

# 1.6X0.8X0.8 (mm) WiFi/Bluetooth Ceramic Chip Antenna

## (YF1608-1) Engineering Specification

### 1. Product Number

YF 1608 F2 P 2G45 02

1 2 3 4 5 6



### 2. Features

|                 |                   |
|-----------------|-------------------|
| (1)Product Type | Chip Antenna      |
| (2)Size Code    | 1.6x0.8x0.8mm     |
| (3)Type Code    | F2                |
| (4)Packing      | Plastic Packaging |
| (5)Frequency    | 2.45GHz           |

- \*Stable and reliable in performances
- \*Low temperature coefficient of frequency
- \*Low profile, compact size
- \*RoHS compliance
- \*SMT processes compatible



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Prepared by : JIEXI

Designed by : Jason

Checked by : Jason

Approved by : MR.FANG

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### 3. Applications

- \*Bluetooth earphone systems
- \*Hand-held devices when WiFi /Bluetooth functions are needed, e.g., Smart phone.
- \*IEEE802.11 b/g/n
- \*ZigBee
- \*Wireless PCMCIA cards or USB dongle

### 4. Description

Yingfeng chip antenna series are specially designed for WiFi/Bluetooth applications. Based on yingfeng proprietary design and processes, this chip antenna has excellent stability and sensitivity to consistently provide high signal reception efficiency.

### 5. Electrical Specifications (50 x 40 mm<sup>2</sup> ground plane)

5-1. Electrical Table

| Characteristics    |            | Specifications      | Unit |
|--------------------|------------|---------------------|------|
| Outline Dimensions |            | 1.6x0.8x0.8         | mm   |
| Working Frequency  |            | 2400~2500           | MHz  |
| VSWR               |            | 2 Max.              |      |
| Impedance          |            | 50                  | Ω    |
| Polarization       |            | Linear Polarization |      |
| Gain               | Peak       | 2.5 (typical)       | dBi  |
|                    | Efficiency | 75 (typical)        | %    |



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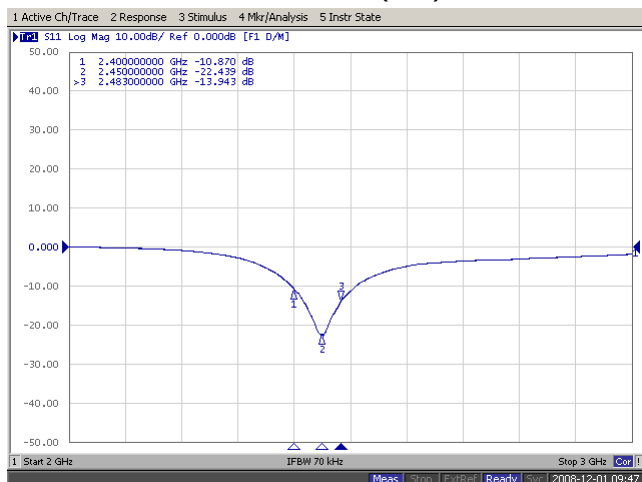
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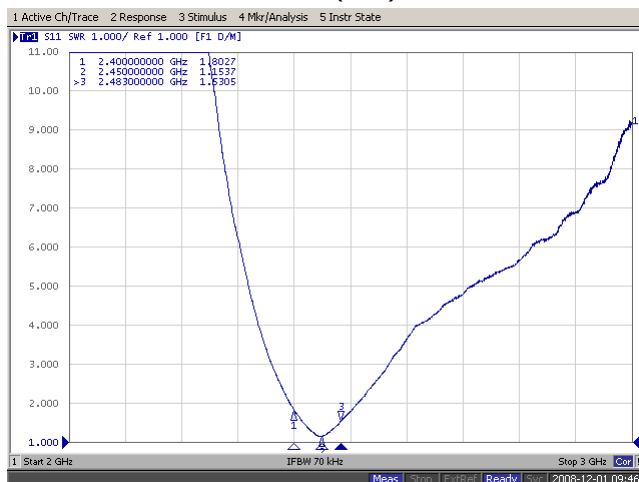
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## 5-2. Return Loss & VSWR

### Return Loss ( $S_{11}$ )



### VSWR( $S_{11}$ )



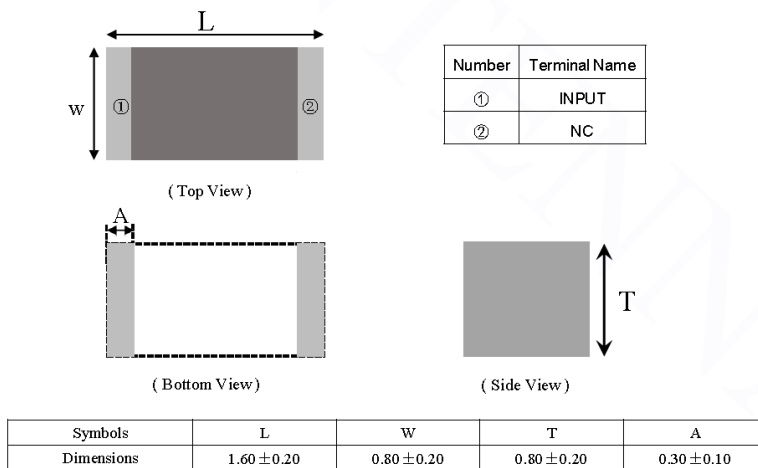
## 6. Antenna Dimensions & Test Board (unit: mm)

### a. Antenna Dimensions

#### Applications

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

#### Dimensions (Unit: mm)



Unit: mm



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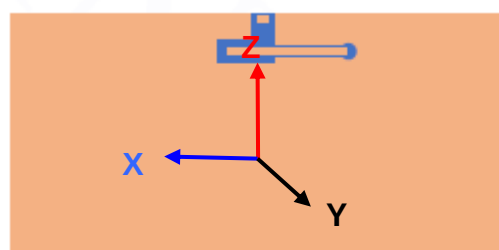
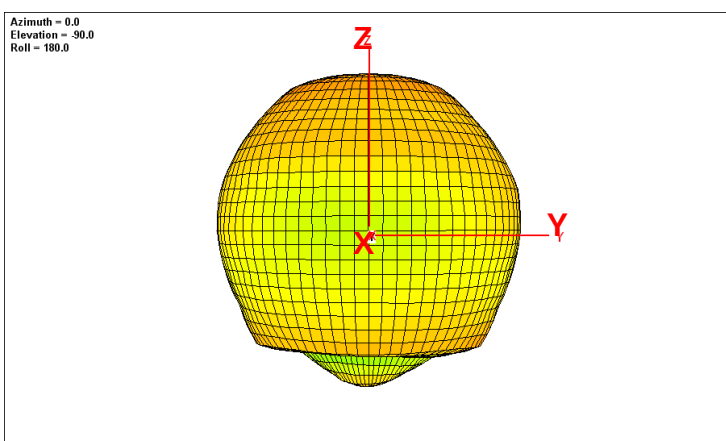
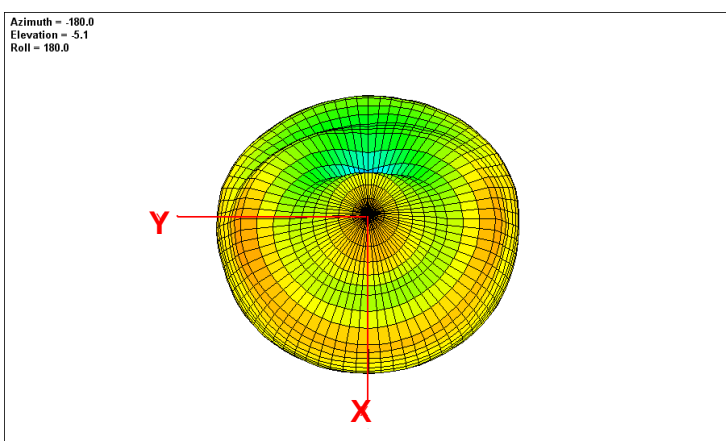
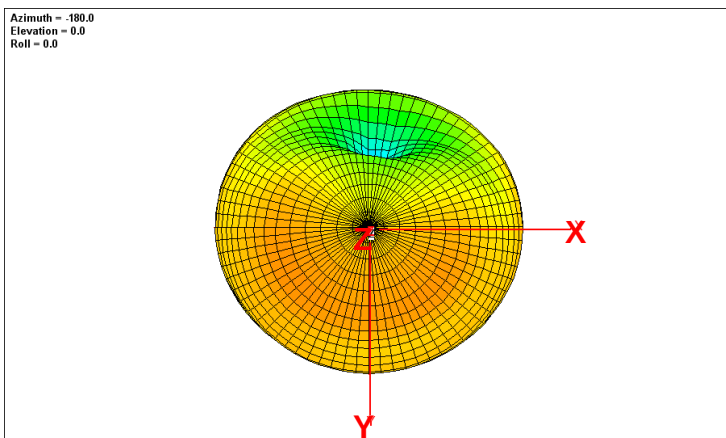
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## 7. Radiation Pattern (50 x 40 mm<sup>2</sup> ground plane)

### 7-1. 3D Gain Pattern @ 2442 MHz



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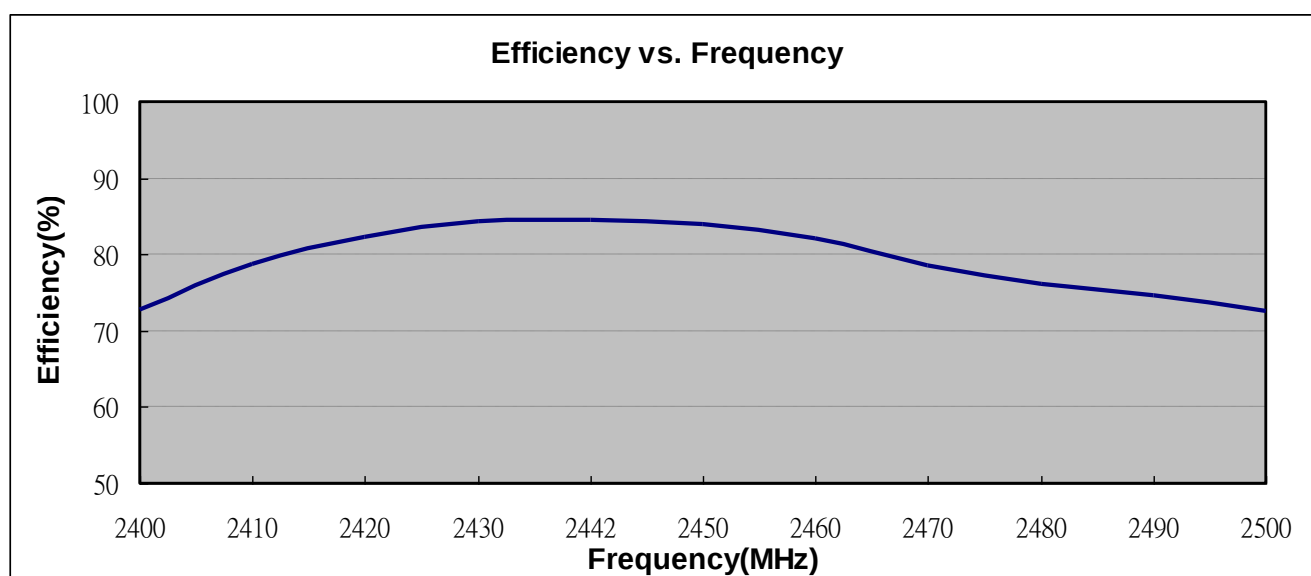
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## 7-2. 3D Efficiency Table

| Frequency( MHz) | 2400 | 2410 | 2420 | 2430 | 2442 | 2450 | 2460 | 2470 | 2480 | 2490 | 2500 |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|
| Efficiency (dB) | -1.4 | -1.0 | -0.9 | -0.7 | -0.7 | -0.8 | -0.9 | -1.1 | -1.2 | -1.3 | -1.4 |
| Efficiency (%)  | 72.8 | 73.7 | 74.3 | 74.4 | 75.5 | 75.0 | 74.0 | 73.6 | 73.1 | 72.6 | 71.5 |
| Gain (dBi)      | 2.1  | 2.2  | 2.3  | 2.4  | 2.5  | 2.5  | 2.4  | 1.8  | 1.7  | 1.6  | 1.4  |

## 7-3. 3D Efficiency vs. Frequency



## 8. Layout Guide

### a. Solder Land Pattern:

Land pattern for soldering (gray marking areas) is as shown below. Depending on Customer's requirement, matching circuit as shown below is also recommended.



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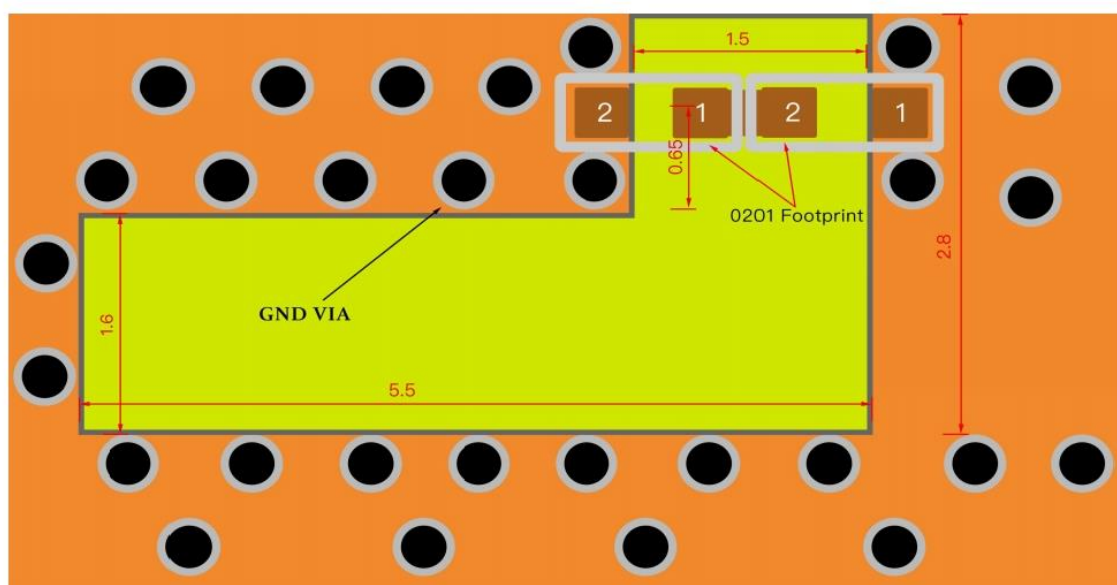
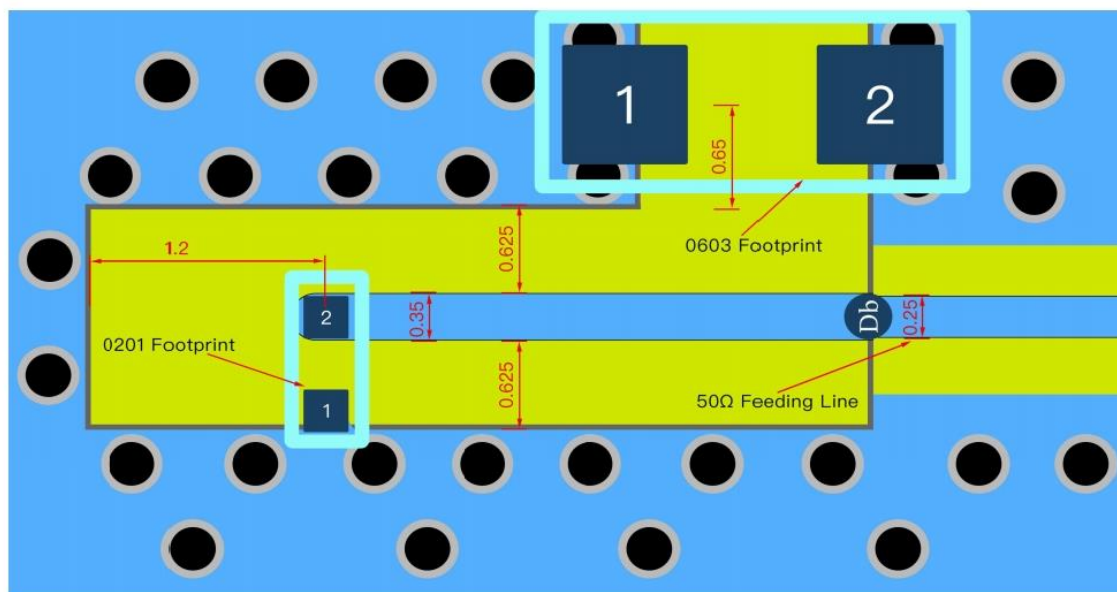
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## Evaluation Board and Matching Circuits



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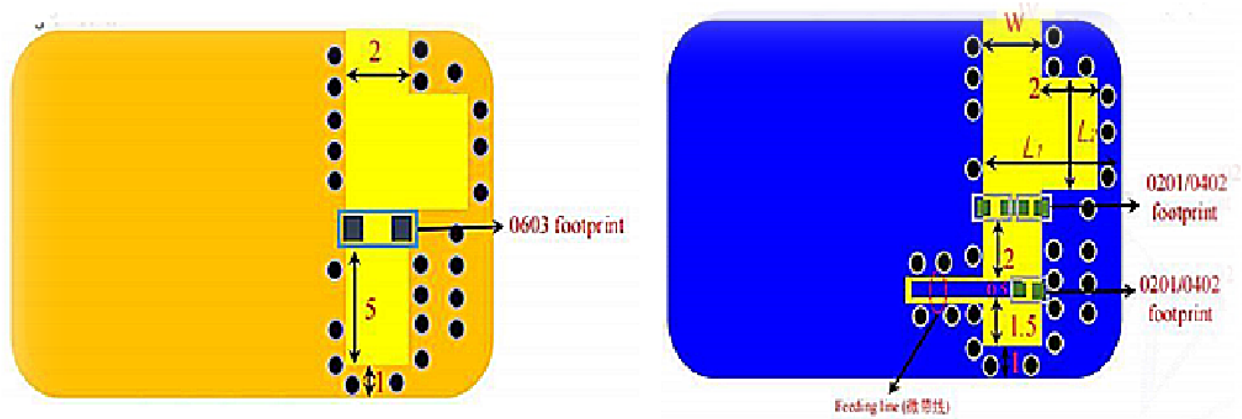
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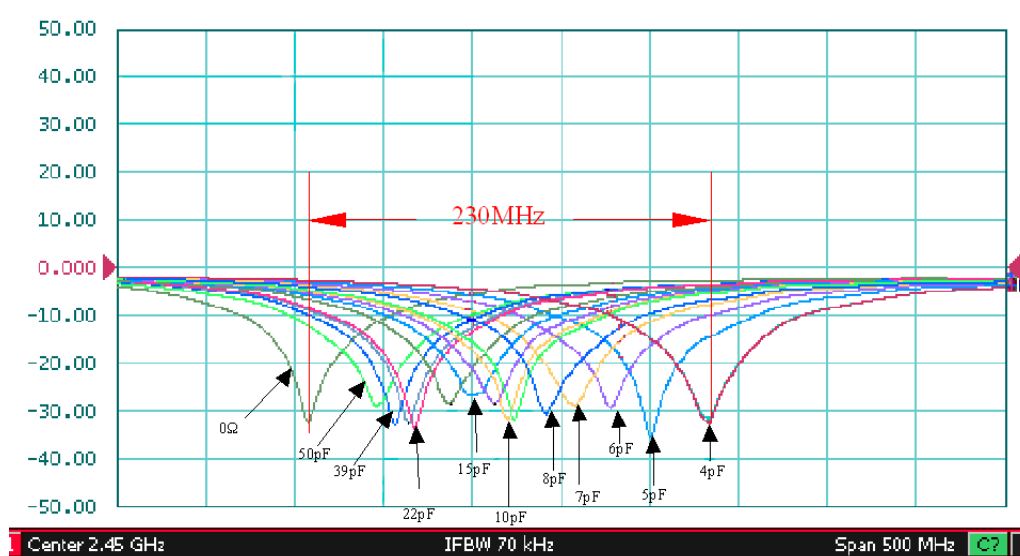
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Bottom View

Unit : mm

### c. Fine tuning element vs. Center frequency



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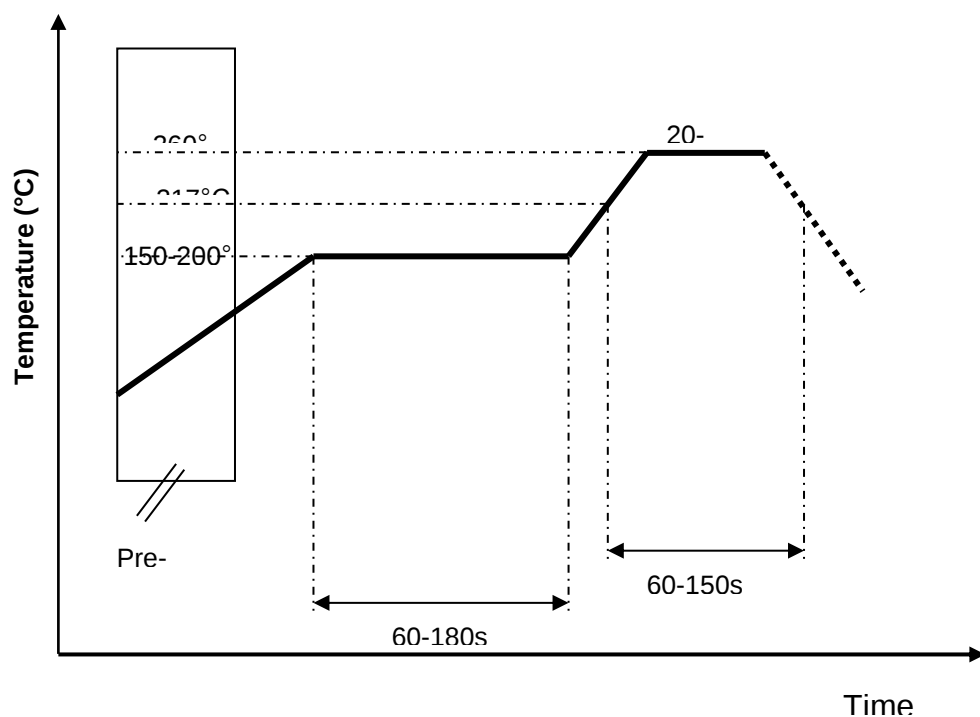
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## 9. Soldering Conditions

### a. Typical Soldering Profile for Lead-free Process



## Packing

- (1) Quantity/Reel: 4000 pcs/Reel
- (2) Plastic tape:



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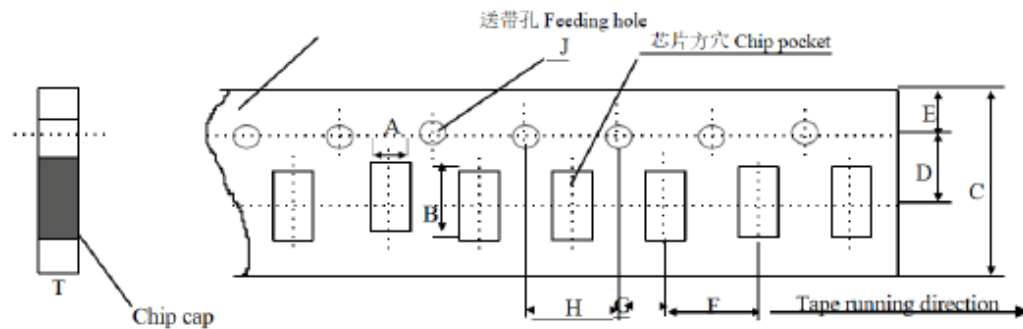
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## Dimensions of paper taping

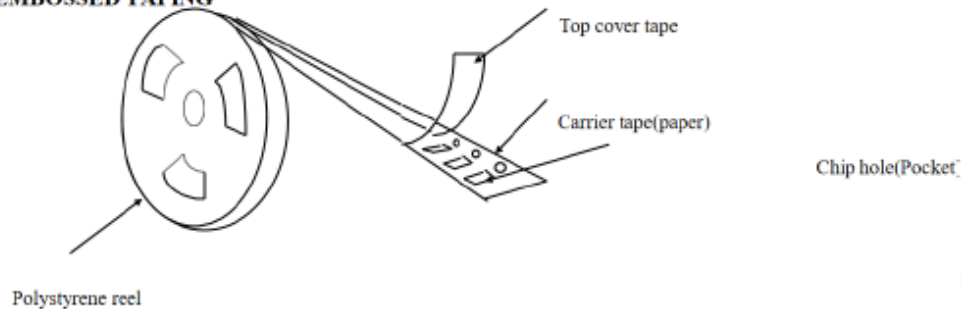


Unit: mm

| 代号 Code<br>纸带规格<br>papersize | A             | B             | C             | D*            | E             | F             | G*            | H             | J             | T           |
|------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------|
| 尺寸                           | 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>±0.10 | 1.10<br>Max |

Reel (4000 pcs/Reel)

### EMBOSED TAPING



## Storage Period

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



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