

# 产品规格承认书

## SPECIFICATIONS

客户:

CUSTOMER: \_\_\_\_\_

产品名称:

DESCRIPTION: \_\_\_\_\_ Ceramic antenna

客户型号:

CUSTOMER PART No: \_\_\_\_\_

产品型号:

OUR MODEL NO: \_\_\_\_\_ **PBX3216MA01**

日期:

DATE: \_\_\_\_\_ 2019/10/28

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

|    |  |    |    |    |     |
|----|--|----|----|----|-----|
| 核准 |  | 审核 | 刘飞 | 制作 | 刘小美 |
|----|--|----|----|----|-----|

|        |  |
|--------|--|
| 客户承认签印 |  |
| 日期     |  |

|                                                                                                     |                 |                                                                                                                                                                                                       |           |
|-----------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
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| DESIGNED BY: Sera                                                                                   | APPROVED BY: XD |                                                                                                                                                                                                       |           |
| TITLE: CHIP2450-3216 Specification                                                                  |                 | DOCUMENT NO.                                                                                                                                                                                          | SPEC REV. |
|                                                                                                     |                 | 3216                                                                                                                                                                                                  | P1        |

**PBX3216MA01 Specification**

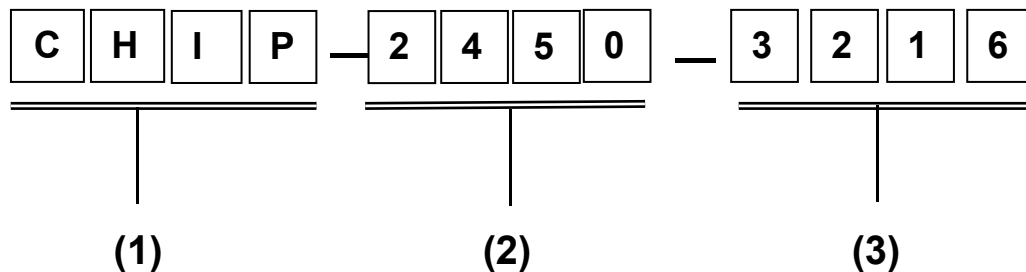
Operating Temp. : -40℃~+85℃

**1. FEATURES:**

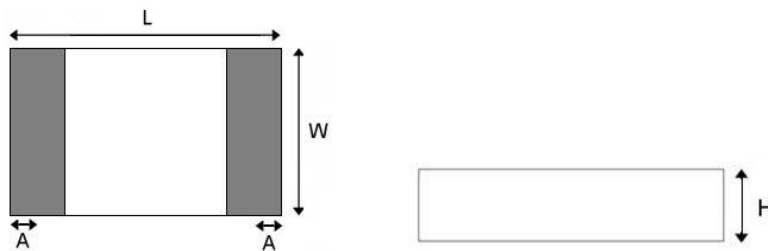
- Light weight, compact
- Wide bandwidth, low cost
- Built-in antenna with high gain

**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:**

UNIT: mm

| 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=

A N G L E S = ±      H O L E D I A = ±



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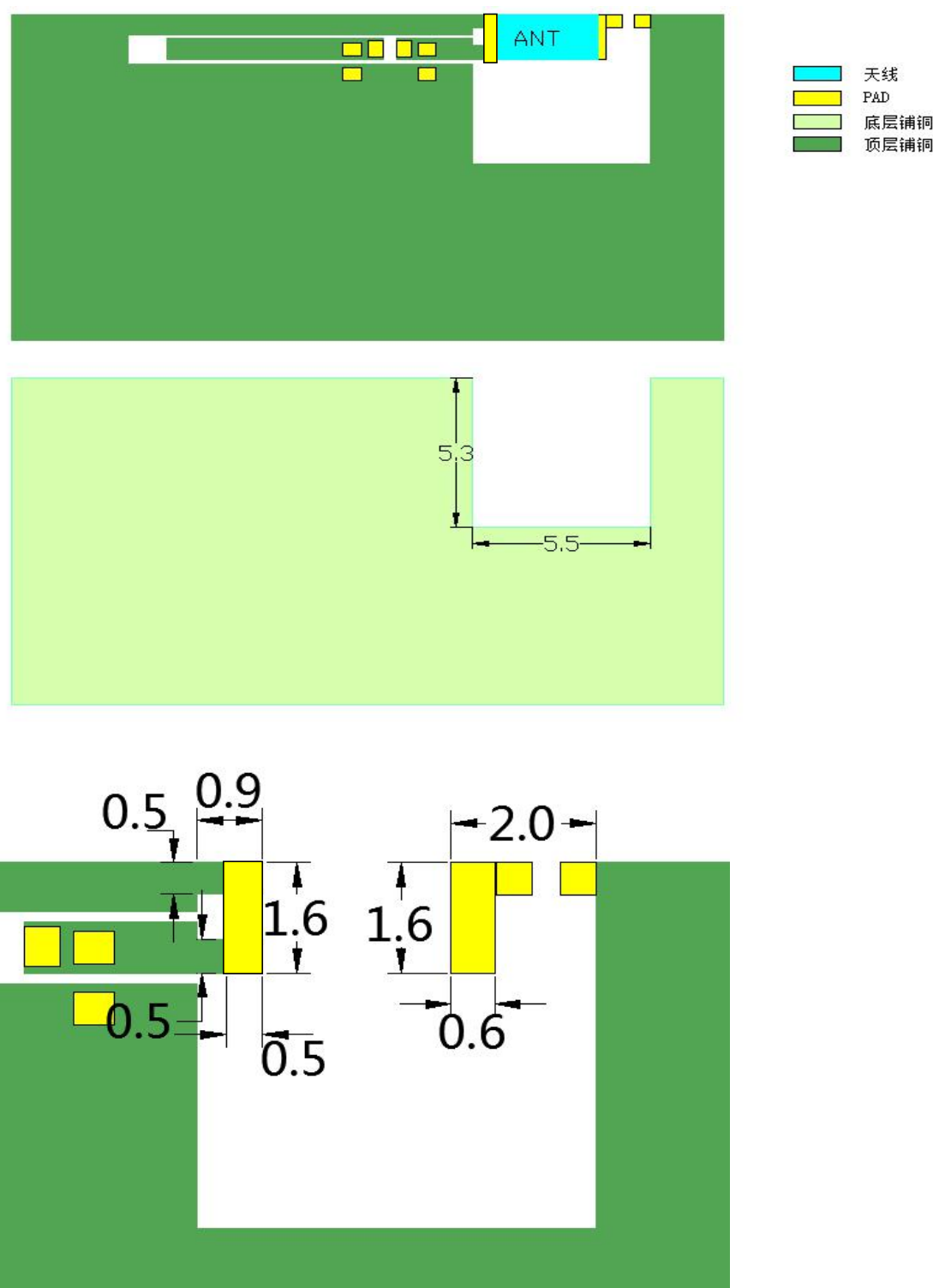
3216

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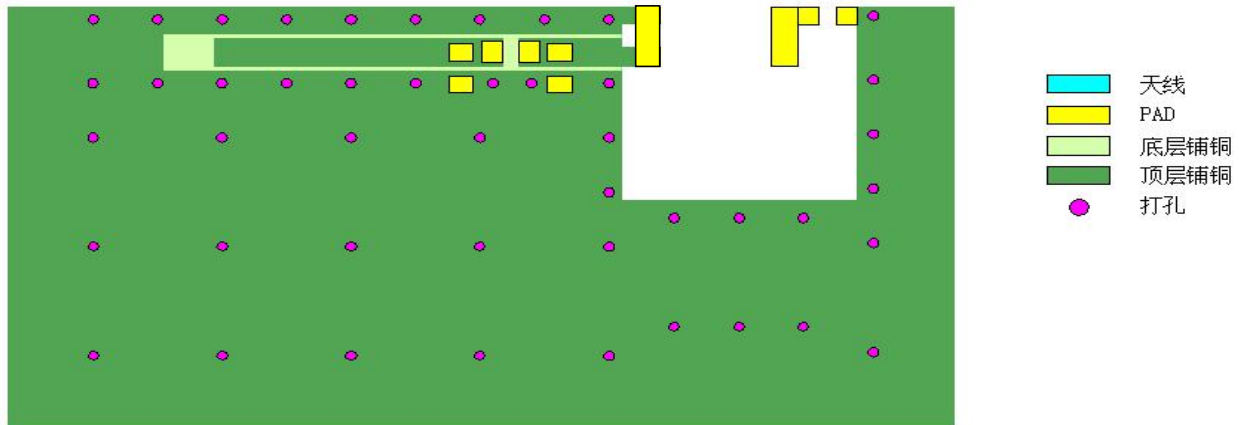
测试板参考尺寸:

单位: mm

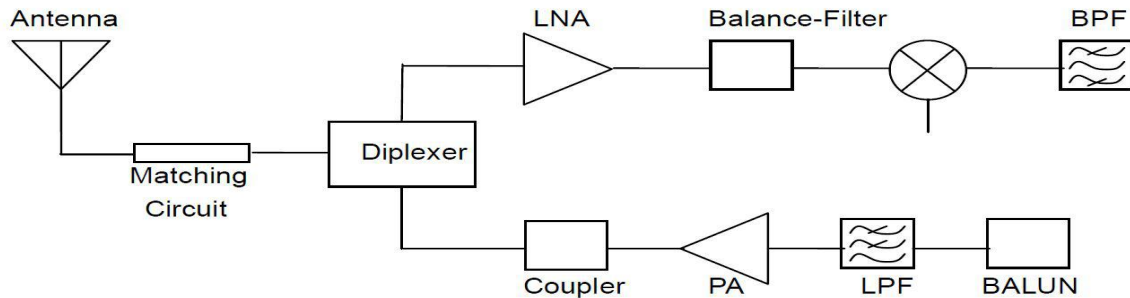


|                                                                                                    |                 |                                                                                                                                                                                                       |      |                 |
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打孔参考示意图



## APPLICATION GUIDE



## 5. SPECIFICATIONS:

| test item         | specification       |
|-------------------|---------------------|
| bandwidth         | 2400~2483MHz        |
| polarization mode | linear polarization |
| maximum gain      | 2.67dBi             |
| workpiece ratio   | 72.30%              |
| input impedance   | 50Ω                 |

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

Matching circuit: Pi matching circuit will be required

UNLESS OTHER SPECIFIED TOLERANCES ON:

X=± X.X=± X.XX=

ANGLES = ±

HOLEDIA = ±



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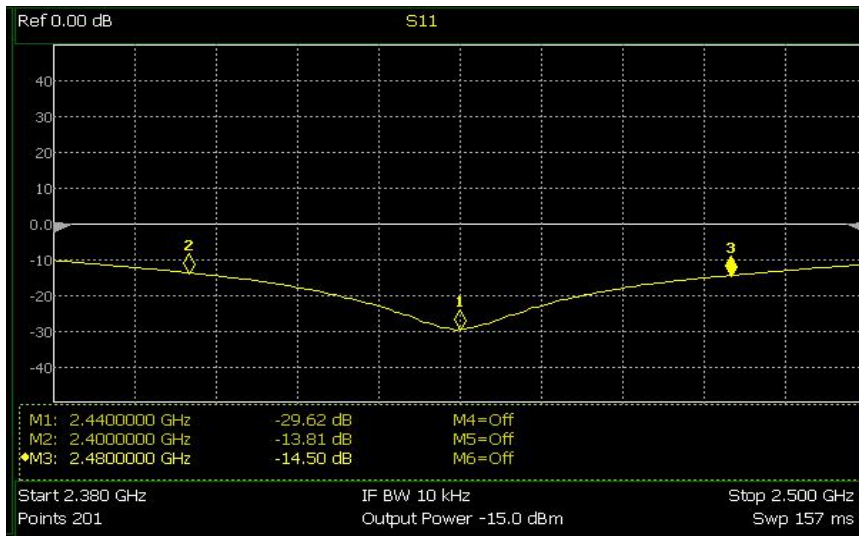
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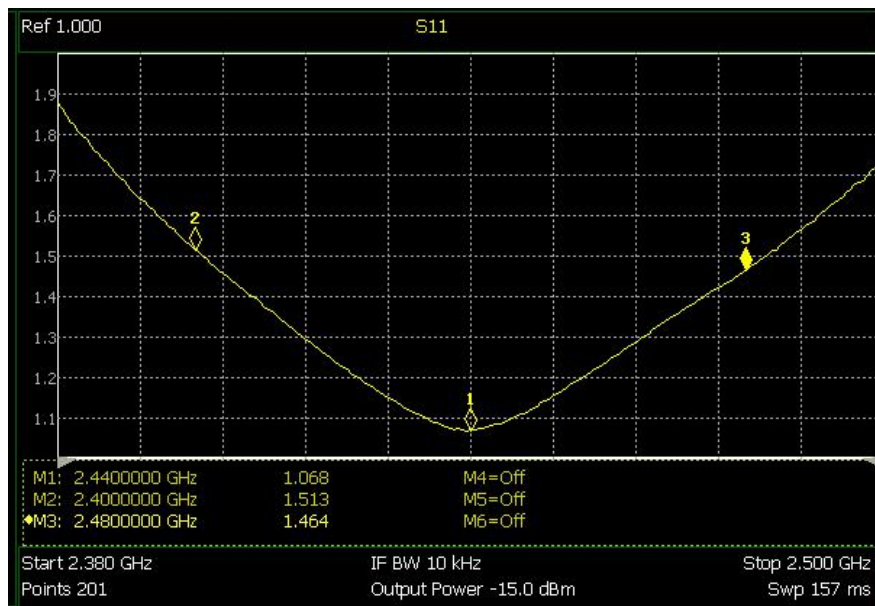
P1

## 6. Electrical Characteristics :

### 回波损耗



### 驻波比



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

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ANGLES = ± HOLEDIA = ±

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DOCUMENT NO.

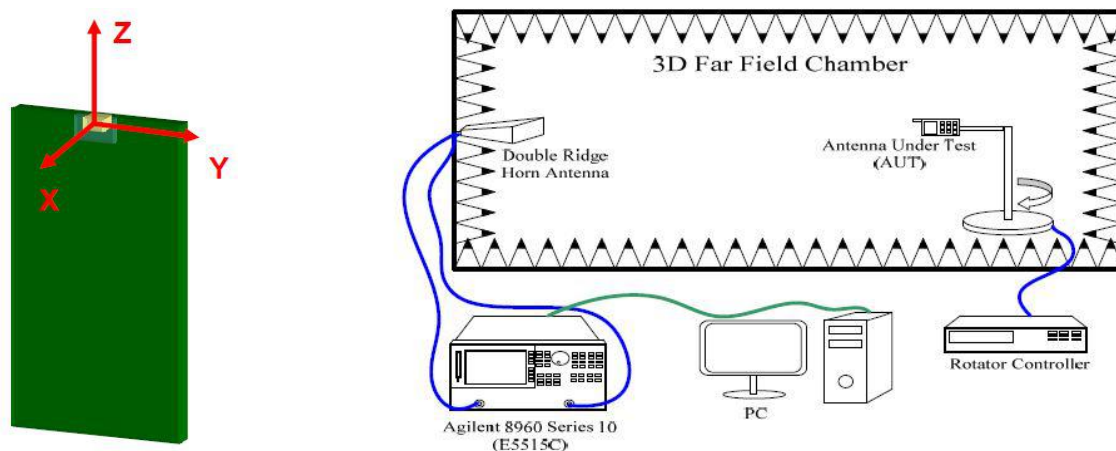
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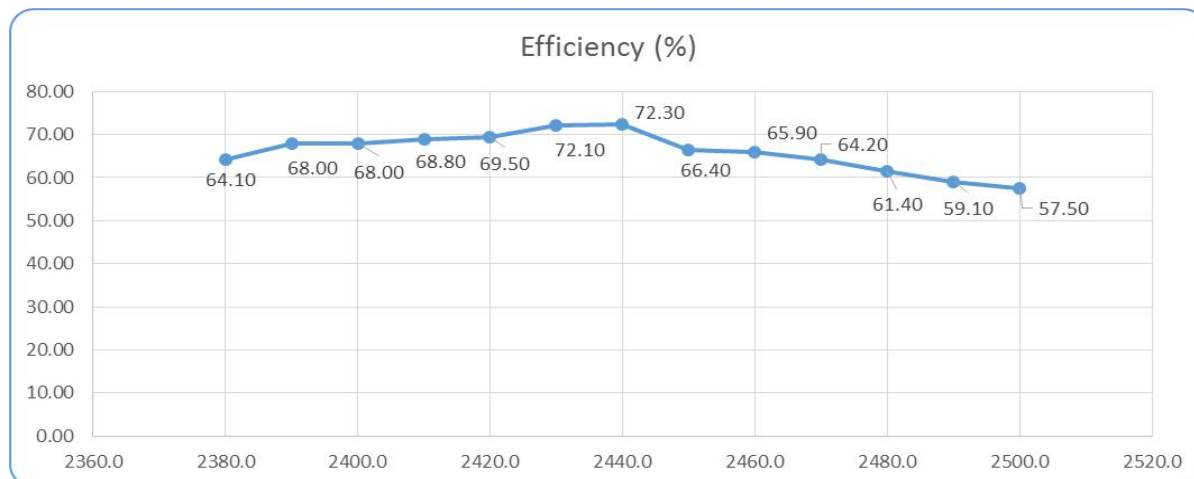
P1

## Radiation Pattern

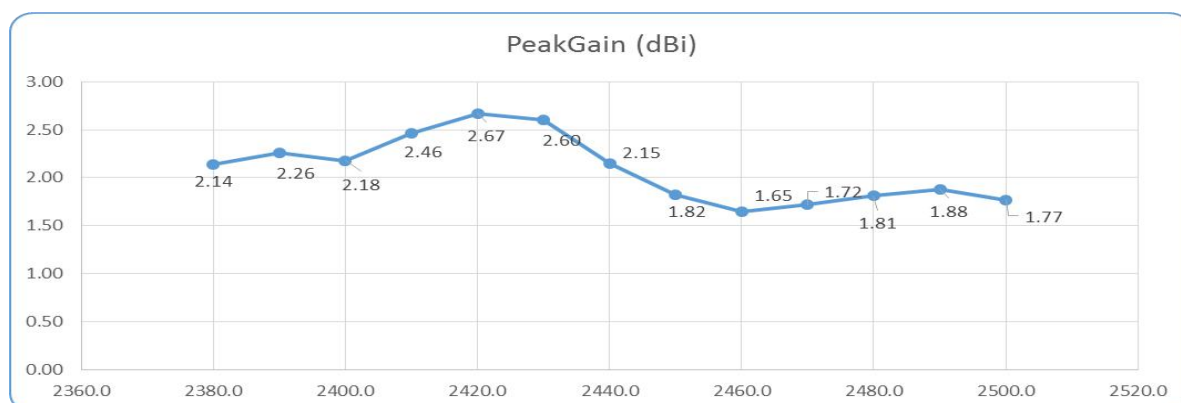
The Gain pattern is measured in FAR-field chamber. DUT is placed on the table of rotator, a standard horn antenna and Vector Network Analyzer is used to collect data.



## ◎ 效率



## 最大增益



UNLESS OTHER SPECIFIED TOLERANCES ON:

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ANGLES = ± HOLEDIA = ±

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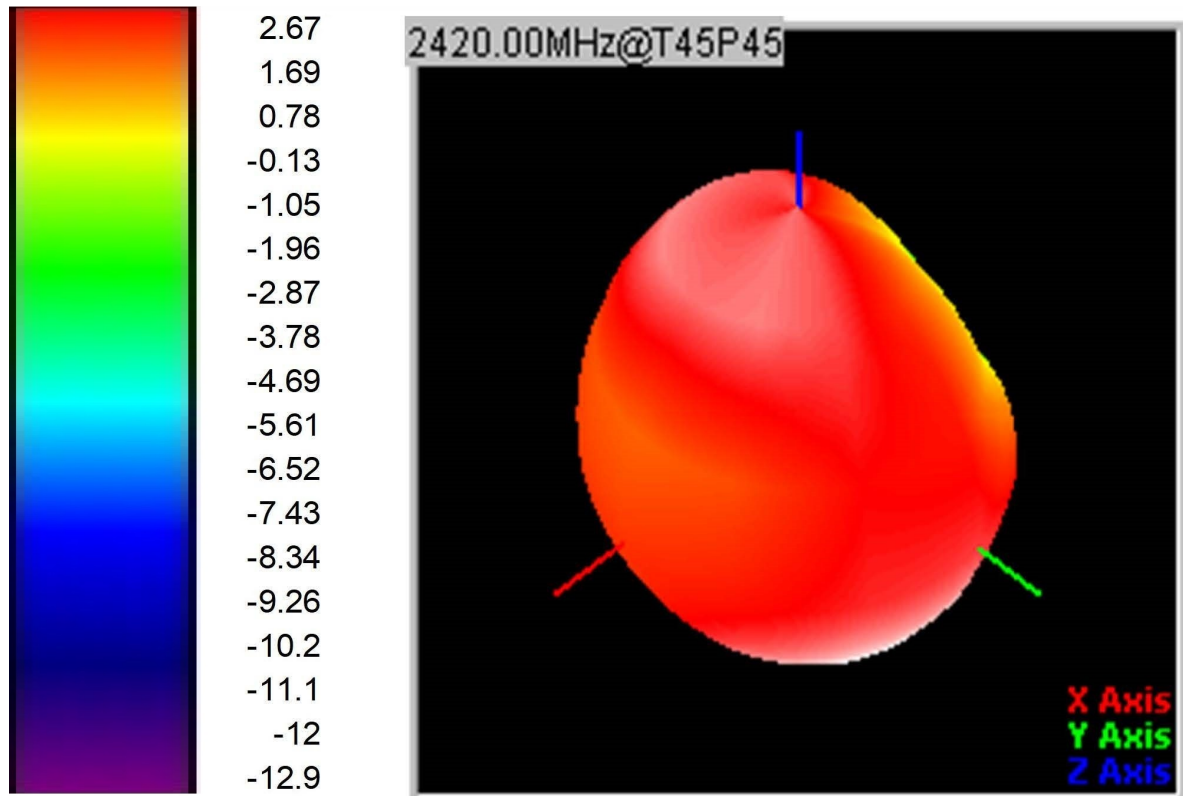
DOCUMENT NO.

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## © 3D Gain Pattern (2420 MHz)



| Frequency(MHz) | Gain(dBi) |
|----------------|-----------|
| 2420           | 2.67      |

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 ANGLES = ±      HOLEDIA = ±

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## 7. Environmental Characteristics

### (1) Reliability Test

| Item                        | Condition                                                                                                                                                                                                                                                                          | Specification                                                  |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Thermal shock               | 1. $30\pm3$ minutes at $-40^{\circ}\text{C}\pm5^{\circ}\text{C}$ ,<br>2. Convert to $+105^{\circ}\text{C}$ (5 minutes)<br>3. $30\pm3$ minutes at $+105^{\circ}\text{C}\pm5^{\circ}\text{C}$ ,<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: $85\pm5^{\circ}\text{C}$<br>3. Time: 1000 hours.                                                                                                                                                                                          | No apparent damage<br>Fulfill the electrical spec. after test. |
| High temperature resistance | 1. Temperature: $150^{\circ}\text{C}\pm5^{\circ}\text{C}$<br>2. Time: 1000 hours.                                                                                                                                                                                                  | No apparent damage<br>Fulfill the electrical spec. after test. |
| Low temperature resistance  | 1. Temperature: $-40^{\circ}\text{C}\pm5^{\circ}\text{C}$<br>2. Time: 1000 hours.                                                                                                                                                                                                  | No apparent damage<br>Fulfill the electrical spec. after test. |
| Soldering heat resistance   | 1. Solder bath temperature : $260\pm5^{\circ}\text{C}$<br>2. Bathing time: $10\pm1$ 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 $245\pm5^{\circ}\text{C}$ for $3\pm1$ seconds.                                                                                                                         | No apparent damage                                             |

### (2) Storage Condition

#### (a) At warehouse:

The temperature should be within  $0\sim30^{\circ}\text{C}$  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  $-40\sim85^{\circ}\text{C}$  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:

$X=\pm$        $X.X=\pm$        $X.XX=\pm$   
**ANGLES** =  $\pm$       **HOLE DIA** =  $\pm$



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UNIT: mm

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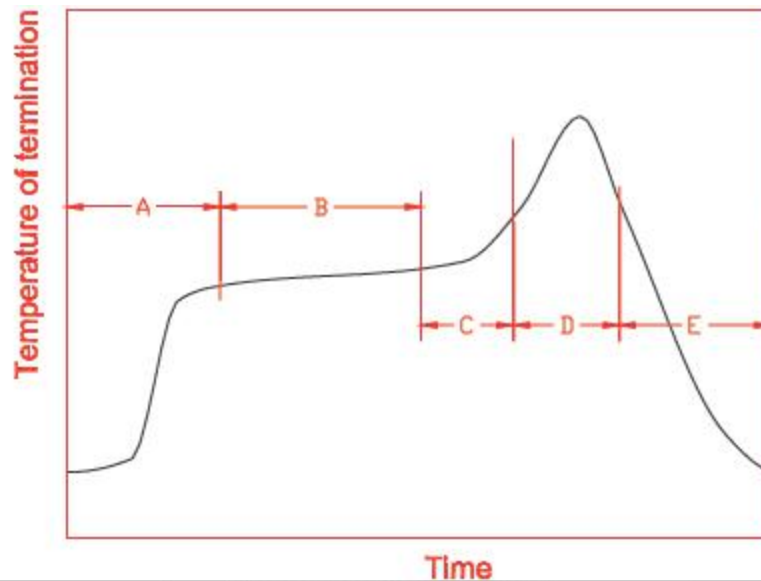
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## 8. Recommended Reflow Soldering



|   |                                    |                                      |               |
|---|------------------------------------|--------------------------------------|---------------|
| 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

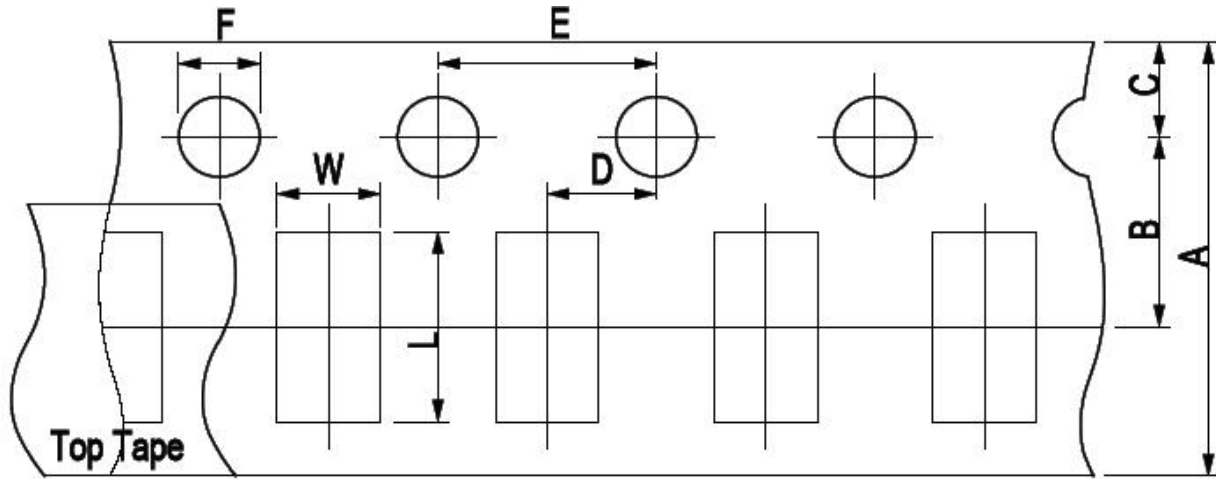
Note that excess of soldering volume will easily get crack the body of this product.

|                                                                                                    |                 |                                                                                                                                                                                                       |              |
|----------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
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|                                                                                                    |                 |                                                                                                                                                                                                       | SPEC REV. P1 |

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

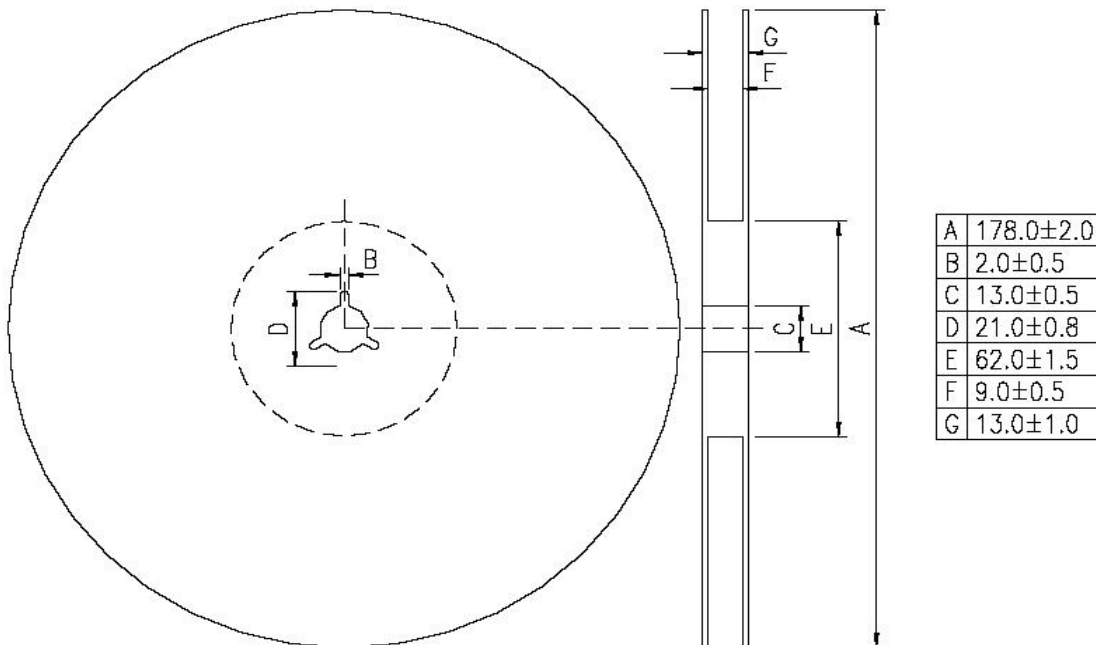
(1) Quantity/Reel: 5000pcs/Reel

(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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