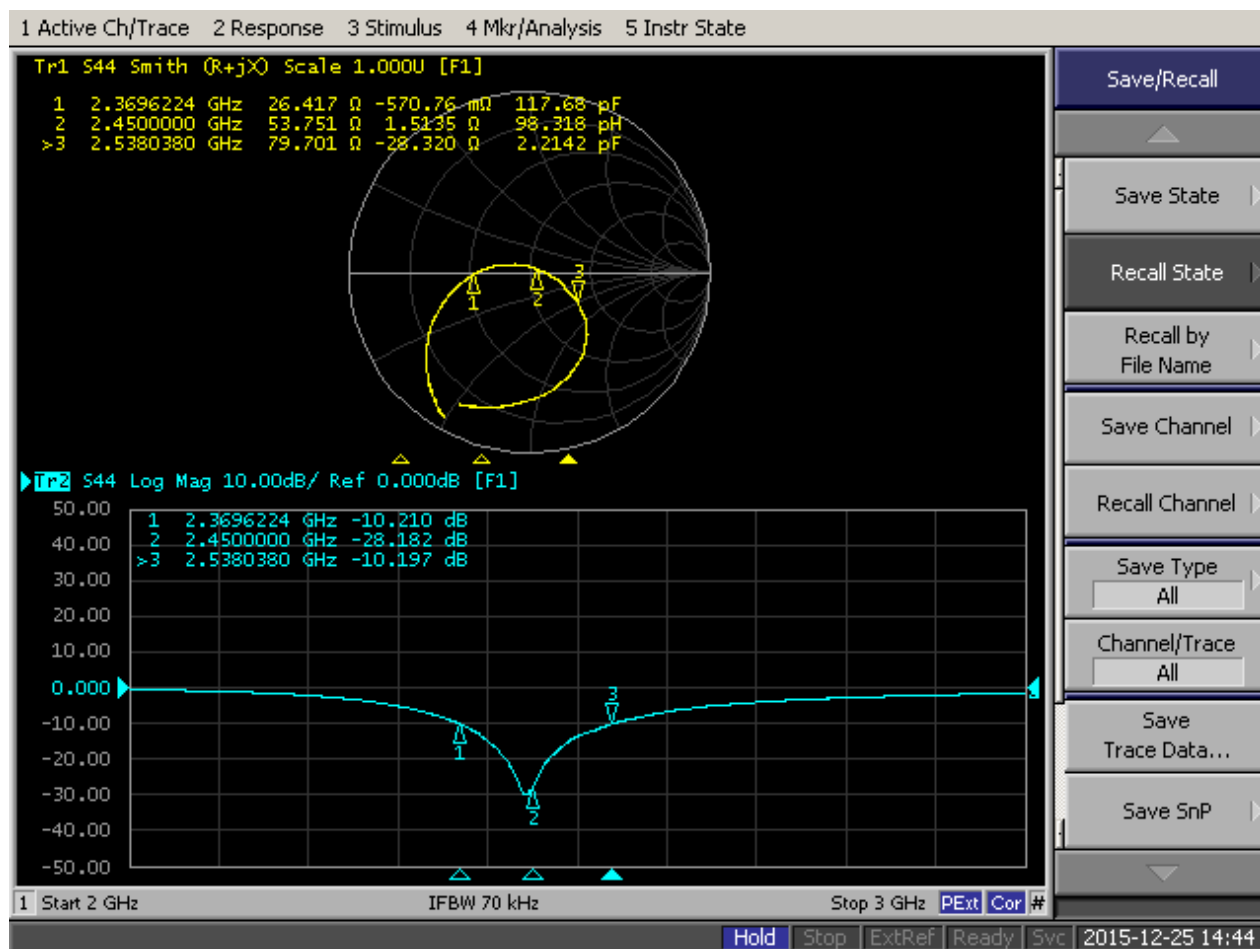
3. Evaluation Board and Matching Circuits



4. Electrical Characteristics

No.	Item	Specifications
4.1	Working Central Frequency	2450 MHz
4.2	Band Width	100MHz typ.
4.3	Peak Gain	4.97 dBi
4.4	V.S.W.R	≤ 2.0
4.5	Polarization	Linear
4.6	Azimuth Beam width	Omni-directional
4.7	Impedance	50 Ω

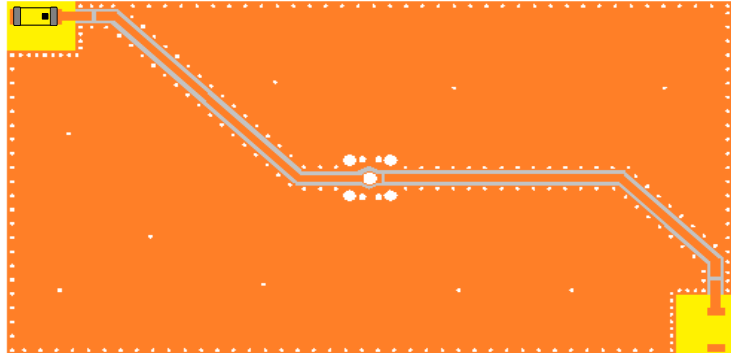
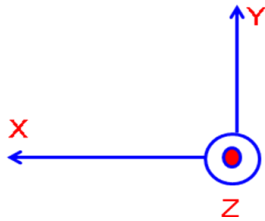
5. Characteristic curve



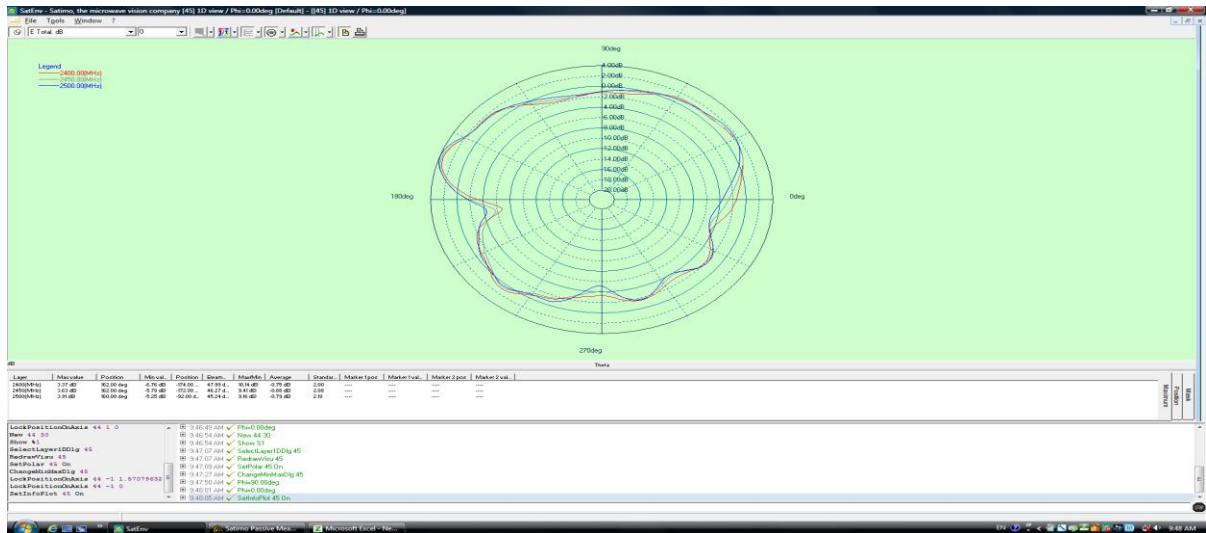
6. coordinates

Radiation Pattern & Efficiency

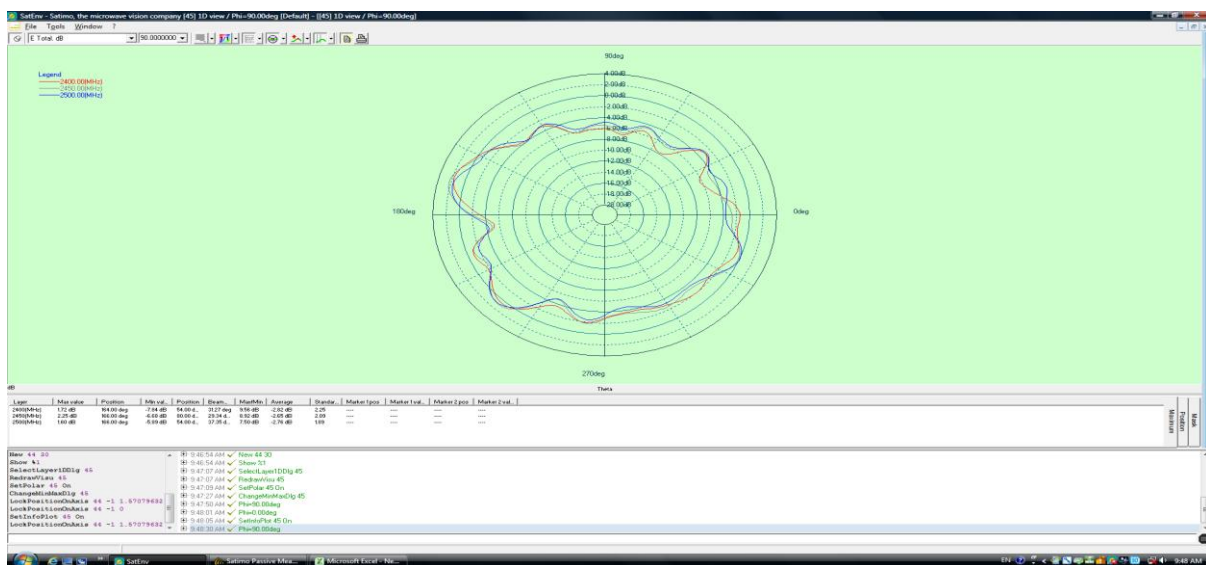
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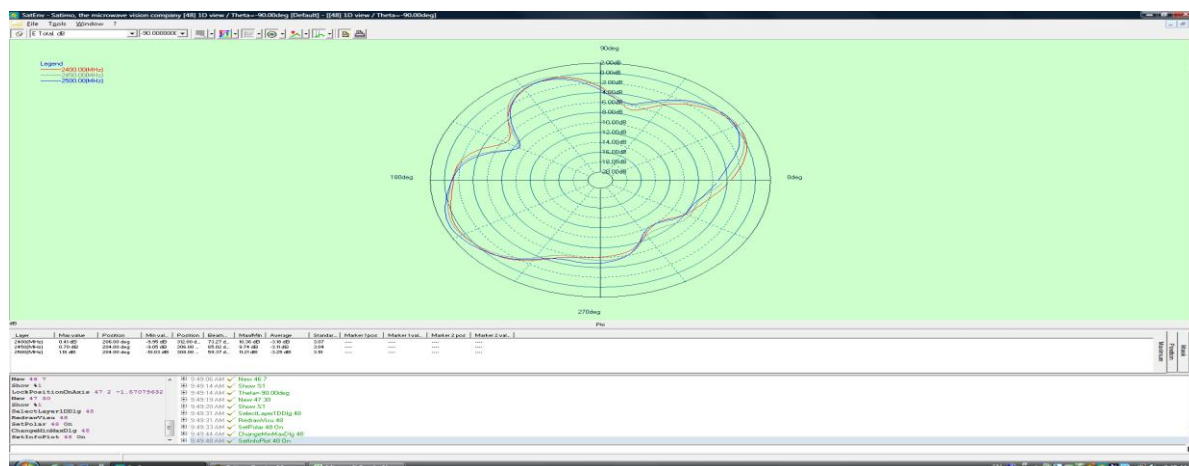
X-Z Plane



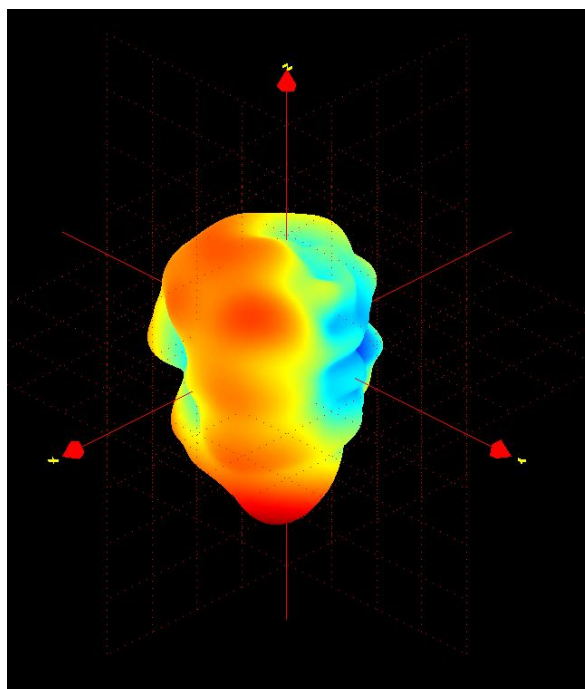
Y-Z Plane



X-Y Plane



3D Radiation Pattern



Frequency (MHz)	2400	2450	2500
Avg. Gain (dBi)	-0.75	-0.79	-0.88
Peck Gain (dBi)	4.52	4.97	4.85
Efficiency (%)	70.2	71.1	71.2

7. Post Dependability Tolerance

Post Dependability Tolerance (Refer to the table)

No.	Item	Post Dependability Tolerance
7.1	Central Frequency	± 5 MHz
7.2	Band Width	± 5 MHz
7.3	Gain	± 0.1 dBi
7.4	V.S.W.R (in BW)	± 0.1

8. Dependability Test

Temperature range $25 \pm 5^{\circ}\text{C}$

Relative Humidity range 55~75%RH

Operating Temperature range $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$

8.1 Vibration Resist

The device should satisfy the electrical characteristics specified in paragraph 8.1~8.4 after applied to the vibration of 10 to 55Hz with amplitude of 1.5mm for 2 hours each in X , Y and Z directions.

8.2 Drop Shock

The device should satisfy the electrical characteristics specified in paragraph 8.1~8.4 after dropping onto the hard wooden board from the height of 100cm for 3 times each facet of the 3 dimensions of the device.

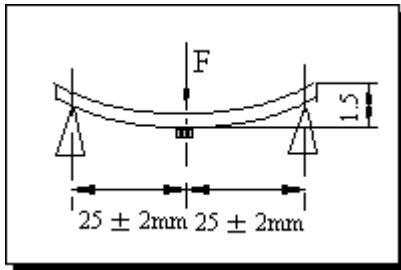
8.3 Solder Heat Proof

The device should be satisfied after preheating at $120^{\circ}\text{C} \sim 150^{\circ}\text{C}$ for 120 seconds and dipping in soldering Sn at $255^{\circ}\text{C} + 10^{\circ}\text{C}$ for 5 ± 0.5 seconds, or electric iron $300^{\circ}\text{C} - 10^{\circ}\text{C}$ for 3 ± 0.5 seconds, without damage.

8.4 Adhesive Strength of Termination

The device have no remarkable damage or removal of the termination after horizontal force of 5N(≤ 0603); 10N(>0603) with 10 ± 1 seconds.

8.5 Bending Resist Test



Weld the product to the center part of the PCB with the thickness $1.6 \pm 0.2\text{mm}$ as the illustration shows, and keep exerting force arrow-ward on it at speed of 1mm/S , and hold for $5 \pm 1\text{s}$ at the position of 1.5mm bending distance, so far, any peeling off of the product metal coating should not be detected.

8.6 Moisture Proof

The device should satisfy the electrical characteristics specified in paragraph 8.1~8.4 after exposed to the temperature $60 \pm 2^\circ\text{C}$ and the relative humidity $90\sim 95\%$ RH for 96 hours and 1~2 hours recovery time under normal condition.

8.7 High Temperature Endurance

The device should satisfy the electrical characteristics specified in paragraph 8.1~8.4 after exposed to temperature $85 \pm 5^\circ\text{C}$ for 96 ± 2 hours and 1~2 hours recovery time under normal temperature.

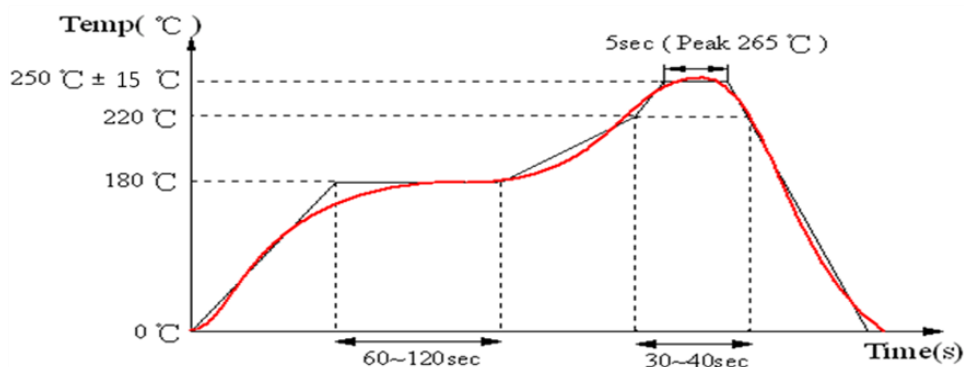
8.8 Low Temperature Endurance

The device should also satisfy the electrical characteristics specified in paragraph 8.1~8.4 after exposed to the temperature $-40^\circ\text{C} \pm 5^\circ\text{C}$ for 96 ± 2 hours and to 2 hours recovery time under normal temperature.

8.9 Temperature Cycle Test

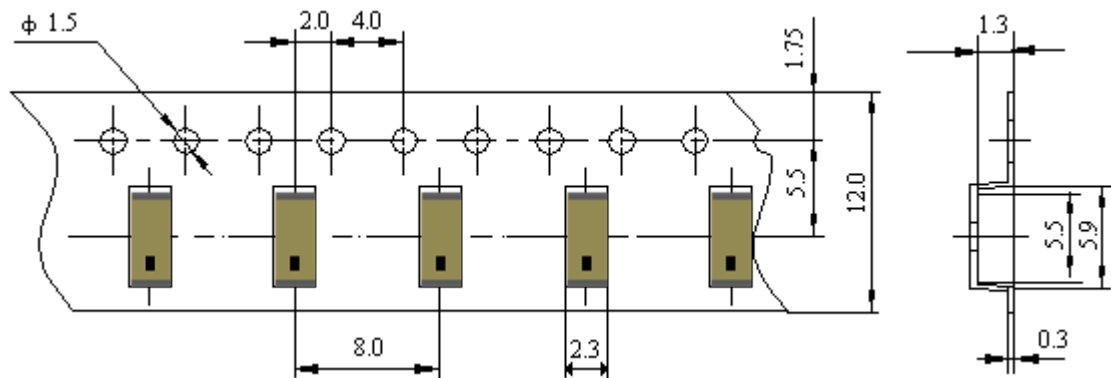
The device should also satisfy the electrical characteristics specified in paragraph 8.1~8.4 after exposed to the low temperature -40°C and high temperature $+85^\circ\text{C}$ for 30 ± 2 min each by 5 cycles and 1 to 2 hours recovery time under normal temperature.

9. Reflow Soldering Standard Condition



10. Packaging and Dimensions

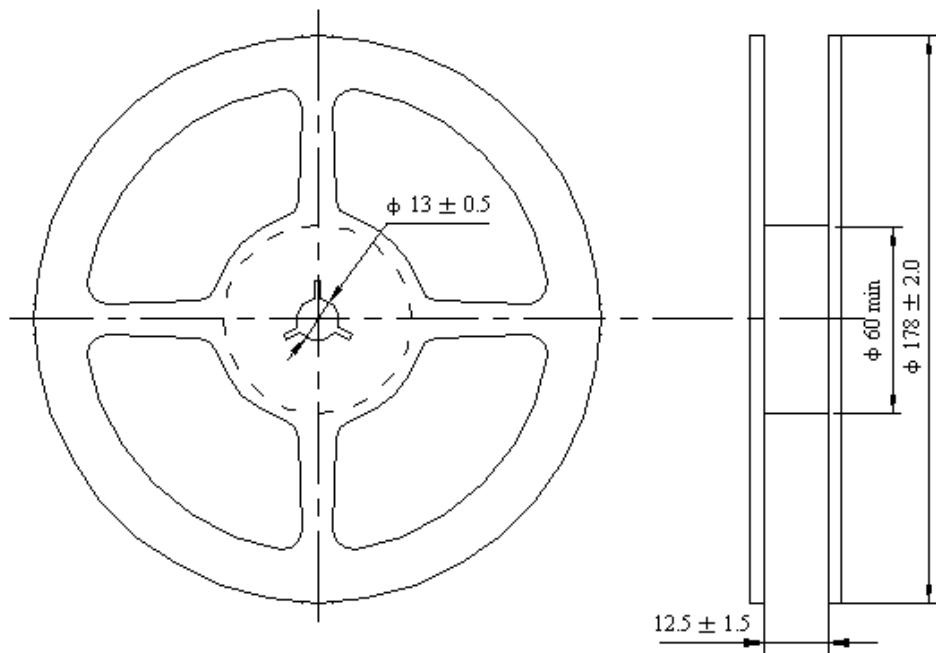
10.1 Plastic Tape



Remarks for Package

Reserve a length of 150~200mm for the trailer of the carrier and 250~300 mm for the leader of the carrier and further 250mm of cover tape at the leading part of the carrier.

10.2 Reel (3000 pcs/Reel)



10.3 Storage Period

Product should be used within six months of receipt.

MSL 1 / Storage Temperature Range : <30 degree C, Humidity : <85%RH