

Address : Room 608, Building 4, 1970 Science and Technology Town, Minzhi Street, Longhua District, Shenzhen.

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: **PBX1608MC01**

日期:

DATE: _____

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

| | | | | | |
|----------|--------|-------|--------|--------|------------|
| Approved | LiuFei | Audit | LiuFei | Making | LiuXiaoMei |
|----------|--------|-------|--------|--------|------------|

| | |
|---------------------------------|--|
| Customer Acknowledges Signature | |
| Date | |

UNLESS OTHER SPECIFIED TOLERANCES ON:

X=± X.X=± X.XX=±
ANGLES = ± HOLEDIA = ±

SCALE: N/A

DRAWN BY: Sera

DESIGNED BY: Sera

TITLE: CHIP2450-1608 Specification



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DOCUMENT NO.

1608

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PBX1608MC01 Specification**1. Features:**

- Stable and reliable in performances
- Low profile, compact size
- RoHS compliance
- SMT processes compatible

2. APPLICATIONS:

- ISM 2 . 4 GHz applications
- ZigBee/BLE applications
- Bluetooth earphone systems
- Hand-held devices when WiFi/Bluetooth functions are needed, e.g., Smart phones
- IEEE802.11 b/g/n
- Wireless PCMCIA cards or USB dongles

3. Part Number Information

| | | | | |
|------------------|--------------------|-----------------|------------------|------------------|
| <u>AN</u> | <u>1608</u> | <u>S</u> | <u>24</u> | <u>LS</u> |
| A | B | C | D | E |

| | | |
|----------|------------------------------|---------------------|
| A | Patch ceramic antenna | Antenna |
| B | Size | 1.5X0.8mm |
| C | Type of antenna | S: Bipolar |
| D | Frequency | 2.4 ~ 2.5GHz |
| E | Product type | LS |

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4. Product dimensions:

1608 Bipolar antenna

| Figure | Symbol | Dimension (mm) |
|--------|------------------------|----------------|
| | L (Long) | 1.5 ± 0.10 |
| | W (Wide) | 0.8 ± 0.10 |
| | T (Thickness) | 0.50 ± 0.10 |
| | A (Width of electrode) | 0.2 ± 0.10 |

5. Electrical Specification:

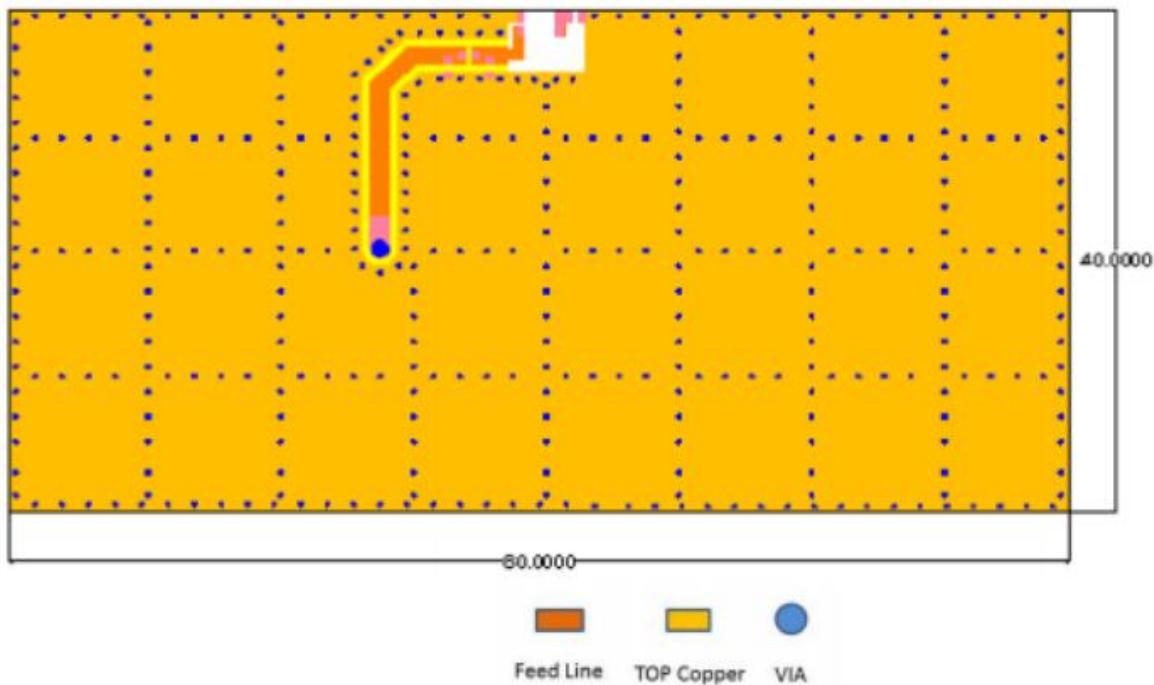
| Specification | | |
|-------------------------------|--------------------|------|
| Part Number | AN1608S24LS | |
| Central Frequency | 2450 | MHz |
| Bandwidth | 120 (Min.) | MHz |
| Return Loss | -6.5 (Max) | dB |
| Peak Gain | 2.73 | dBi |
| Impedance | 50 | Ohm |
| Operating Temperature | -40 ~ +85 | °C |
| Maximum Power | 4 | W |
| Resistance to Soldering Heats | 10 (@ 260°C) | sec. |
| Polarization | Linear | |
| Azimuth Beamwidth | Omni-directional | |
| Termination | Ni / Sn (Leadless) | |

Remark : Bandwidth & Peak Gain was measured under evaluation board of next page

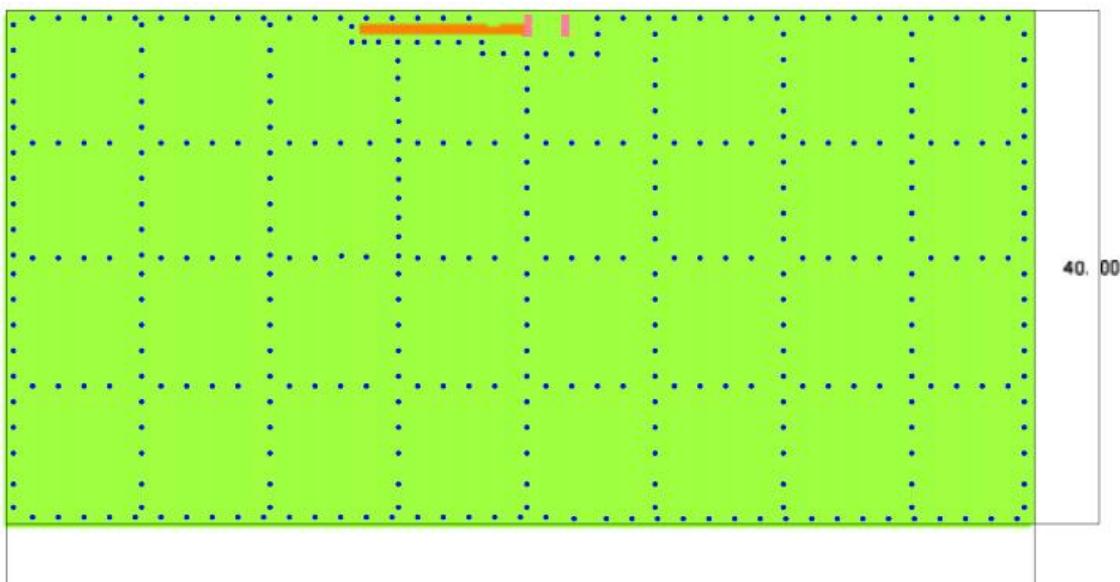
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|---|---|---|
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6. 1608 Bipolar antennas are recommended PCB



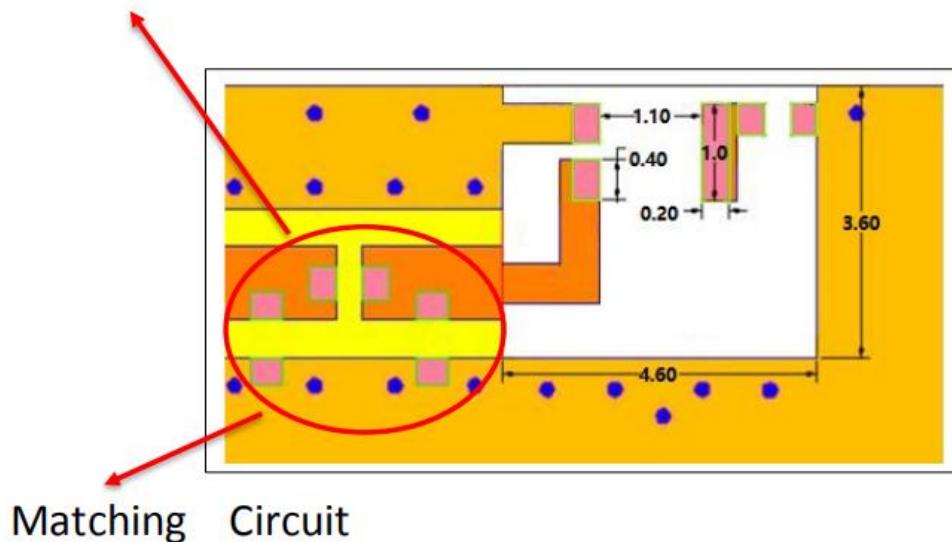
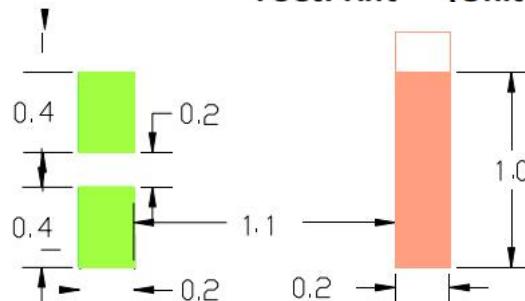
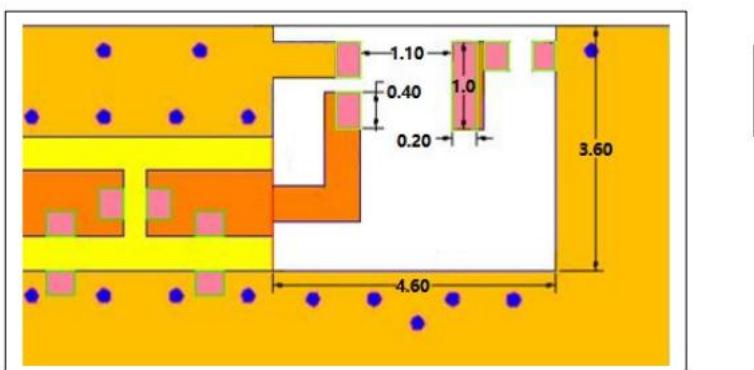
2nd Evaluation Board Dimension



Matching elements are recommended using murata \pm 1% inductance, capacitance.

| | | |
|---|-----------------|---|
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Clearance area (Size=4.6*3.6mm)**50 ohm transmission Line****Matching Circuit****FootPrint (Unit : mm)****2 Layout Dimensions in Clearance area (Size=8.0*3.0mm)**

UNLESS OTHER SPECIFIED TOLERANCES ON:

| | | |
|-----------------------|-------------------------|--------------|
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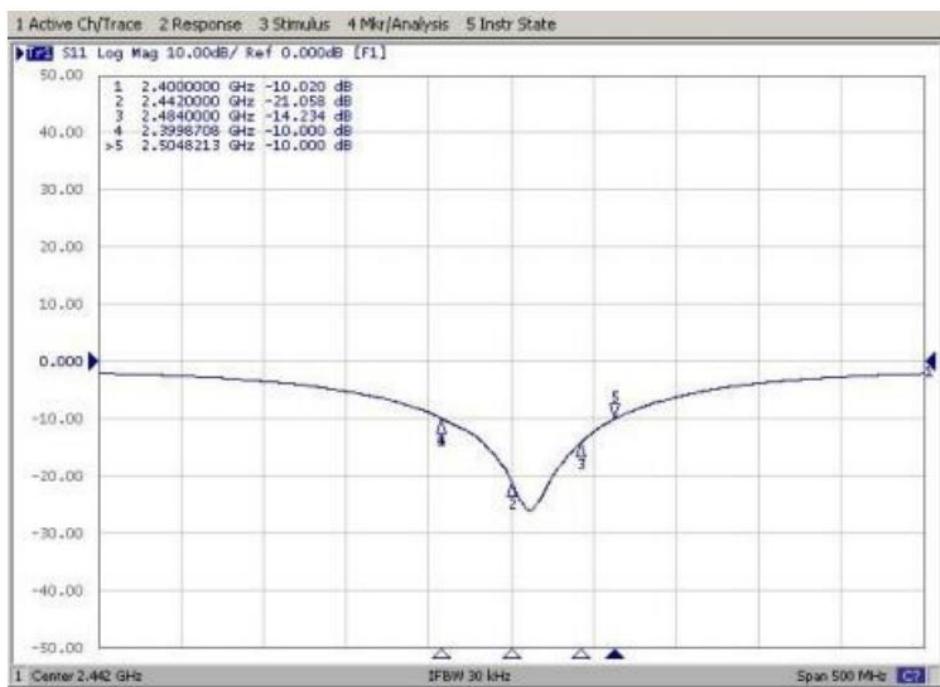
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7.1 Measurement Results

Return Loss



7.2 Radiation Pattern

| | Efficiency | Peak Gain | Directivity |
|---------|------------|-----------|-------------|
| 2400MHz | 51.56 % | 2.06 dBi | 4.94dBi |
| 2450MHz | 51.99 % | 2.73 dBi | 5.57 dBi |
| 2500MHz | 48.23 % | 2.48 dBi | 5.65 dBi |

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ANGLES = ± HOLEDIA = ±

SCALE: N/A

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UNIT: mm

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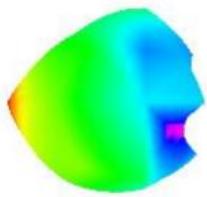
1608

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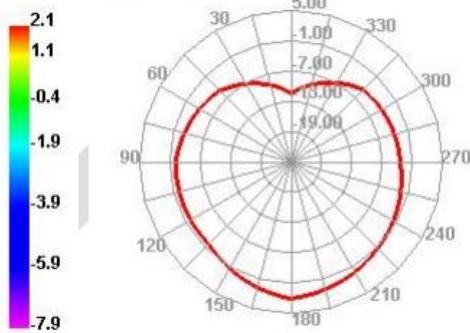
P1

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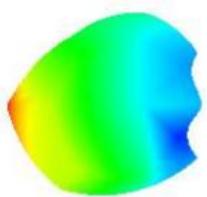
2400.000MHz



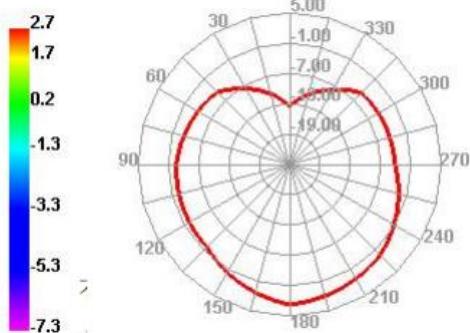
2400.000MHz H



2450.000MHz



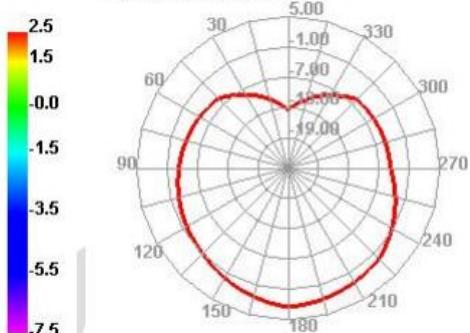
2450.000MHz H



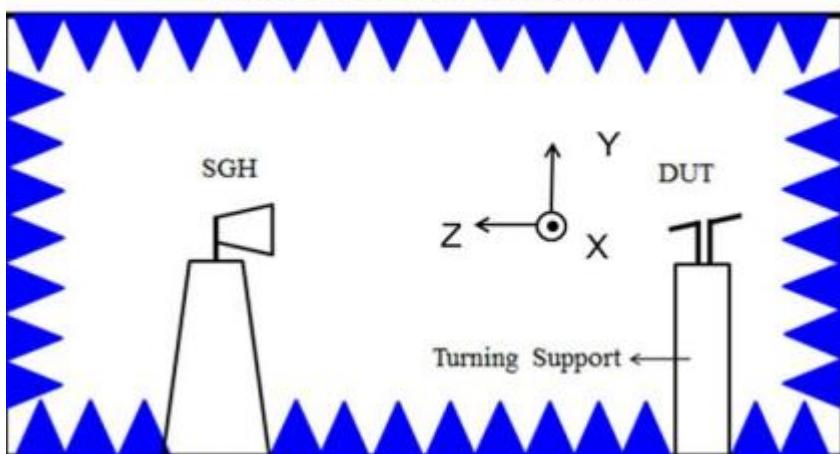
2500.000MHz



2500.000MHz H



Chamber Coordinate System



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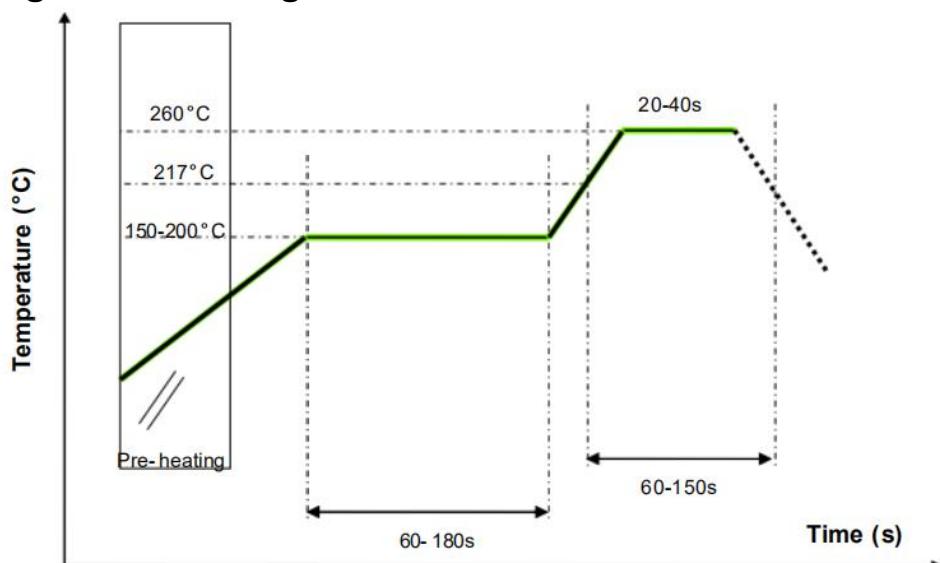
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8. Reliability and Test Conditions

| Test item | Test condition / Test method | Specification |
|--|--|---|
| Solderability JIS C 0050-4.6 JESD22-B102D | *Solder bath temperature : $235 \pm 5^\circ\text{C}$ *Immersion time : 2 ± 0.5 sec Solder : Sn3Ag0.5Cu for lead-free | At least 95% of a surface of each terminal electrode must be covered by fresh solder. |
| Leaching (Resistance to dissolution of metallization) IEC 60068-2-58 | *Solder bath temperature : $260 \pm 5^\circ\text{C}$ *Leaching immersion time : 30 ± 0.5 sec Solder : SN63A | Loss of metallization on the edges of each electrode shall not exceed 25%. |
| Bending test JIS C 0051-7.4.1 | The middle part of substrate shall be pressurized by means of the pressurizing rod at a rate of about 1 mm/s per second until the deflection becomes 1mm/s and then pressure shall be maintained for 5 ± 1 sec. Measurement to be made after keeping at room temperature for 24 ± 2 hours | No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within $-40 \sim 85^\circ\text{C}$. |
| Resistance to soldering heat JIS C 0050-5.4 | *Preheating temperature : $120 \sim 150^\circ\text{C}$, 1 minute. *Solder temperature : $270 \pm 5^\circ\text{C}$ *Immersion time : 10 ± 1 sec Solder : Sn3Ag0.5Cu for lead-free Measurement to be made after keeping at room temperature for 24 ± 2 hrs | No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within $-40 \sim 85^\circ\text{C}$. Loss of metallization on the edges of each electrode shall not exceed 25%. |

9. Soldering and Mounting



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| | | |
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SCALE: N/A

DRAWN BY: Sera

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10. Matters needing attention in antenna application

1. If space allows, it is best not to choose too small antenna size.
2. It is best to have a large clearance area between the antenna and nearby objects: otherwise it will be difficult to match and adjust, and the radiation pattern will be severely distorted.
3. There should be no wiring or grounding beneath the antenna.
4. Antennas should not be placed too close to metal objects, such as batteries, chips, etc. , should not overlap with the battery and other metal objects.
5. Pay attention to the internal cable (such as the battery power cord) better not too close to the antenna.
6. A bipolar antenna needs a reasonable ground to work best.
7. Antenna matching on the final product solution can reduce the adjustment cycle: in the light plate often requires repeated adjustment.
8. If not matched, the same antenna placed on a completely different layout board may not work properly.
9. Do not use a metal case or plastic case with metal around the antenna. Do not use very thin antenna feeders, feeders should have a certain width, should not be less than 0.1 mm.
10. Calculating the impedance of the feeder based on the thickness and dielectric constant of the PCB, 50 ohms will make the adjustment of the antenna easier, chip Antenna Assembly should be as far away from batteries, EMI protection materials, folding speakers, metal screws, LCD screen, etc.

11. Storage and Transportation Information

Storage Conditions

To maintain the solderability of terminal electrodes:

1. Temperature and humidity conditions: - 10~ 40C and 30~70% RH.
2. Recommended products should be used within 6 months from the time of delivery.
3. The packaging material should be kept where no chlorine or sulfur exists in the air.

Transportation Conditions

1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
3. Bulk handling should ensure that abrasion and mechanical shock are minimized.

| | | |
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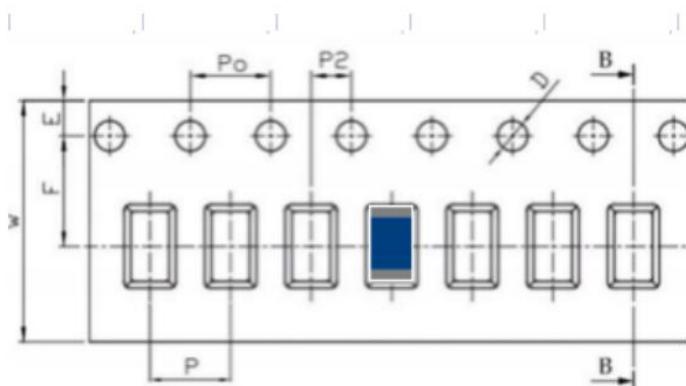
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12. Packing

(1) Quantity/Reel: 5000 pcs/Reel

(2) Plastic tape:

a. Tape Drawing

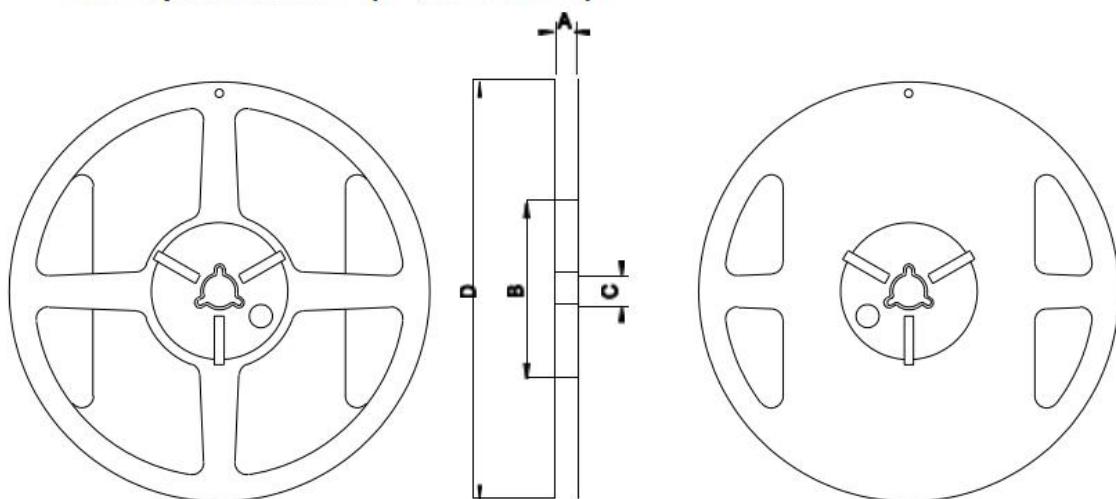


b. Tape Dimensions (unit: mm)

| Feature | Specifications | Tolerances |
|---------|----------------|--------------------|
| W | 8.00 | ± 0.30 |
| P | 4.00 | ± 0.10 |
| E | 1.75 | ± 0.10 |
| F | 3.50 | ± 0.10 |
| P2 | 2.00 | ± 0.10 |
| D | 1.50 | $+0.10$ -0.00 |
| Po | 4.00 | ± 0.10 |
| 10Po | 40.00 | ± 0.20 |

c. Reel Drawing

Reel Specification: (7", $\Phi 180$ mm)



7" x 8 mm

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$X = \pm$ $X.X = \pm$ $X.XX = \pm$
ANGLES = \pm **HOLEDIA** = \pm

SCALE: N/A **UNIT:** mm

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