

# 产品规格承认书

## SPECIFICATIONS

产品名称:

DESCRIPTION: 双极天线 Bipolar antenna

产品型号:

OUR MODEL NO: **PBX3216MC02**

确认签字, 盖章后请返回承认书一份

PLEASE RETURN TO US ONE COPY OF "SPECIFICATION FOR APPROVAL"

WITH YOUR APPROVED SIGNATURES

|                                                                                                               |                 |                                                                                                                                                                                                       |           |
|---------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| UNLESS OTHER SPECIFIED TOLERANCES ON:<br>X=±      X.X=±      X.XX=±<br>A N G L E S = ±      H O L E D I A = ± |                 |  深圳市朋伴兴业科技有限公司<br>PengBanXingYe ShenZhen Technology Co. , Ltd                                                      |           |
| SCALE: N/A                                                                                                    | UNIT: mm        | THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF PBXY TECHNOLOGY Limited AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION |           |
| DRAWN BY : Sera                                                                                               | CHECKED BY: XD  |                                                                                                                                                                                                       |           |
| DESIGNED BY: Sera                                                                                             | APPROVED BY: XD |                                                                                                                                                                                                       |           |
| TITLE: CHIP2450-3216 Specification                                                                            |                 | DOCUMENT NO.                                                                                                                                                                                          | SPEC REV. |
|                                                                                                               |                 | 3216                                                                                                                                                                                                  | P1        |

**PBX3216MC02 Specification**

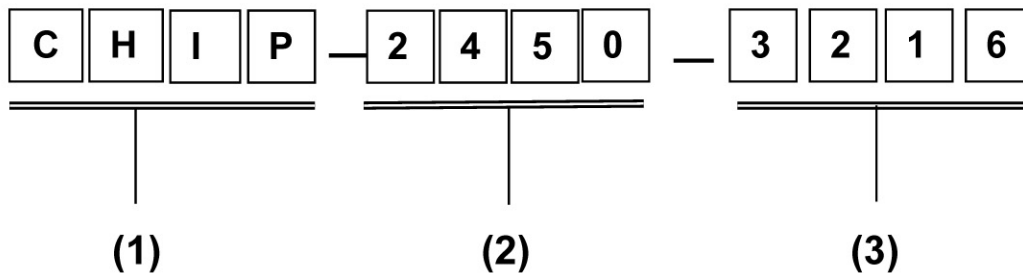
Operating Temp. : -40℃~+85℃

**1. FEATURES:**

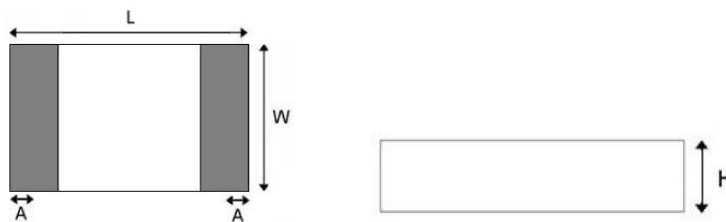
- Light weight, compact
- Wide bandwidth, low cost
- Built-in antenna with high gain

**2. APPLICATIONS:**

- Bluetooth, Wireless LAN, Mobile TV
- Home RF System, etc

**3. PRODUCT IDENTIFICATION**

- (1) Product type: Multilayer chip Antenna  
 (2) Center Frequency: 2450MHz  
 (3) External Dimensions (L×W) (mm): 3.2\*1.6

**4. SHAPE AND DIMENSIONS:**

| L       | W       | H        | A       |
|---------|---------|----------|---------|
| 3.2±0.2 | 1.6±0.2 | 0.52±0.1 | 0.4±0.1 |

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X=±

X.X=±

X.XX=

ANGLES = ±

HOLE DIA = ±

SCALE: N/A

UNIT: mm

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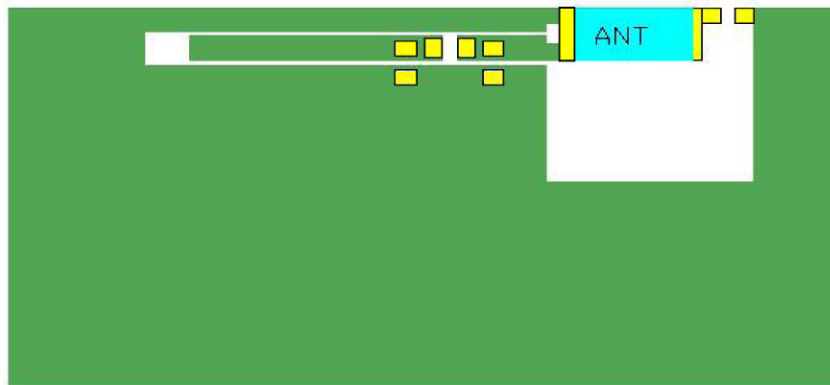
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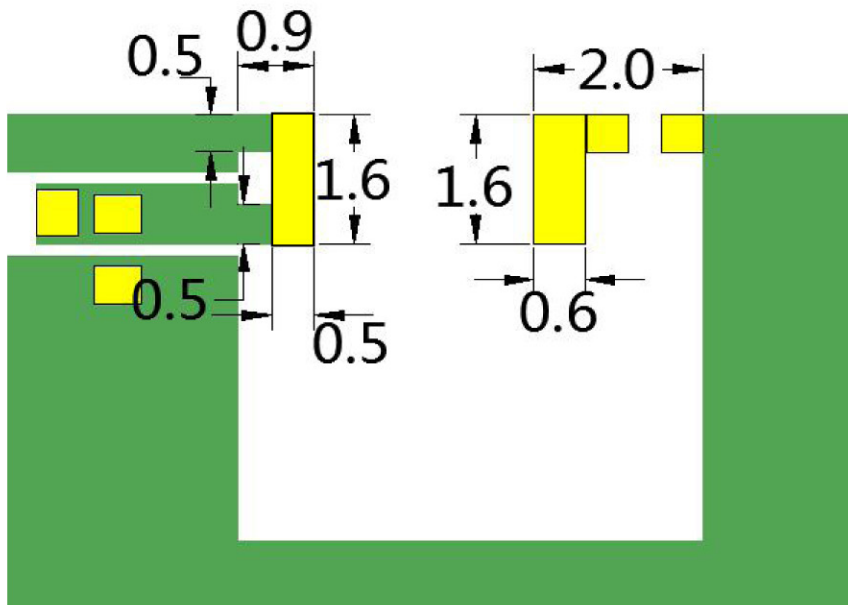
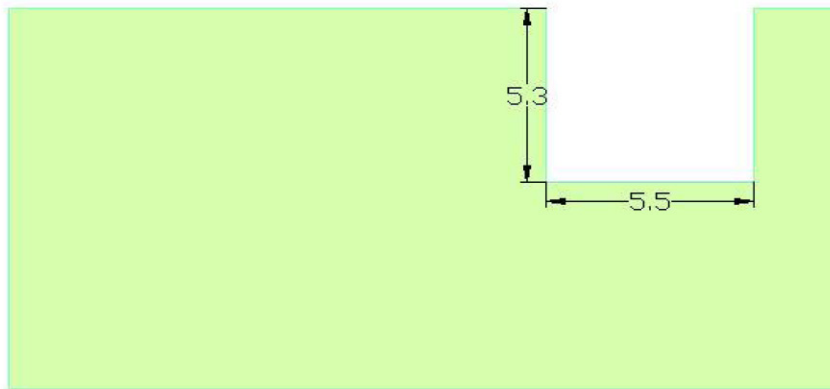
P1

测试板参考尺寸 Size reference :

单位unit: mm



- 天线 Antenna
- PAD
- 底层铺铜 Bottom copper coating
- 顶层铺铜 Top copper coating



UNLESS OTHER SPECIFIED TOLERANCES ON:

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**ANGLES** =  $\pm$       **HOLEDIA** =  $\pm$

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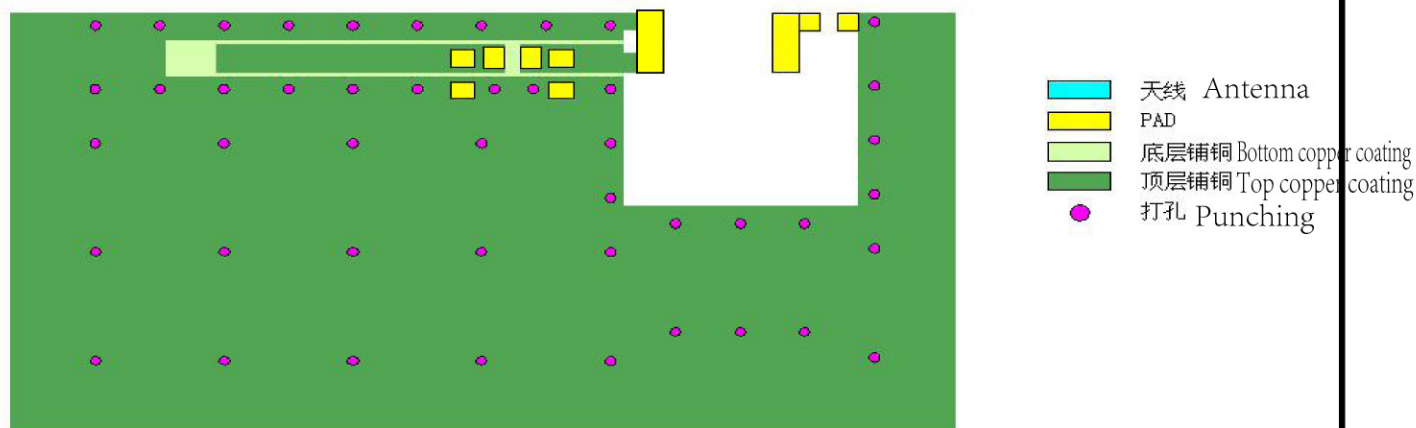
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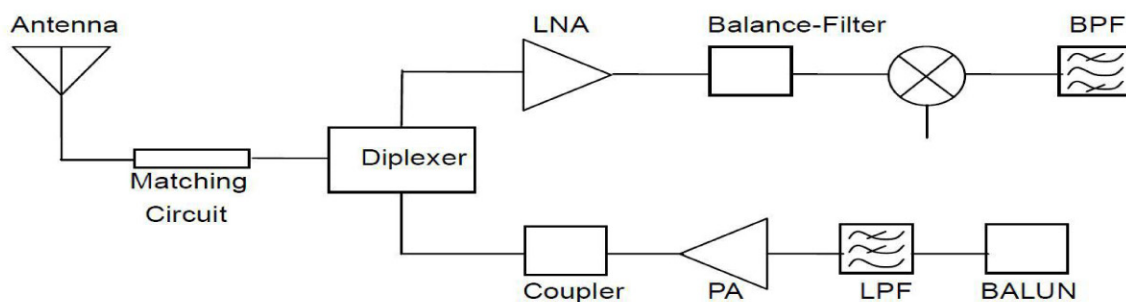
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P1

打孔参考示意图 Punching diagram



## APPLICATION GUIDE



## 5. SPECIFICATIONS:

| 测试项 Test item          | 规格 Specification        |
|------------------------|-------------------------|
| 带宽 Bandwidth           | 2400~2483MHz            |
| 极化方式 Polarization mode | 线极化 Linear polarization |
| *最大增益 Maximum gain     | 2.67dBi                 |
| *效率 Efficiency         | 72.30%                  |
| 输入阻抗 Input impedance   | 50 $\Omega$             |

\* Test condition: Test board size 90\*40 mm

Matching circuit: Pi matching circuit will be required

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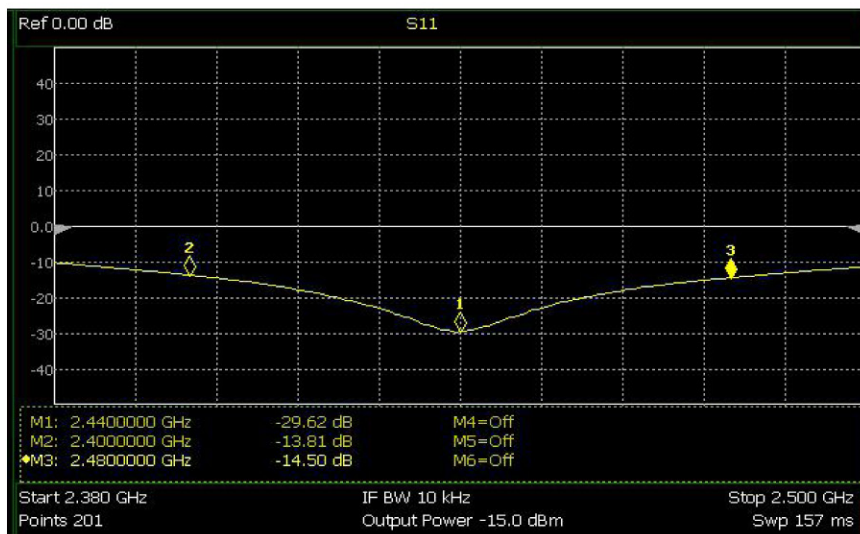
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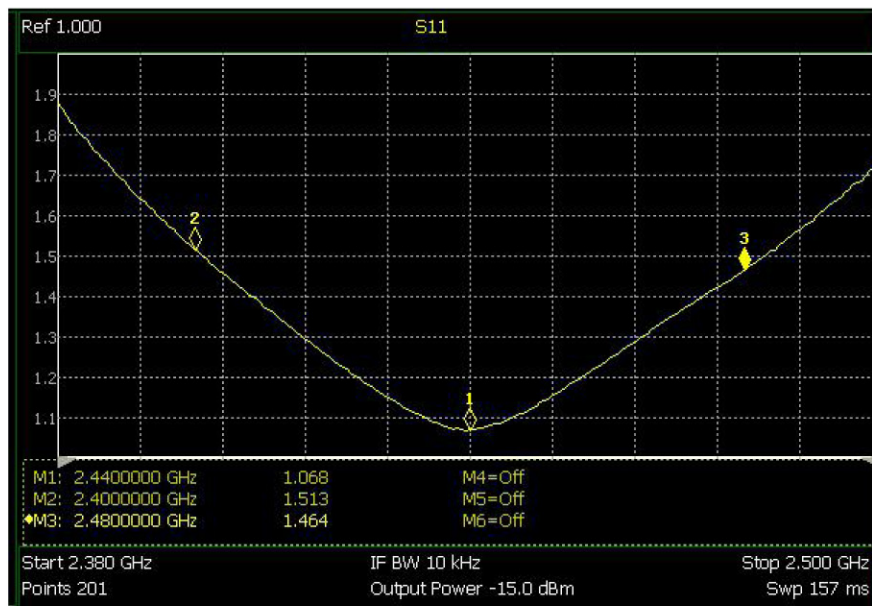
P1

## 6. Electrical Characteristics :

回波损耗 Return loss



驻波比 Standing-wave ratio



| Mark | Frequency | VSWR  |
|------|-----------|-------|
| 1    | 2400 MHz  | 1.513 |
| 2    | 2440 MHz  | 1.068 |
| 3    | 2480 MHz  | 1.464 |

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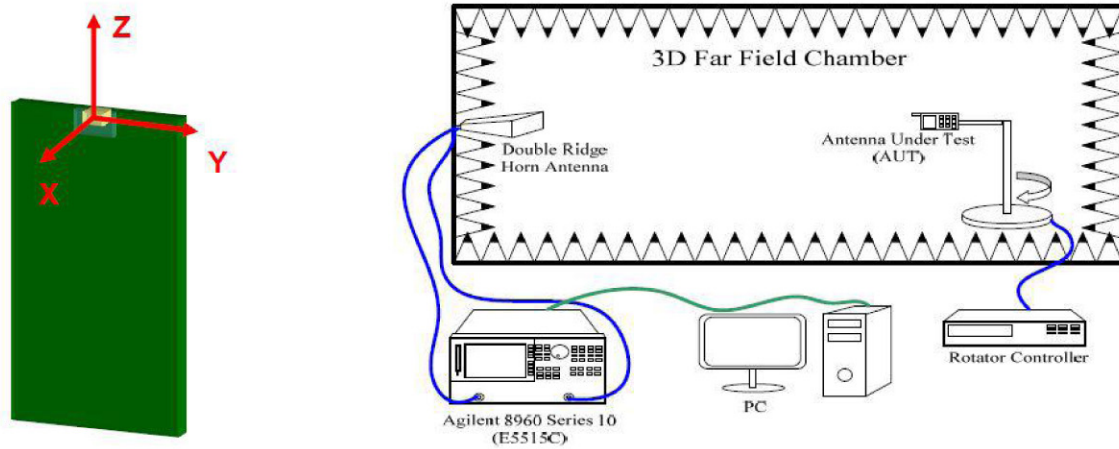
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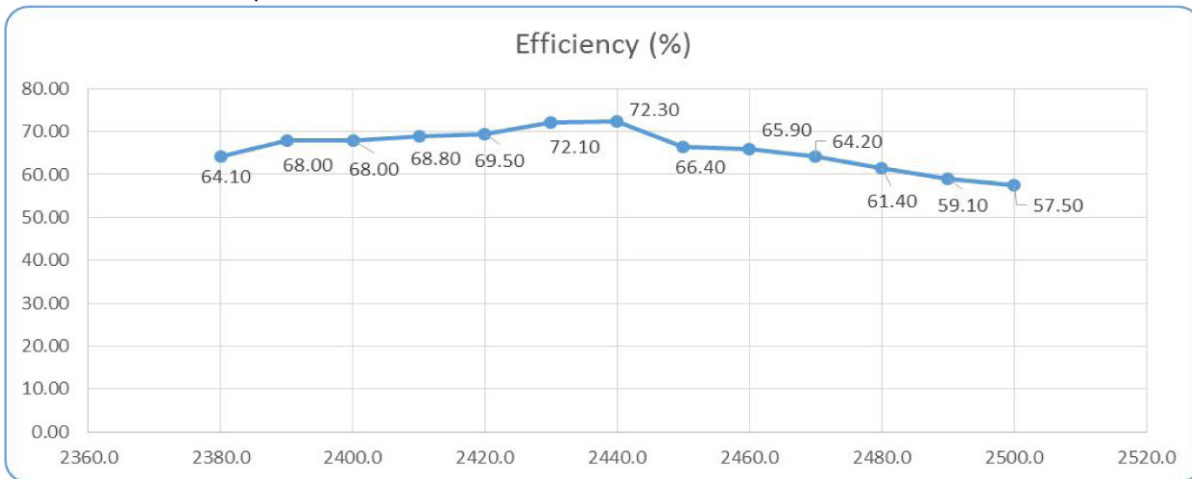
P1

## Radiation Pattern

The Gain pattern is measured in FAR-field chamber. DUT is placed on the table of rotator,a standard horn antenna and Vector Network Analyzer is used to collect data.



◎ 效率 Efficiency



最大增益 Maximum gain



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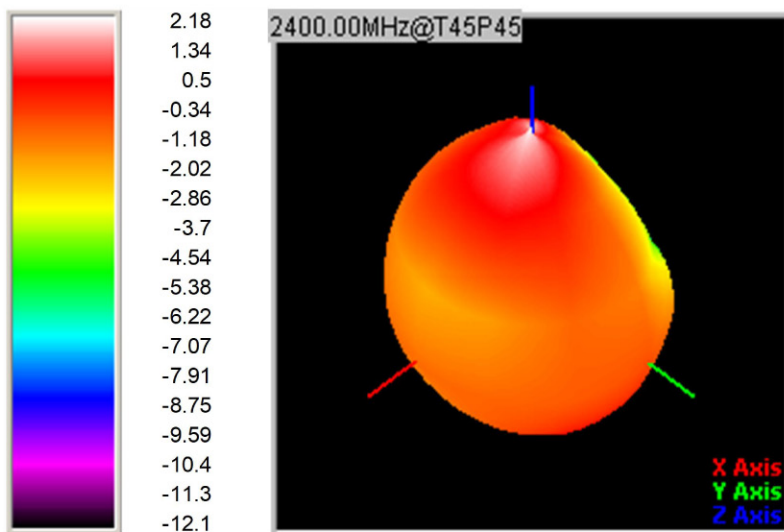
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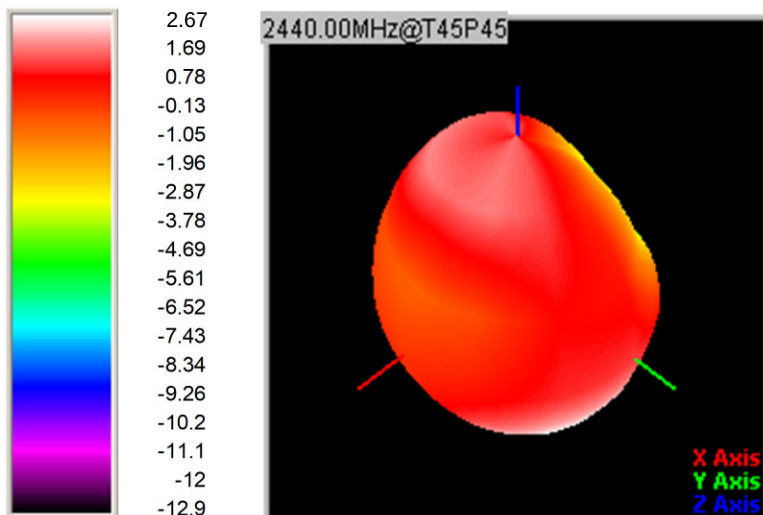
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P1

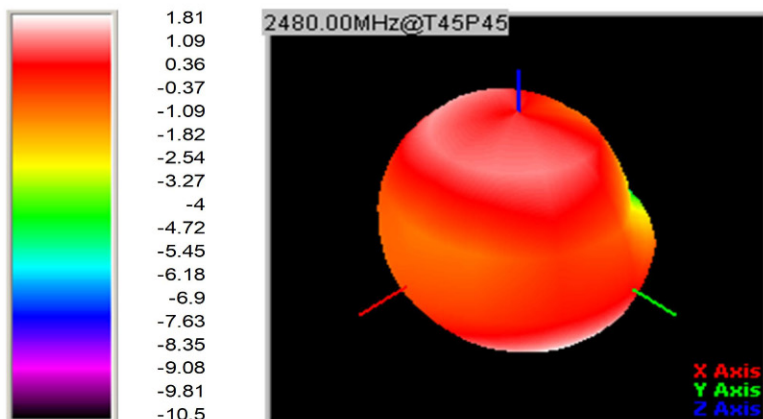
## ◎ 3D Gain Pattern (2400 MHz)



## ◎ 3D Gain Pattern (2440 MHz)



## ◎ 3D Gain Pattern (2480 MHz)



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## 7. Environmental Characteristics

### (1) Reliability Test

| Item                        | Condition                                                                                                                                                                                                                                                                              | Specification                                                  |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Thermal shock               | 1. $30\pm 3$ minutes at $-40^{\circ}\text{C}\pm 5^{\circ}\text{C}$ ,<br>2. Convert to $+105^{\circ}\text{C}$ (5 minutes)<br>3. $30\pm 3$ minutes at $+105^{\circ}\text{C}\pm 5^{\circ}\text{C}$ ,<br>4. Convert to $-40^{\circ}\text{C}$ (5 minutes)<br>5. Total 100 continuous cycles | No apparent damage<br>Fulfill the electrical spec. after test. |
| Humidity resistance         | 1. Humidity: 85% R.H.<br>2. Temperature: $85\pm 5^{\circ}\text{C}$<br>3. Time: 1000 hours.                                                                                                                                                                                             | No apparent damage<br>Fulfill the electrical spec. after test. |
| High temperature resistance | 1. Temperature: $150^{\circ}\text{C}\pm 5^{\circ}\text{C}$<br>2. Time: 1000 hours.                                                                                                                                                                                                     | No apparent damage<br>Fulfill the electrical spec. after test. |
| Low temperature resistance  | 1. Temperature: $-40^{\circ}\text{C}\pm 5^{\circ}\text{C}$<br>2. Time: 1000 hours.                                                                                                                                                                                                     | No apparent damage<br>Fulfill the electrical spec. after test. |
| Soldering heat resistance   | 1. Solder bath temperature : $260\pm 5^{\circ}\text{C}$<br>2. Bathing time: $10\pm 1$ seconds                                                                                                                                                                                          | No apparent damage                                             |
| Solderability               | The dipped surface of the terminal shall be at least 95% covered with solder after dipped in solder bath of $245\pm 5^{\circ}\text{C}$ for $3\pm 1$ seconds.                                                                                                                           | No apparent damage                                             |

### (2) Storage Condition

#### (a) At warehouse:

The temperature should be within  $0\sim 30^{\circ}\text{C}$  and humidity should be less than 60% RH.

The product should be used within 1 year from the time of delivery.

#### (b) On board:

The temperature should be within  $-40\sim 85^{\circ}\text{C}$  and humidity should be less than 85% RH.

### (3) Operating Temperature Range

Operating temperature range :  $-40^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$ .

UNLESS OTHER SPECIFIED TOLERANCES ON:

$X=\pm$        $X.X=\pm$        $X.XX=$

ANGLES  $=\pm$       HOLEDIA  $=\pm$

SCALE: N/A

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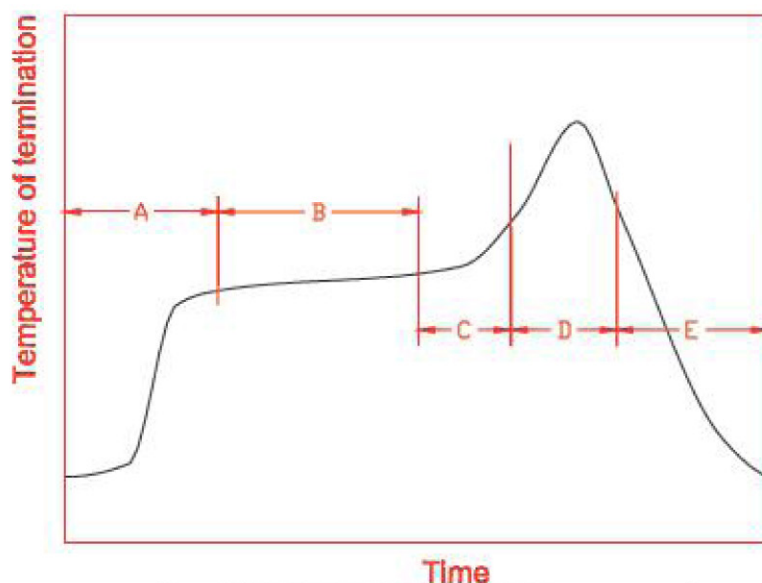
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## 8. Recommended Reflow Soldering



|   |                                    |                                      |               |
|---|------------------------------------|--------------------------------------|---------------|
| A | 1 <sup>st</sup> rising temperature | The normal to Preheating temperature | 30s to 60s    |
| B | Preheating                         | 140°C to 160°C                       | 60s to 120s   |
| C | 2 <sup>nd</sup> rising temperature | Preheating to 200°C                  | 20s to 40s    |
| D | Main heating                       | if 220°C                             | 50s~60s       |
|   |                                    | if 230°C                             | 40s~50s       |
|   |                                    | if 240°C                             | 30s~40s       |
|   |                                    | if 250°C                             | 20s~40s       |
|   |                                    | if 260°C                             | 20s~40s       |
| E | Regular cooling                    | 200°C to 100°C                       | 1°C/s ~ 4°C/s |

\*reference: J-STD-020C

### (1) Soldering Gun Procedure

Note the follows, in case of using solder gun for replacement.

- The tip temperature must be less than 350° C for the period within 3 seconds by using soldering gun under 30 W.
- The soldering gun tip shall not touch this product directly.

### (2) Soldering Volume

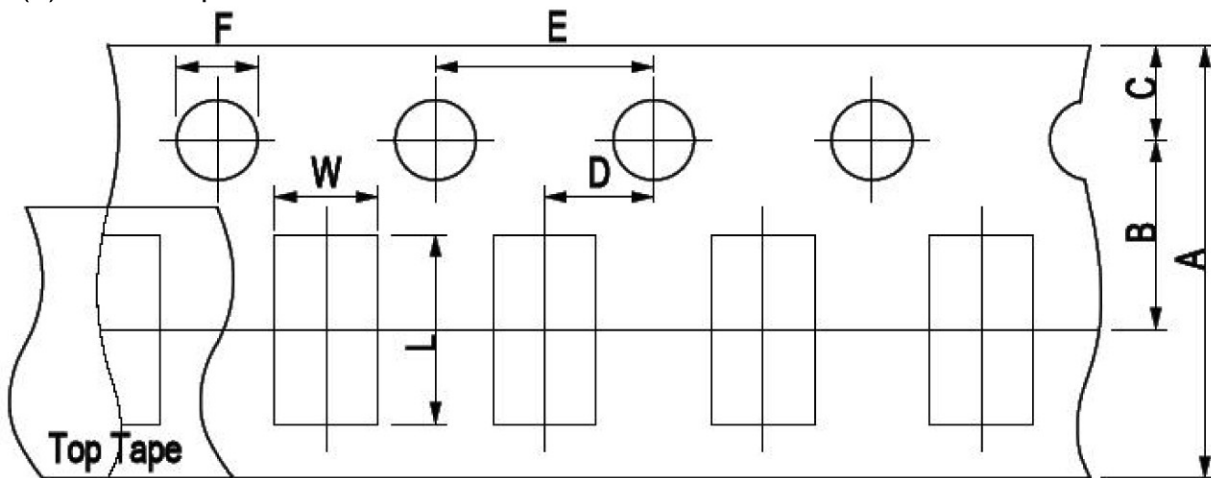
Note that excess of soldering volume will easily get crack the body of this product.

|                                                                                                |                 |                                                                                                                                                                                                       |      |                 |
|------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------------|
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| DRAWN BY : Sera                                                                                | CHECKED BY: XD  |                                                                                                                                                                                                       |      |                 |
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| TITLE: CHIP2450-3216 Specification                                                             |                 | DOCUMENT NO.                                                                                                                                                                                          | 3216 | SPEC REV.<br>P1 |

**9. Taping Package and Label Marking:** (unit: mm)

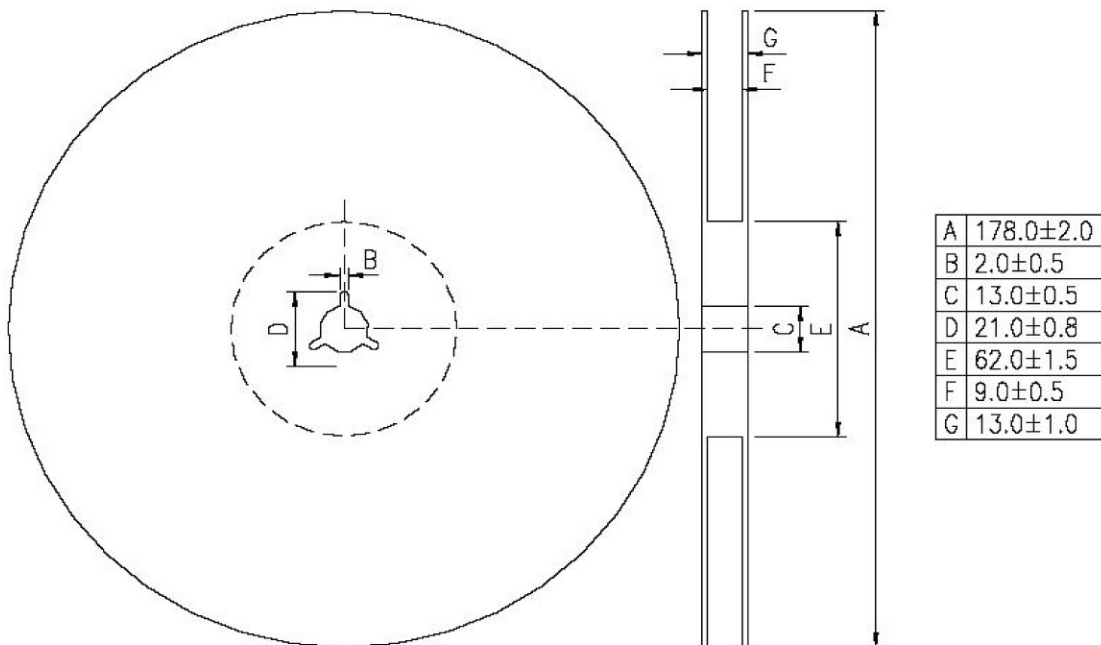
(1) Quantity/Reel: 5000pcs/Reel

(2) Carrier tape dimensions



| Type    | A              | B               | C              | D               | E              | F              | L              | W              |
|---------|----------------|-----------------|----------------|-----------------|----------------|----------------|----------------|----------------|
| 2450-21 | $8.00 \pm 0.3$ | $3.50 \pm 0.05$ | $1.75 \pm 0.1$ | $2.00 \pm 0.05$ | $4.00 \pm 0.1$ | $1.50 \pm 0.1$ | $2.30 \pm 0.1$ | $1.55 \pm 0.1$ |

(3) Taping reel dimensions



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