

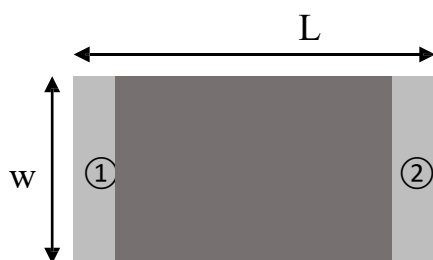
## Features

- 1.Surface Mounted Devices with a small dimension of 1.6 x 0.8 x 0.8 mm meet future miniaturization trend.
- 2.Embedded and LTCC (low temperature co-fired ceramic) technology is able to integrate with system design as well as beatifying the housing of final product.
- 3.High stability and low tolerance.

## Applications

1. Bluetooth
2. Wireless LAN
3. ISM band 2.4GHz wireless applications

### Dimensions (Unit: mm)



( Top View )

| Number | Terminal Name |
|--------|---------------|
| ①      | INPUT         |
| ②      | NC            |



( Bottom View )



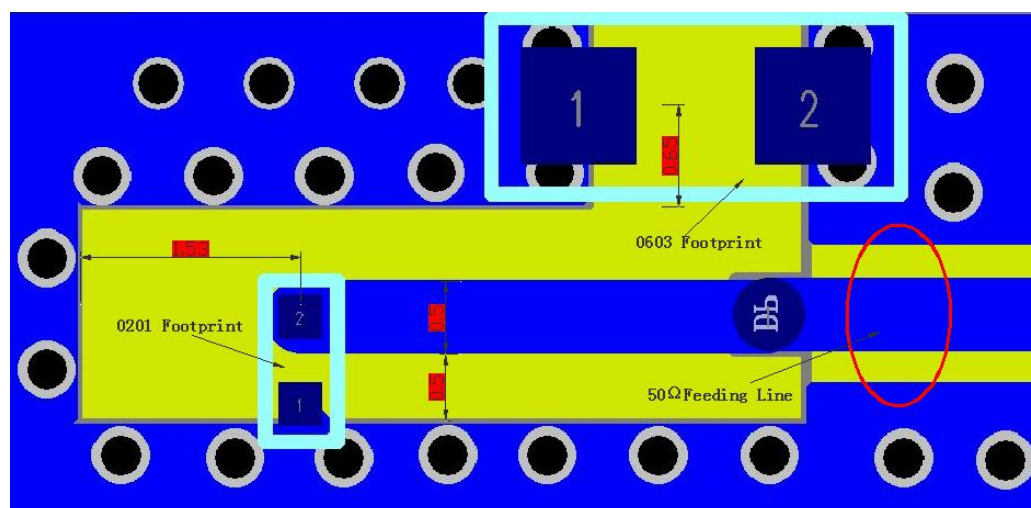
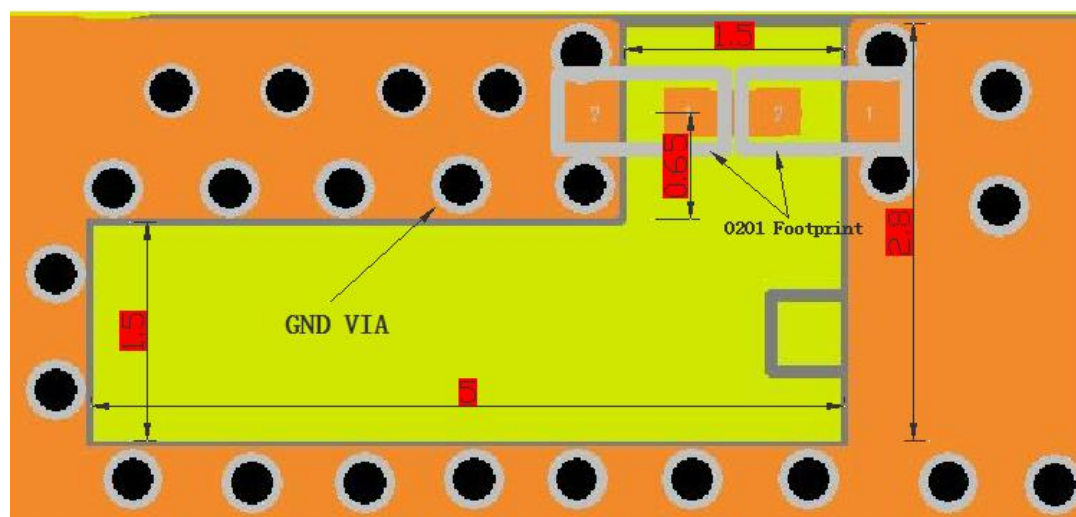
( Side View )

| Symbols    | L         | W         | T         | A         |
|------------|-----------|-----------|-----------|-----------|
| Dimensions | 1.60±0.20 | 0.80±0.20 | 0.80±0.20 | 0.30±0.10 |

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## Evaluation Board and Matching Circuits



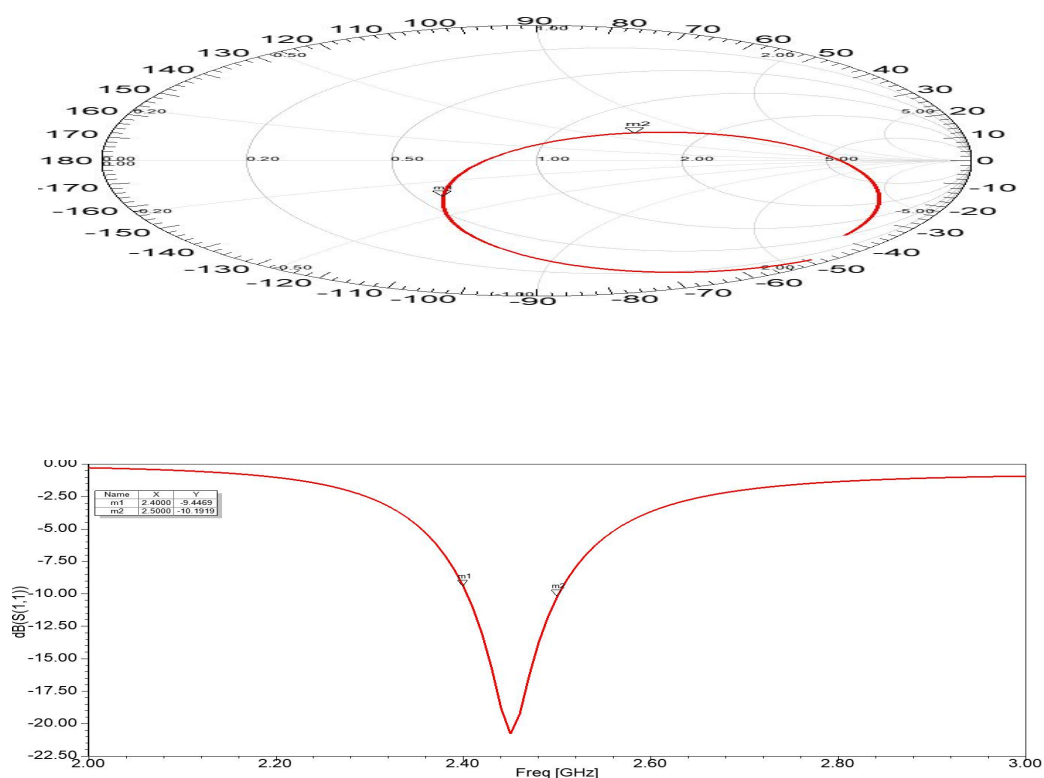
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## Electrical Characteristics

|   | Feature           | Specification   |
|---|-------------------|-----------------|
| 1 | Central frequency | 2445MHz         |
| 2 | Bandwidth         | >100MHz         |
| 3 | Peak gain         | 3.4dBi          |
| 4 | VSWR              | <2              |
| 5 | Polarization      | Linear          |
| 6 | Azimuth beamwidth | Omnidirectional |
| 7 | Impedance         | 50 $\Omega$     |

## Characteristic curve

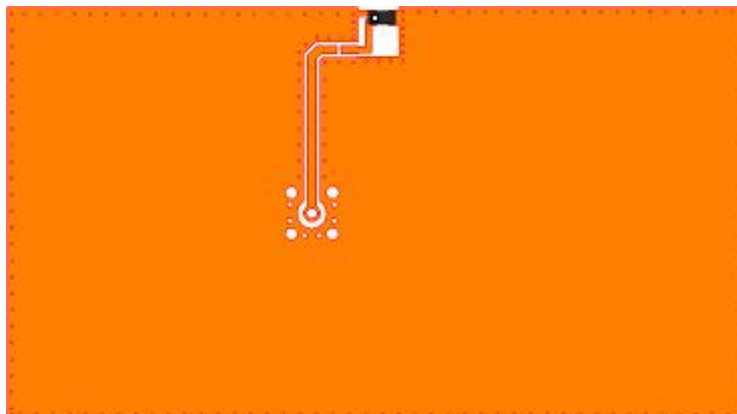
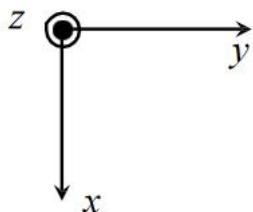


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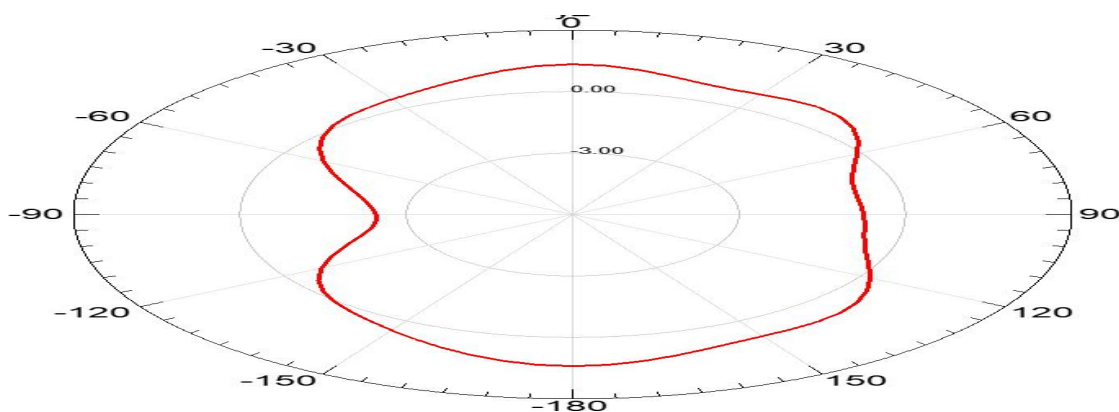
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## Radiation Pattern

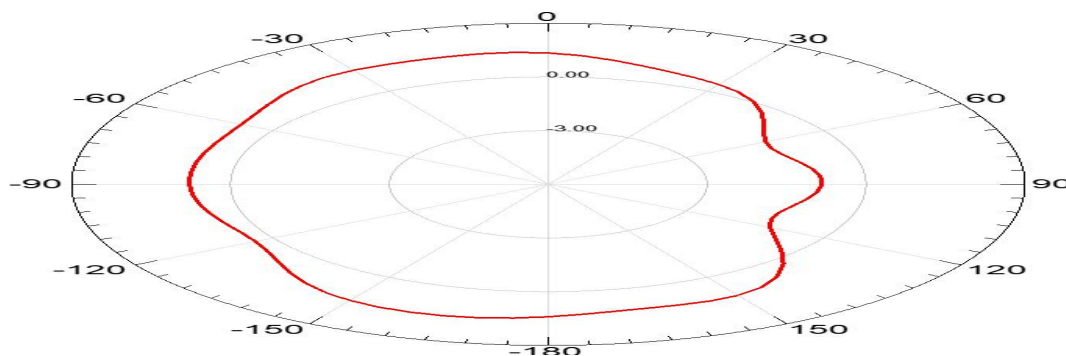
coordinates:



Y-Z Plane



X-Z Plane

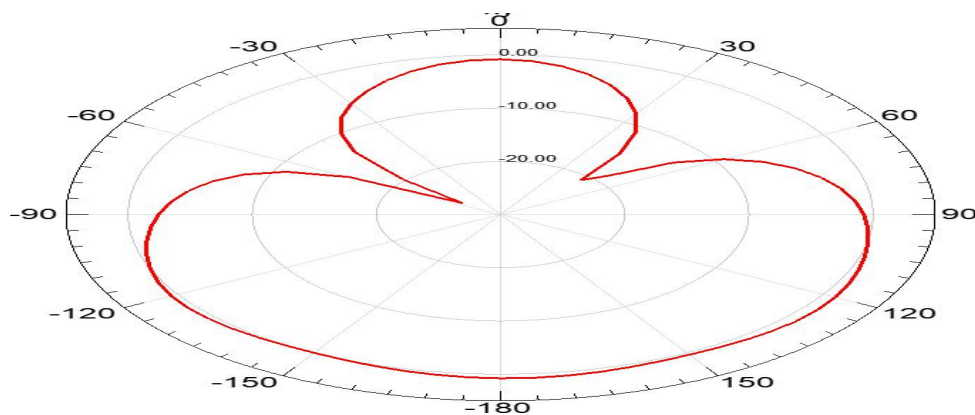


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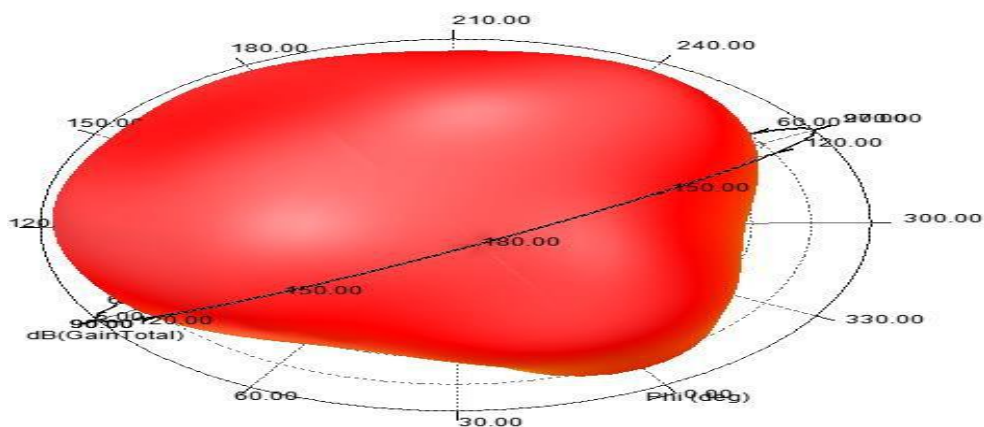
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X-Y Plane



3D Radiation Pattern



| Frequency  | 2400MHz | 2450MHz | 2500MHz |
|------------|---------|---------|---------|
| Avg. gain  | -1.14   | -0.85   | -1.30   |
| Peak gain  | 2       | 3.4     | 2.5     |
| Efficiency | 77%     | 82%     | 78%     |

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## Dependability Test

|                       |             |
|-----------------------|-------------|
| Test Temperature:     | 25°C±3°C    |
| Operating Temperature | -25°C~+85°C |
| Temperature           | 5~40°C      |
| Relative Humidity     | 20~70%      |

## Moisture Proof

Temperature: 40±2°C Humidity: 90~95%RH

Duration: 500h

Recovery conditions: Room temperature Recovery Time: 24h (Class1) or 48h (Class2)

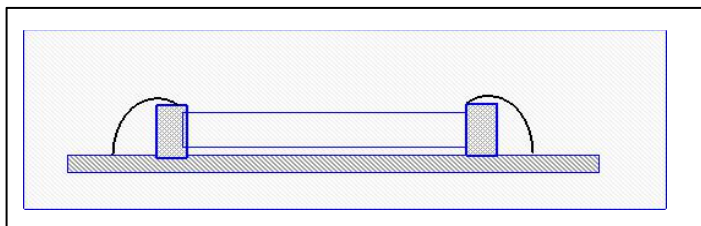
## Solderability

At least 95% of the terminal electrode is covered by new solder. Preheating conditions: 80 to 120°C; 10~30s.

Solder Temperature: 235±5°C Duration: 2±0.5s, Solder Temperature: 245±5°C Duration: 2±0.5s

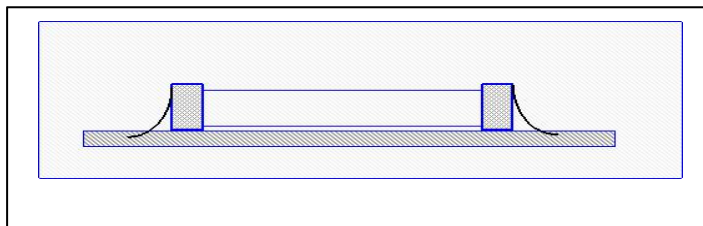
## Optimum Solder Amount for Reflow Soldering

Too much solder



Cracks tend to occur due to large stress.

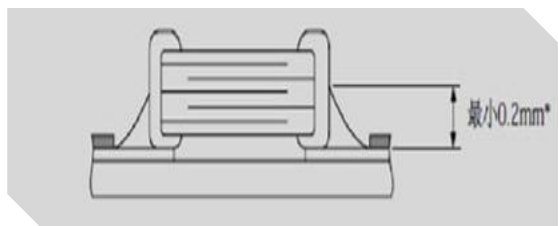
Not enough solder



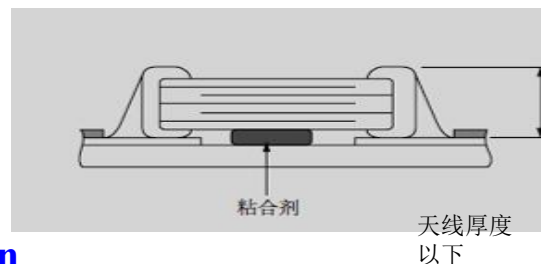
Weak holding force may cause bad connection between the capacitor and PCB.

## Recommended Soldering amounts

The optimal solder fillet amounts for re-flow soldering



The optimal solder fillet amounts for wave soldering



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### Temperature Cycle Test

10±1S Applied Force: 5N Duration: 10±1S

Preheating conditions: up-category temperature, 1h

Recovery time: 24±1h

Initial Measurement

Cycling Times: 5 times, 1 cycle, 4 steps:

| 阶段  | 温度 (°C)                                        | 时间 (分钟) |
|-----|------------------------------------------------|---------|
| 第1步 | 下限温度(NPOX7R/X7S/X6S/XSR-55)<br>Y5V-25 Z5U-10   | 30      |
| 第2步 | 常温 (+20)                                       | 2~3     |
| 第3步 | 上限温度(NPOX7R/X7S-125)<br>Y5V/Z5U/XSR-85 X6S-105 | 30      |
| 第4步 | 常温 (+20)                                       | 2~3     |

### Resistance to Soldering Heat

Preheating 80 to 120°C; 10~30s. Solder Temperature: 235±5°C Duration: 2±0.5s, Solder Temperature: 245±5°C

Duration: 2±0.5s, Preheating 100 to 200°C; 10±2min.

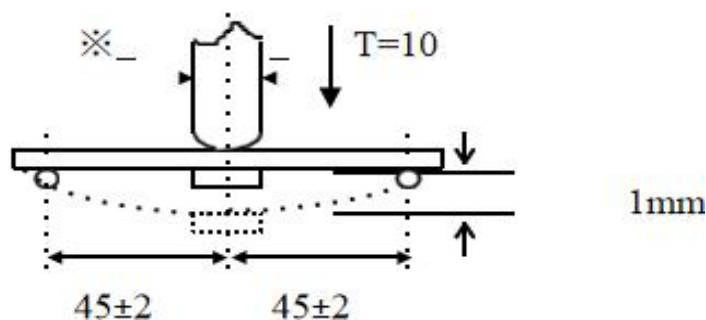
Solder Temperature: 265±5°C Duration: 10±1s

Clean the capacitor with solvent and examine it with a 10X(min.) microscope.

Recovery Time: 24±2h

Recovery condition: Room temperature

### Resistance to Flexure of Substrate



Test Board: Al<sub>2</sub>O<sub>3</sub> or PCB Warp: 1mm Speed: 0.5mm/sec.

Unit: mm

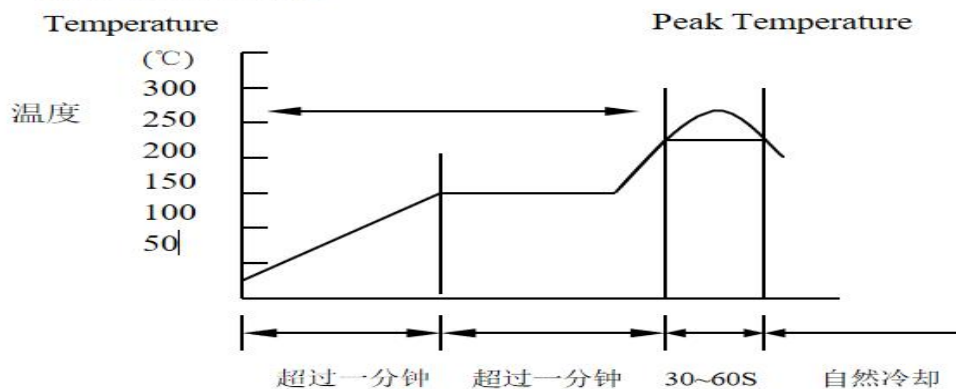
The measurement should be made with the board in the bending position.

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### The temperature profile for soldering

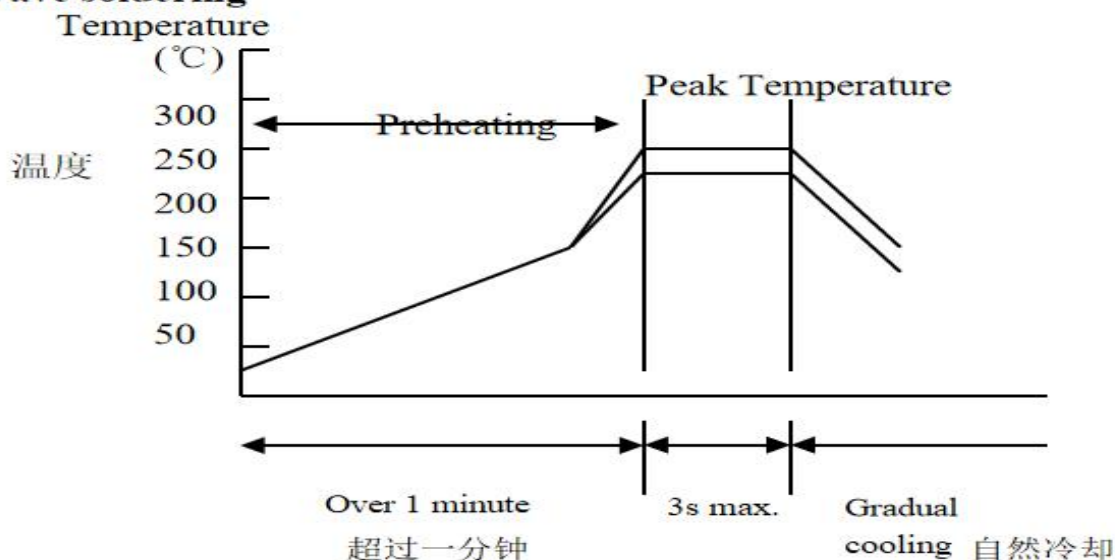
#### Re-flow soldering



|                          |                             |                             |
|--------------------------|-----------------------------|-----------------------------|
|                          | Pb-Sn 焊接<br>Pb-Sn soldering | 无铅焊接<br>Lead-free soldering |
| 尖峰温度<br>Peak temperature | 230°C~250°C                 | 240°C~260°C                 |

While in preheating, please keep the temperature difference between soldering temperature and surface temperature of chips as:  $T \leq 150^{\circ}\text{C}$ .

#### Wave soldering



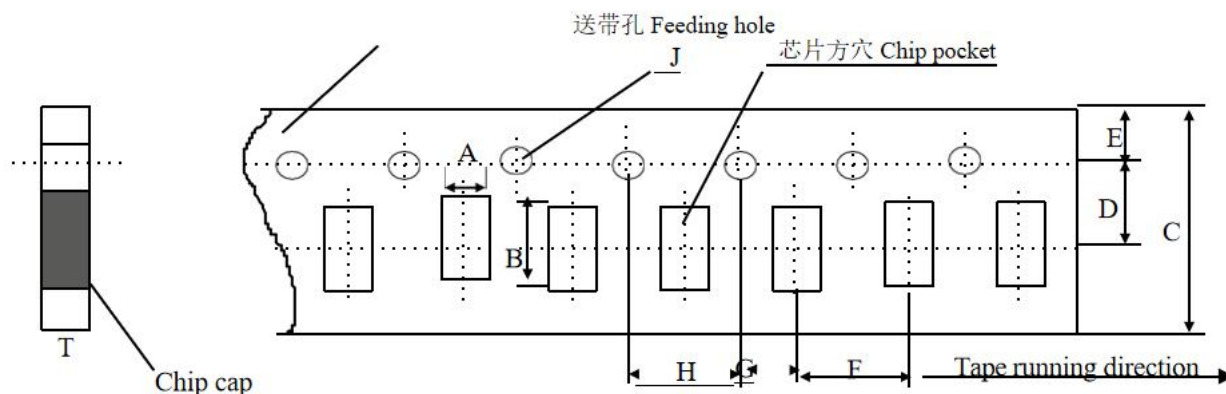
|                          |                             |                             |
|--------------------------|-----------------------------|-----------------------------|
|                          | Pb-Sn 焊接<br>Pb-Sn soldering | 无铅焊接<br>Lead-free soldering |
| 尖峰温度<br>Peak temperature | 230°C~260°C                 | 240°C~270°C                 |

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## P/N: SURL160808 SRF08

Dimensions of paper taping for 0603types



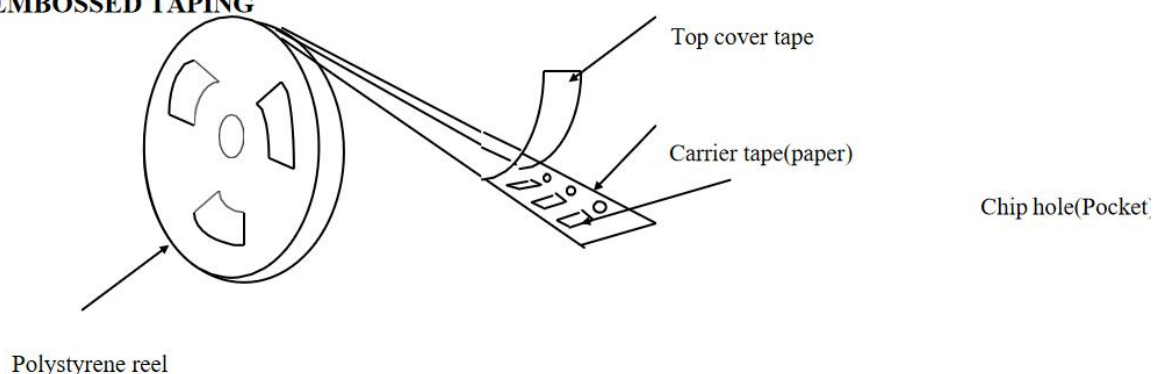
Unit: mm

| 代号Code<br>纸带规格<br>papersize | A             | B             | C             | D*            | E             | F             | G*            | H             | J                | T           |
|-----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------------|-------------|
| 0603                        | 1.10<br>±0.10 | 1.90<br>±0.10 | 8.00<br>±0.10 | 3.50<br>±0.05 | 1.75<br>±0.10 | 4.00<br>±0.10 | 2.00<br>±0.10 | 4.00<br>±0.10 | 1.50<br>-0/+0.10 | 1.10<br>Max |

Reel (4000 pcs/Reel)

Note: The place with \* means where needs exactly dimensions.

### EMBOSED TAPING



### Storage Period

The guaranteed period for solderability is 6 months (Under deliver package condition). Temperature 5~40℃ /Relative Humidity20~70%

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