

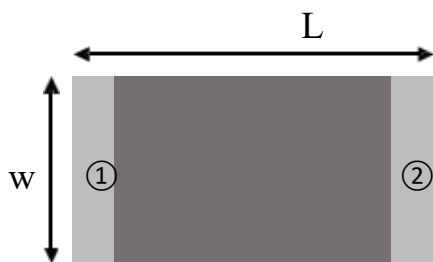
## Features

- 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.

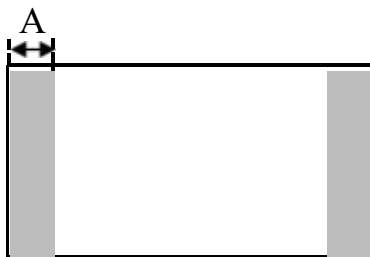
## Applications

1. Bluetooth
2. Wireless LAN
3. ISMband 2.4GHz wireless applications

### Dimensions ( Unit: mm)



( Top View)



( Bottom View)

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



( Side View)

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

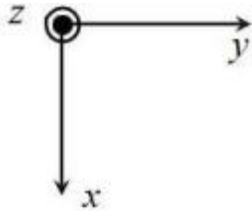
S11-Parameter



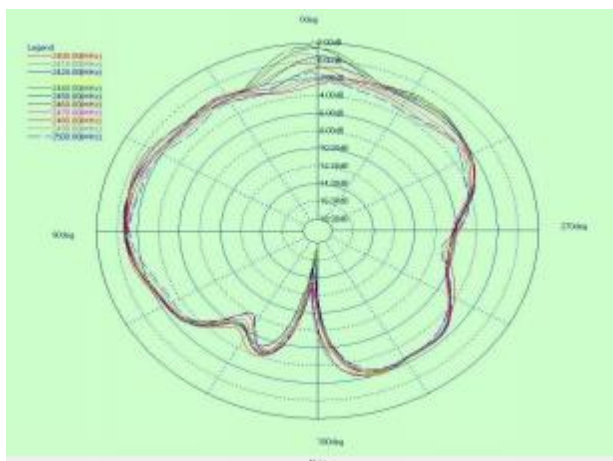
|                |      |      |      |      |
|----------------|------|------|------|------|
| Frequency(MHz) | 2400 | 2450 | 2480 | 2500 |
| VSWR           | 1.56 | 1.16 | 1.48 | 1.79 |

## Radiation Pattern

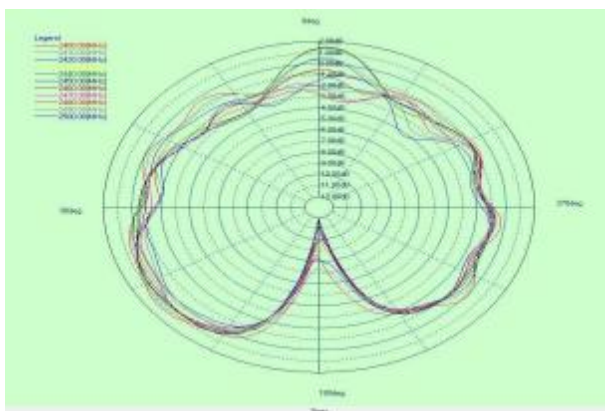
coordinates:



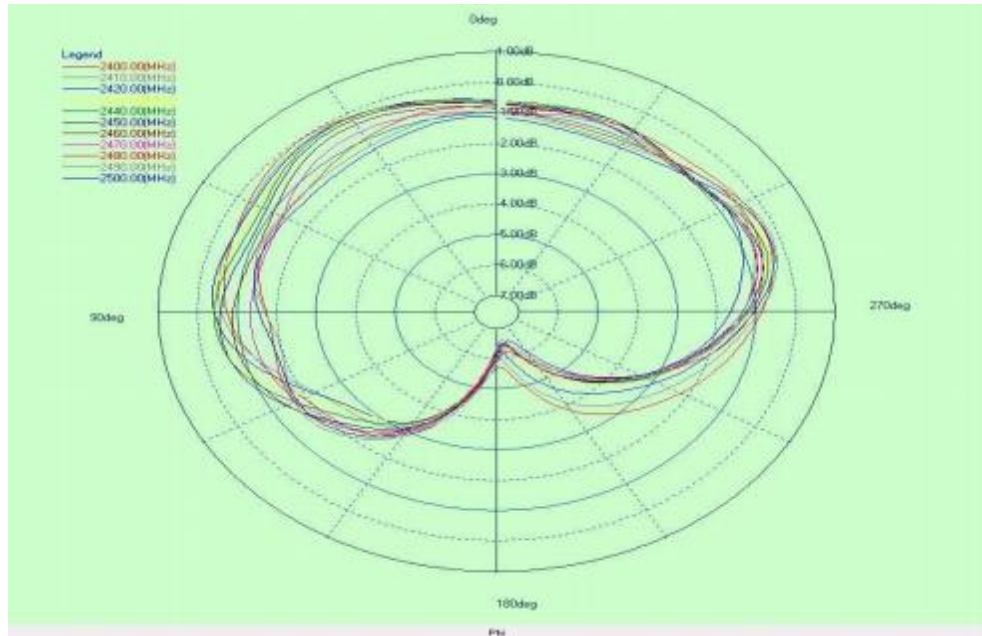
Y-Z Plane



X-Z Plane



X-Y Plane



| Frequency  | 2400MHz | 2450MHz | 2490MHz |
|------------|---------|---------|---------|
| Avg. gain  | 1.30    | 0.93    | 0.45    |
| Peak gain  | 2.7     | 2.6     | 2.5     |
| Efficiency | 57%     | 54%     | 53%     |

### Dependability Test

|                       |                               |
|-----------------------|-------------------------------|
|                       | Test Temperature:<br>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)

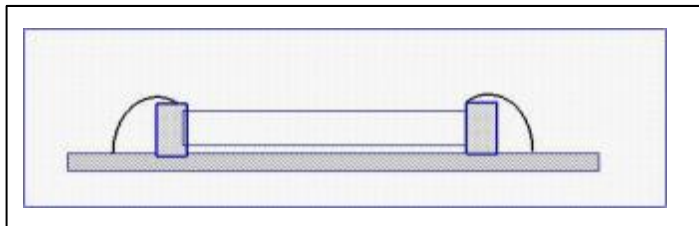
#### Solderability

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

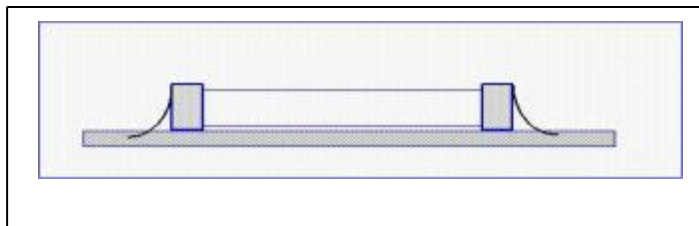
Solder Temperature: 235±5°C Duration: 2±0.5s, Solder Temperature: 245±5°C Duration: 2±0.5s

### Optimum Solder Amount for Reflow Soldering

Too much solder



Cracks tend to occur due to large stress.

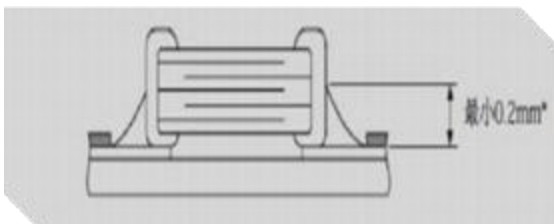


Not enough solder

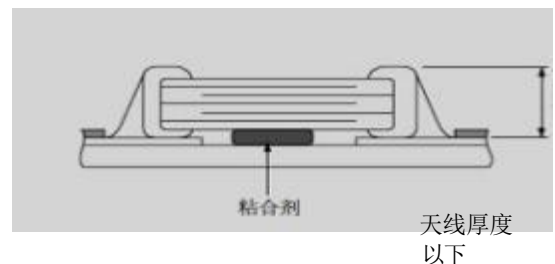
Weak holding force may cause bad connection between the capacitor and PCB.

### Recommended Soldering amounts

The optimal solder fillet amounts for re-flow soldering



The optimal solder fillet amounts for wave soldering



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 (℃)                                            | 时间 (分钟) |
|-----|---------------------------------------------------|---------|
| 第1步 | 下限温度(40℃/X7S/X6S/X5R-55℃<br>Y5V-25 Z5U-10)        | 30      |
| 第2步 | 常温 (+20)                                          | 2~3     |
| 第3步 | 上限温度(125℃/X7R/X7S-125℃<br>Y5V Z5U/X5R-85 X6S-105) | 30      |
| 第4步 | 常温 (+20)                                          | 2~3     |

Resistance to Soldering Heat

Preheating 80 to 120℃; 10~30s. Solder Temperature: 235±5℃ Duration: 2±0.5s, Solder Temperature: 245±5℃ Duration: 2±0.5s, Preheating 100 to 200℃; 10±2min.

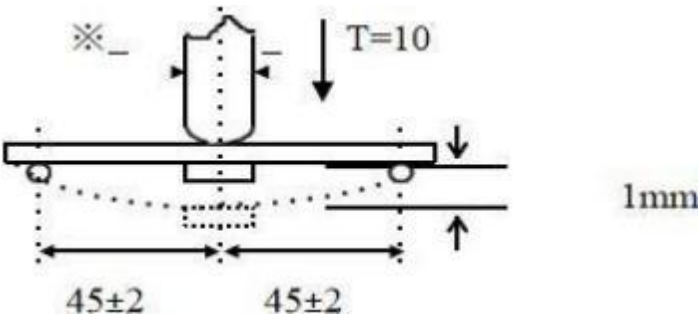
Solder Temperature: 265±5℃ Duration: 10±1s

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

Recovery Time: 24±2h

Recovery condition: Room temperature

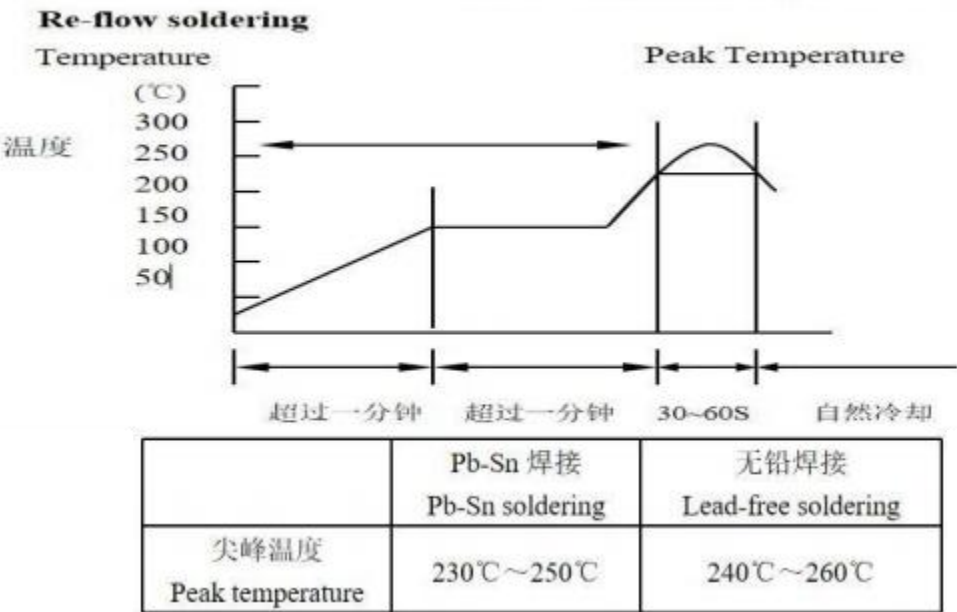
Resistance to Flexure of Substrate



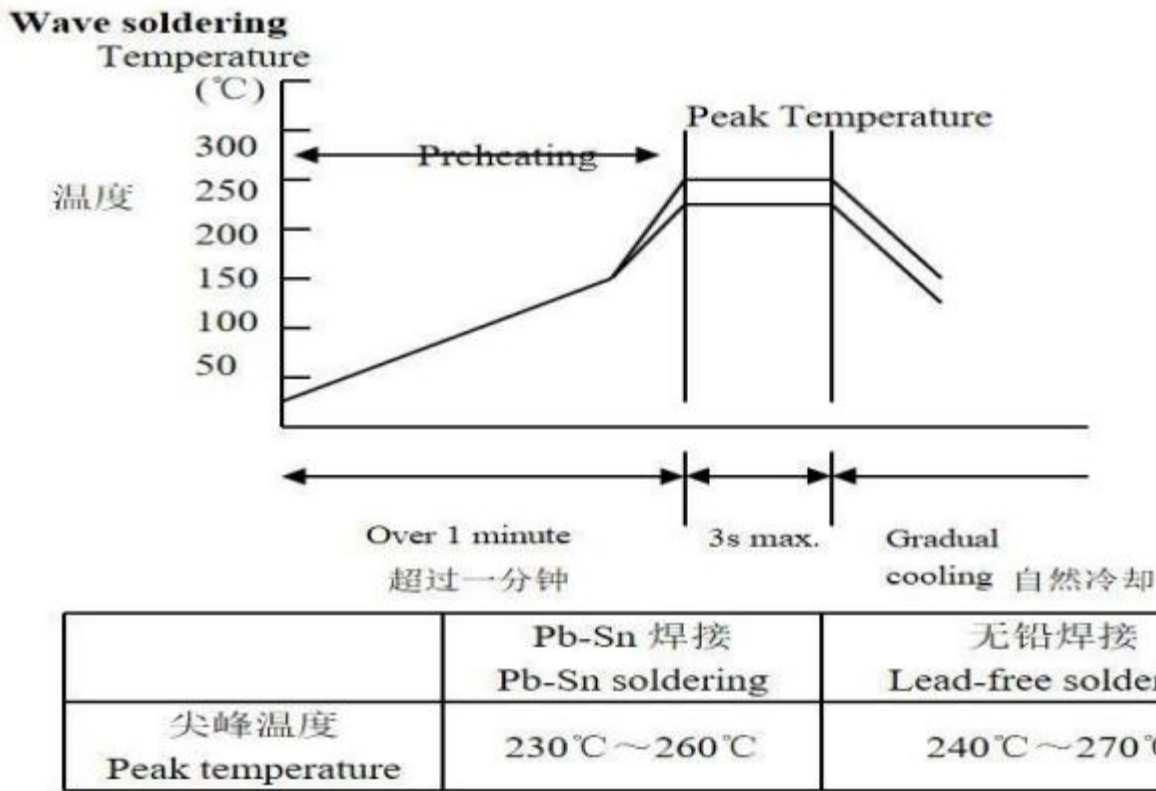
Test Board: Al<sub>2</sub>O<sub>3</sub> or PCB      Warp: 1mm Speed: 0.5mm/sec.  
Unit: mm

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

The temperature profile for soldering

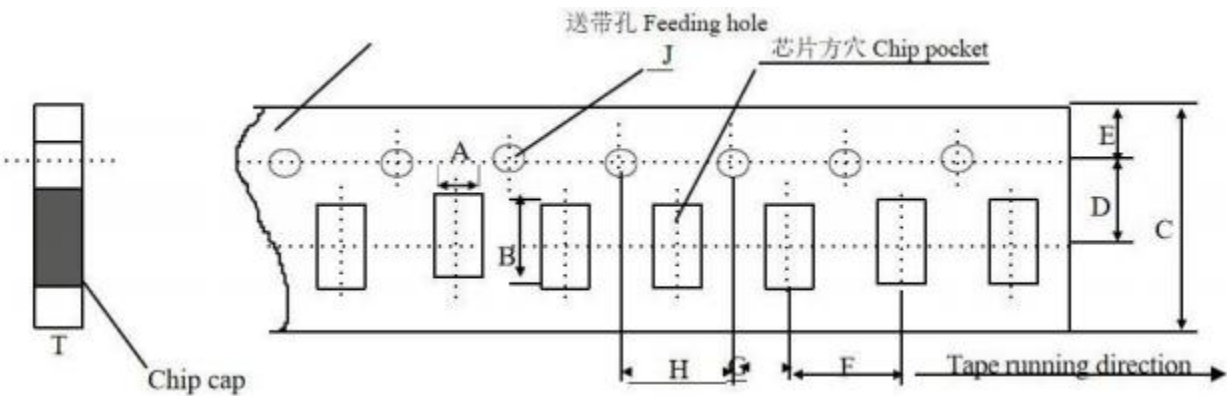


While in preheating, please keep the temperature difference between soldering temperature and surface temperature of chips as:  $T \leq 150^{\circ}\text{C}$ .



P/N:HLX160808D06

Dimensions of paper taping for 0603types

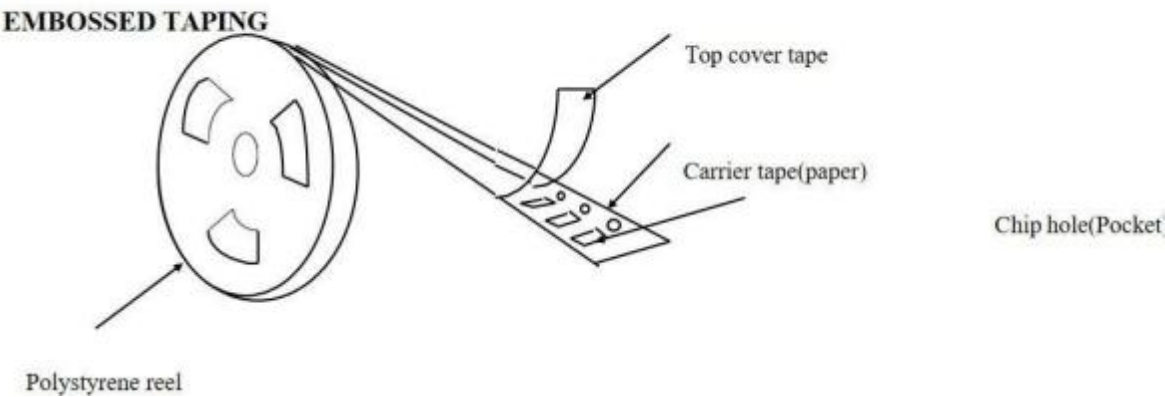


Unit: mm

| 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.



Storage Period

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

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