

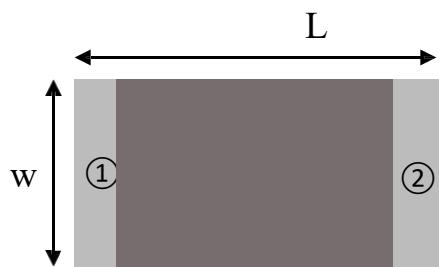
## Features

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 beautifying the housing of final product.
3. High stability and low tolerance.

## Applications

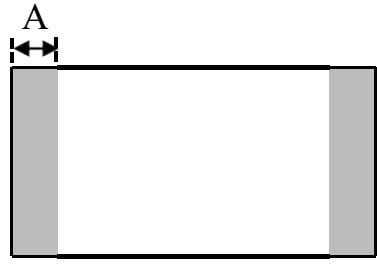
1. Bluetooth
2. Wireless LAN
3. ISM band 2.4GHz wireless applications

## Dimensions (Unit: mm)



Number	Terminal Name
①	INPUT
②	NC

(Top View)



(Side View)

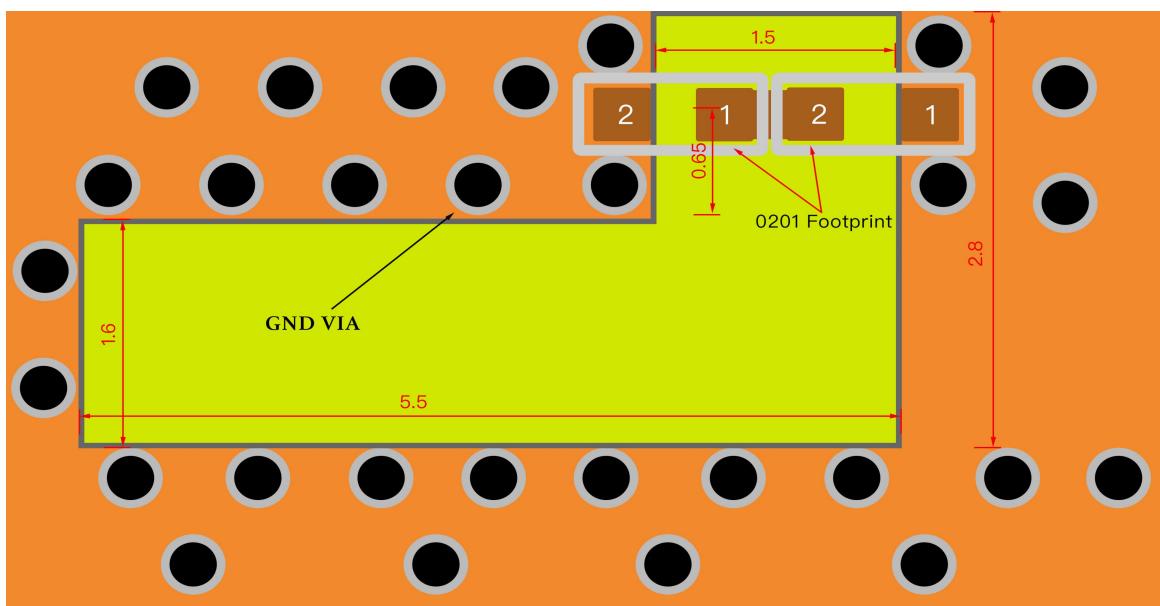
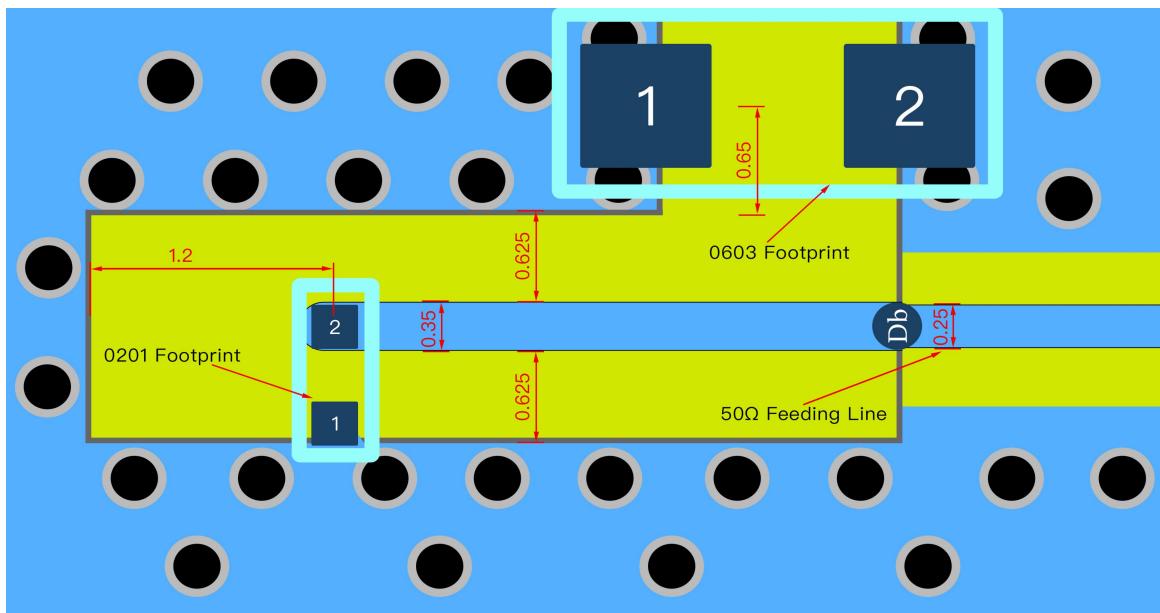
(Bottom View)

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

地址：深圳市宝安区西乡街道铁仔路56号金环宇大厦1004室

Manufacturer: Room 1004, Jinhuanyu Building, No. 56 Tiezai Road, Xixiang Street, Bao'an District, Shenzhen City, Guangdong Province

## Evaluation Board and Matching Circuits



## S11-Parameter



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

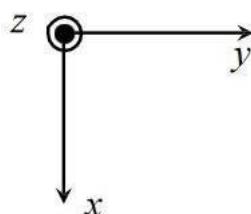
**Electrical Characteristics**

Item	Feature	Specification
1	Central frequency	2445MHz
2	Bandwidth	> 120MHz
3	Peak gain	3dBi
4	VSWR	<2
5	Polarization	Linear
6	Azimuth beamwidth	Omnidirectional
7	Impedance	50 Ω

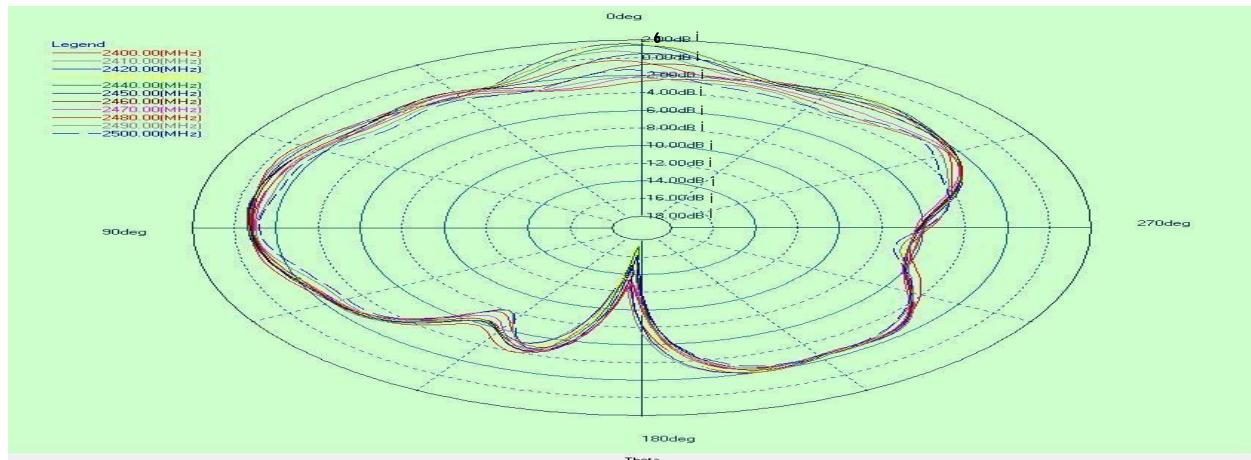
NOTE: The specification is defined based on the test board dimension.

**Radiation Pattern**

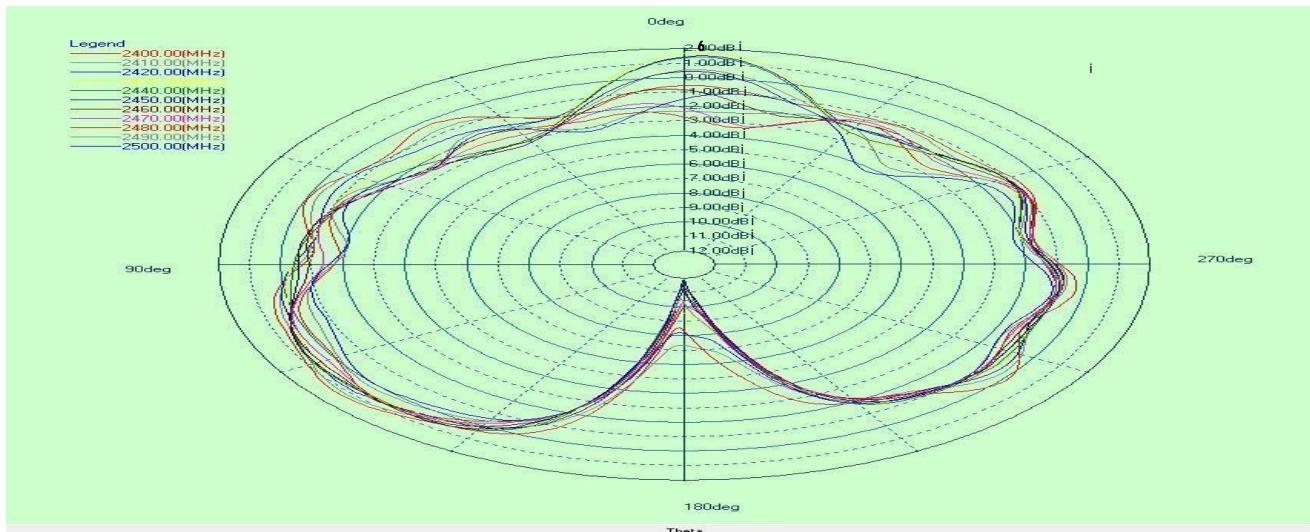
coordinates:



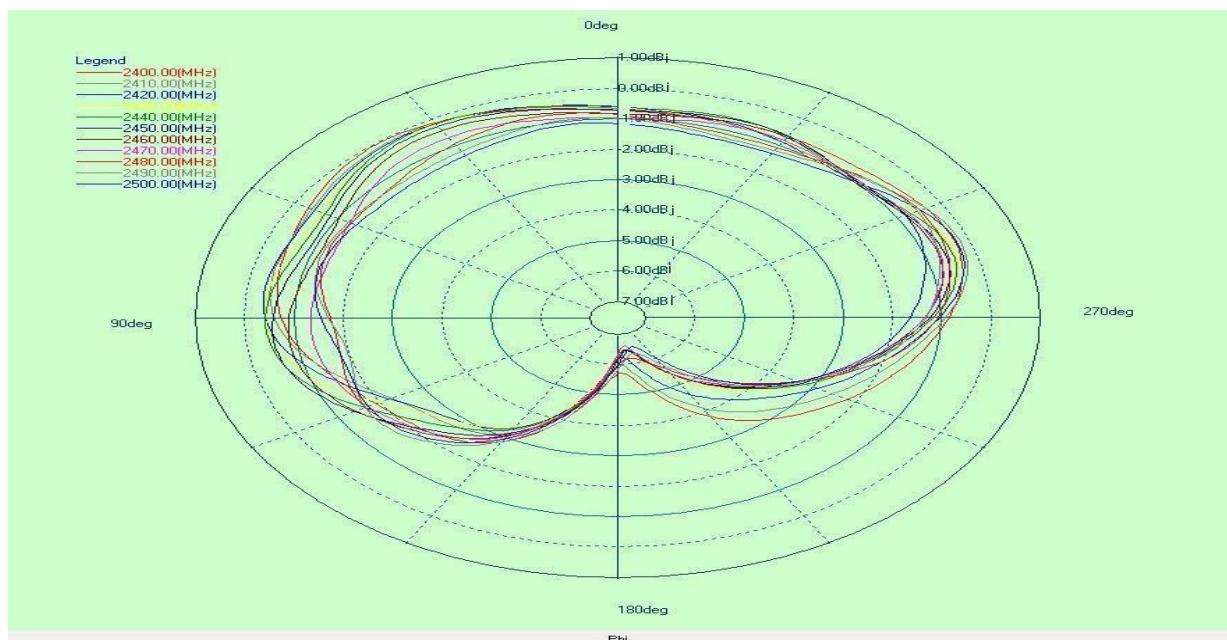
Y-Z Plane



X-Z Plane



X-Y Plane



Frequency	2400MHz	2450MHz	2490MHz
Avg. gain dBi	1.30	0.93	0.45
Peak gain dBi	2.6	3.0	1.95
Efficiency dBi	57%	54%	53%

## 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)

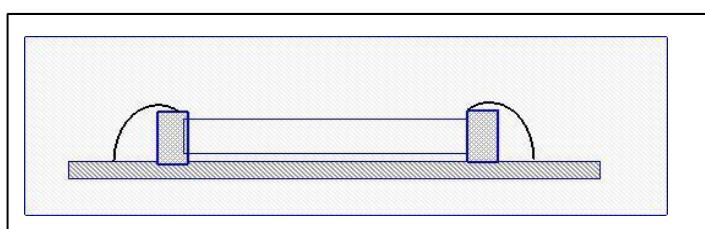
## Solderability

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

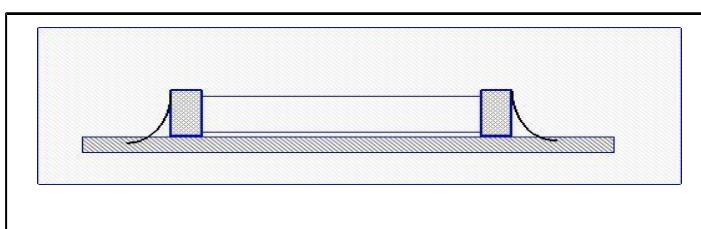
## Optimum Solder Amount for Reflow Soldering

Too much solder



Cracks tend to occur due to large stress.

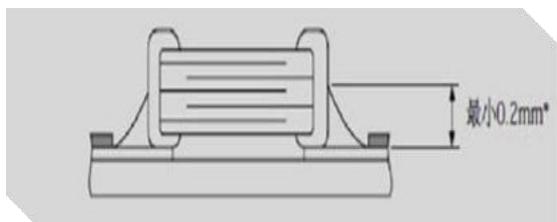
Not enough solder



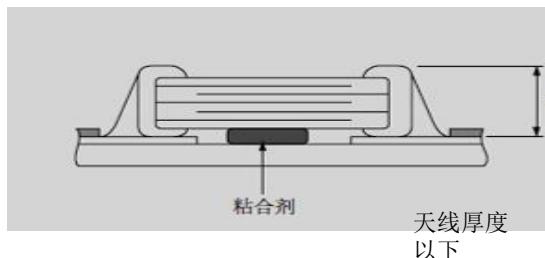
Weak holding force may cause bad connection between the capacitor and PCB.

## Recommended Soldering amounts

The optimal solder fillet amounts for re-flow soldering



The optimal solder fillet amounts for wave soldering



### 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(NPO/X7R/X7S/XGS/XSR-55) Y5V-25 Z5U-10	30
第2步	常温 (+20)	2~3
第3步	上限温度(NPO/X7R/X7S-125) Y5V/Z5U/XSR-85 XGS-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.

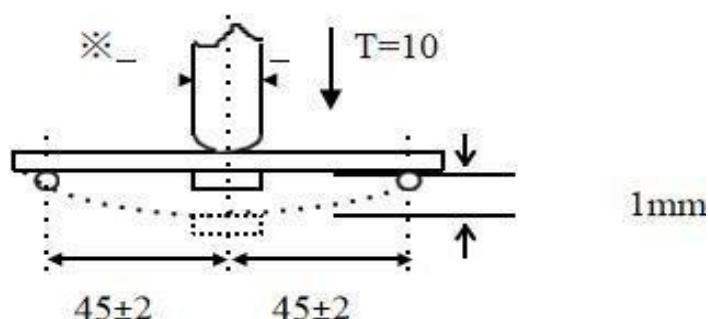
Solder Temperature: 265±5°C Duration: 10±1s

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

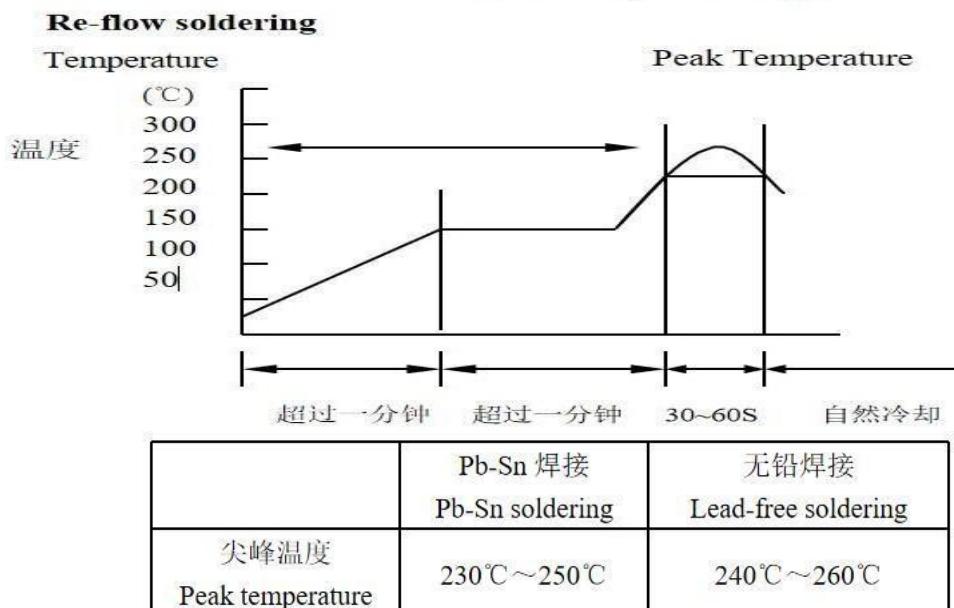
The measurement should be made with the board in

the bending position.

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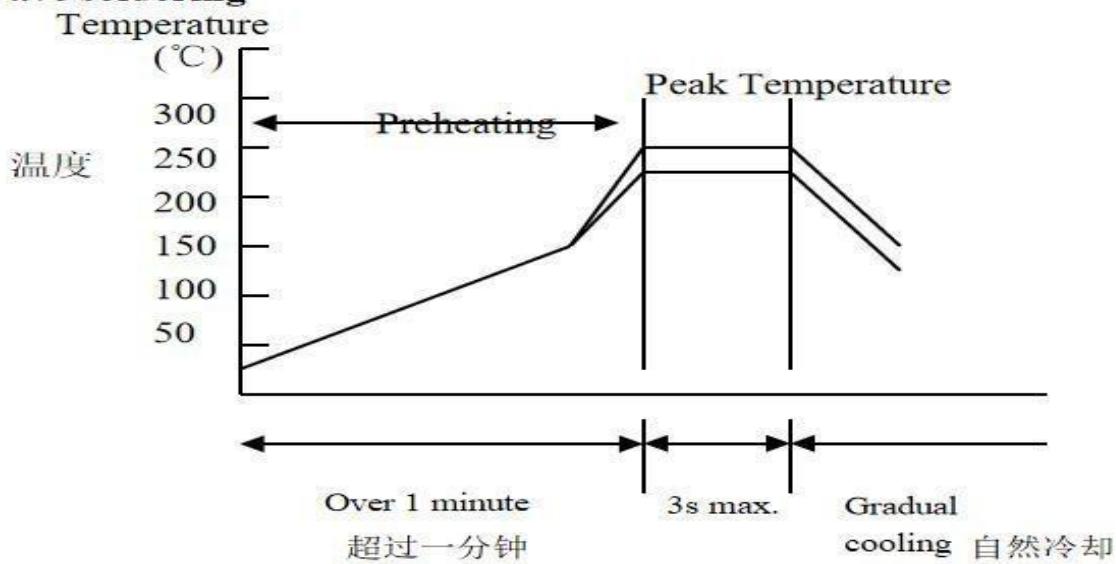
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### The temperature profile for soldering



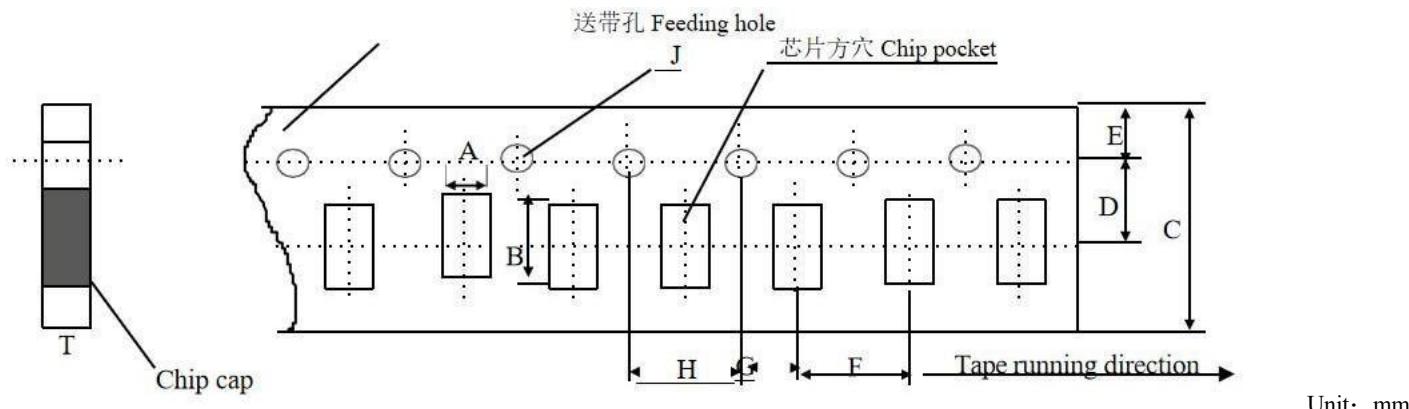
While in preheating, please keep the temperature difference between soldering temperature and surface temperature of chips as:  $T \leq 150^{\circ}\text{C}$ .

### Wave soldering



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

Dimensions of paper taping for 0603types



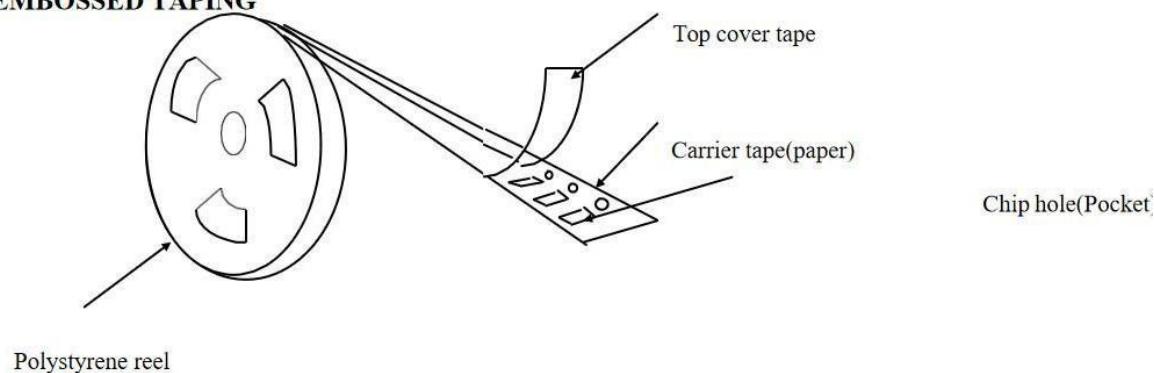
Unit: mm

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

Reel (4000 pcs/Reel)

Note: The place with means where needs exactly dimensions.

#### EMBOSSSED TAPING



#### Storage Period

The guaranteed period for solderability is 6 months (Under deliver package condition). Temperature 5~40°C /Relative Humidity 20~70%