

Product Specification
Acknowledgement Form
SPECIFICATIONS

客户:

CUSTOMER: _____

产品名称:

DESCRIPTION: _____ Bipolar 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

approve		Review	Fei Liu	manufacture	Xiaomei Liu
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The customer acknowledges the signature and seal	
Date	

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DESIGNED BY: Sera	APPROVED BY: XD					
TITLE: CHIP2450-1608 Specification		DOCUMENT NO.	1608	SPEC REV.		
				P1		

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

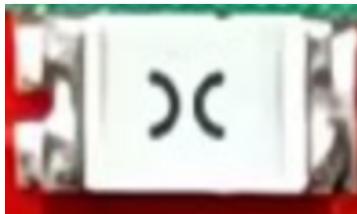
AN **1608** **S** **24** **LS**
A **B** **C** **D** **E**

A	Surface-mount ceramic antenna	Antenna
B	dimension	1.5X0.8mm
C	Antenna type	S: Bipolar D: Monopolar
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 (长)	1.5 ± 0.10
	W (宽)	0.8 ± 0.10
	T (厚度)	0.50 ± 0.10
	A (电极宽度)	0.2 ± 0.10

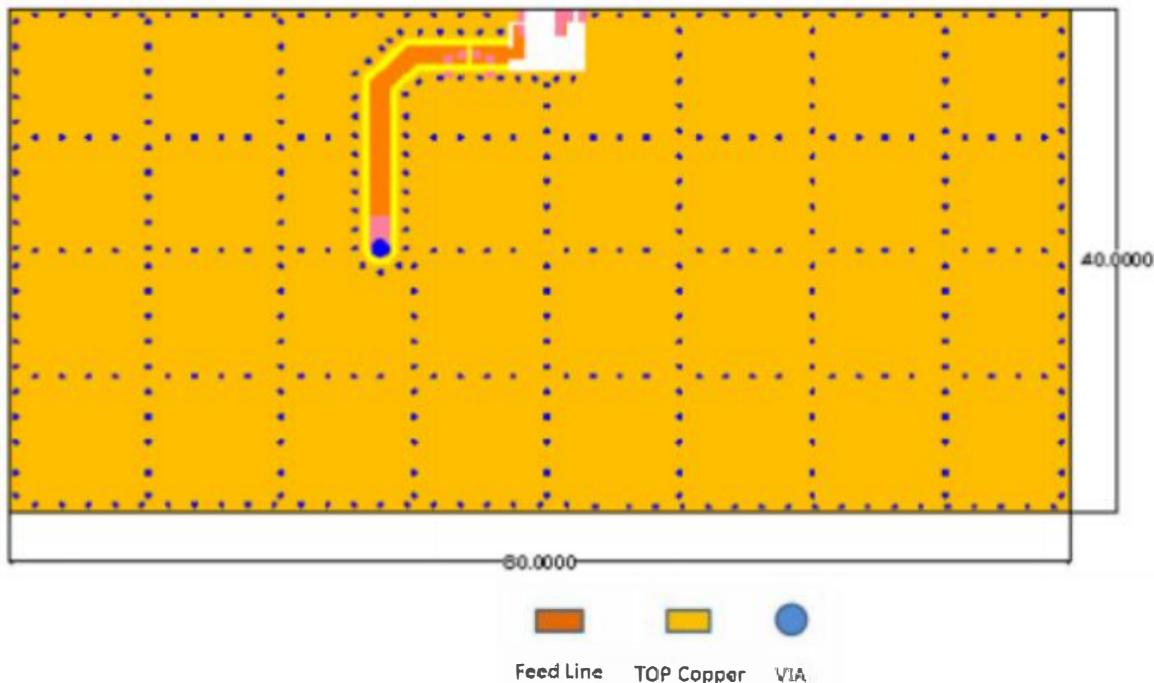
5. Electrical Specification:

Electrical Specification		
Part Number	AN1608S24LS	
Central Frequency	2450	MHz
Bandwidth	120 (Min.)	MHz
Return Loss	-6.5 (Max)	dB
Peak Gain	1.66	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)	

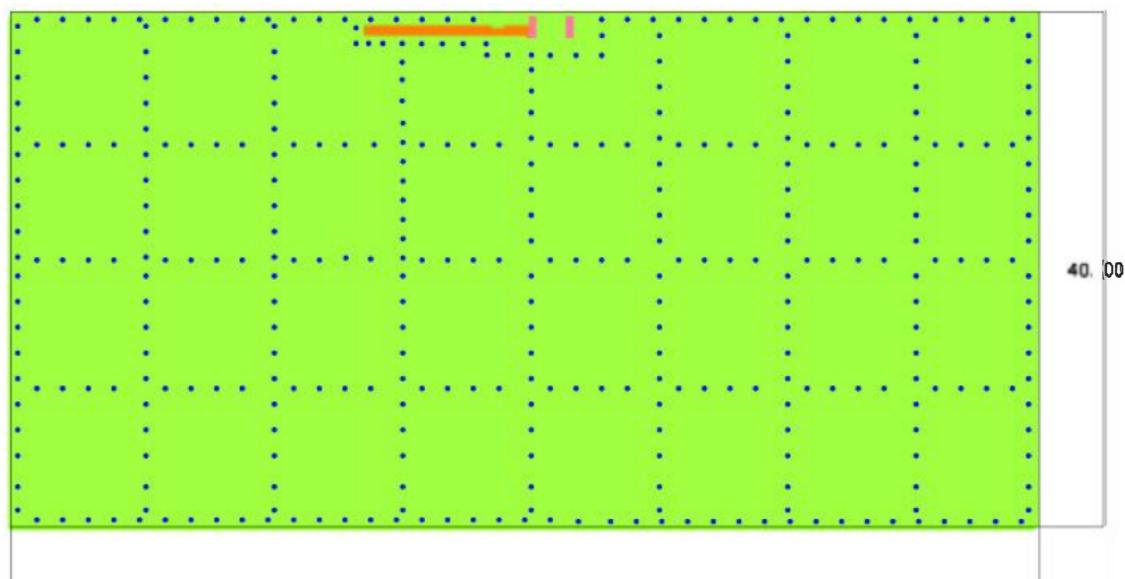
Remark : Bandwidth & Peak Gain was measured under evaluation board of next page

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6. 1608 Recommended for Bipolar Antenna PCB



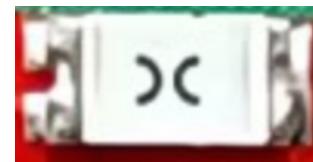
2nd Evaluation Board Dimension



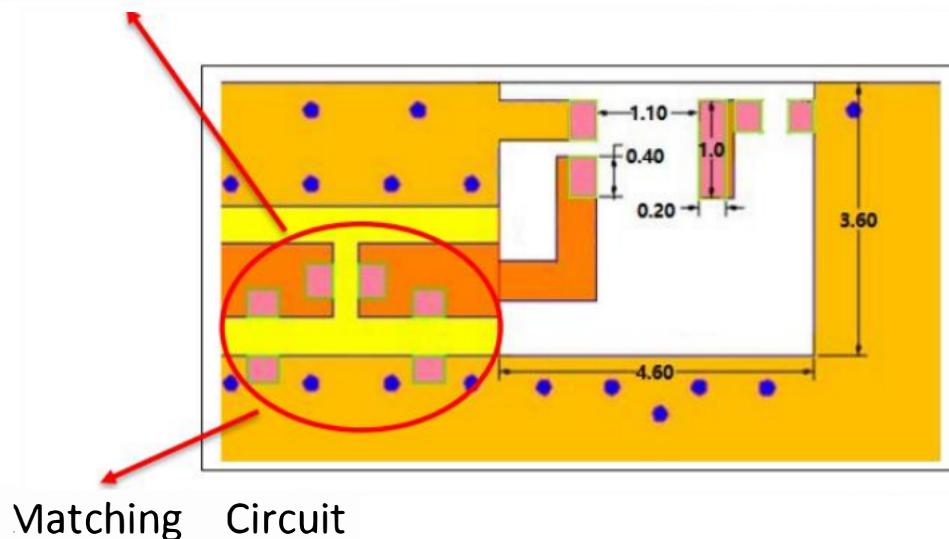
It is recommended to use Murata for the matching components
Inductors and capacitors within $\pm 1\%$ tolerance range

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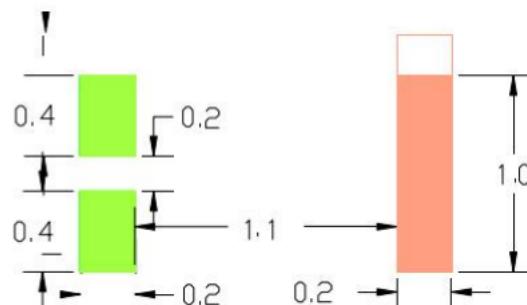
Clearing area (Size=4.6*3.6mm)



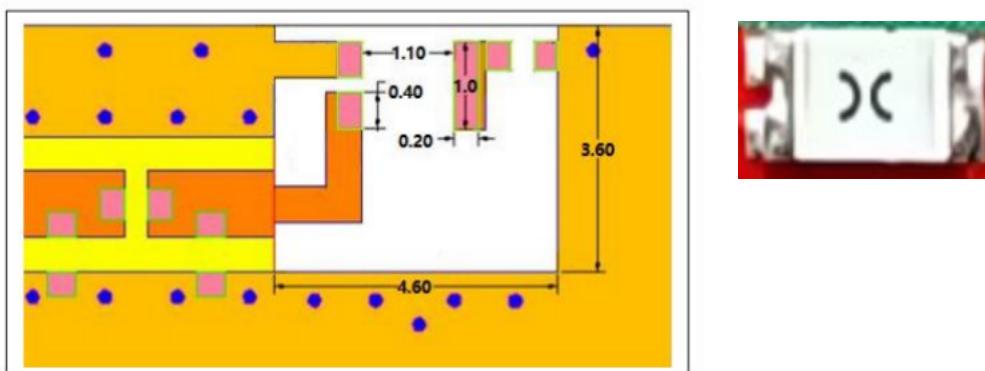
50 ohm transmission Line



FootPrint (Unit : mm)



2 Layout Dimensions in Clearance area (Size=8.0*3.0mm)



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ANGLES = \pm **HOLE DIA** = \pm

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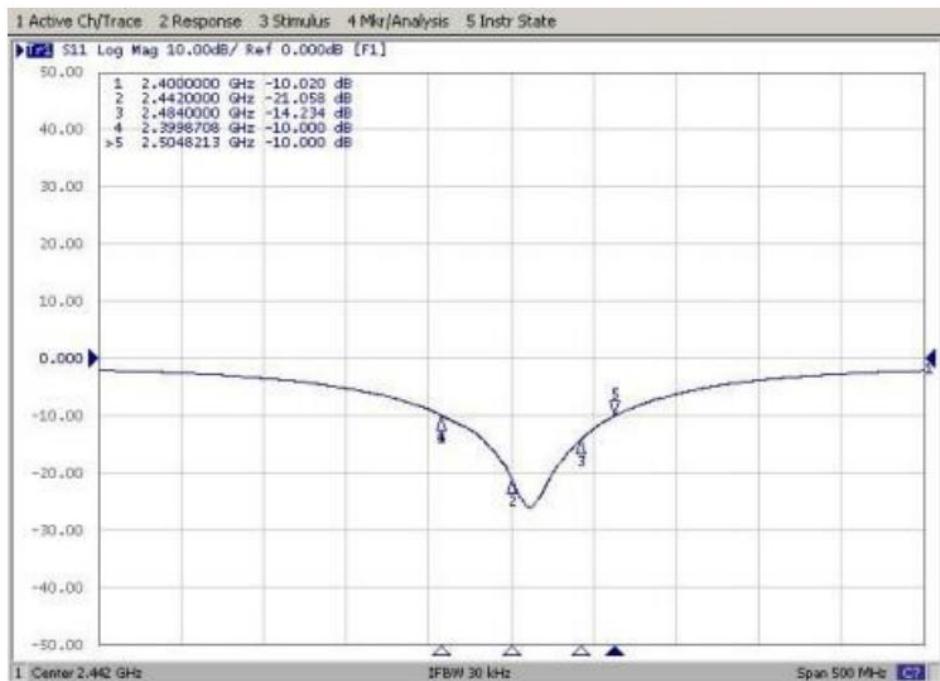
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SPEC REV.

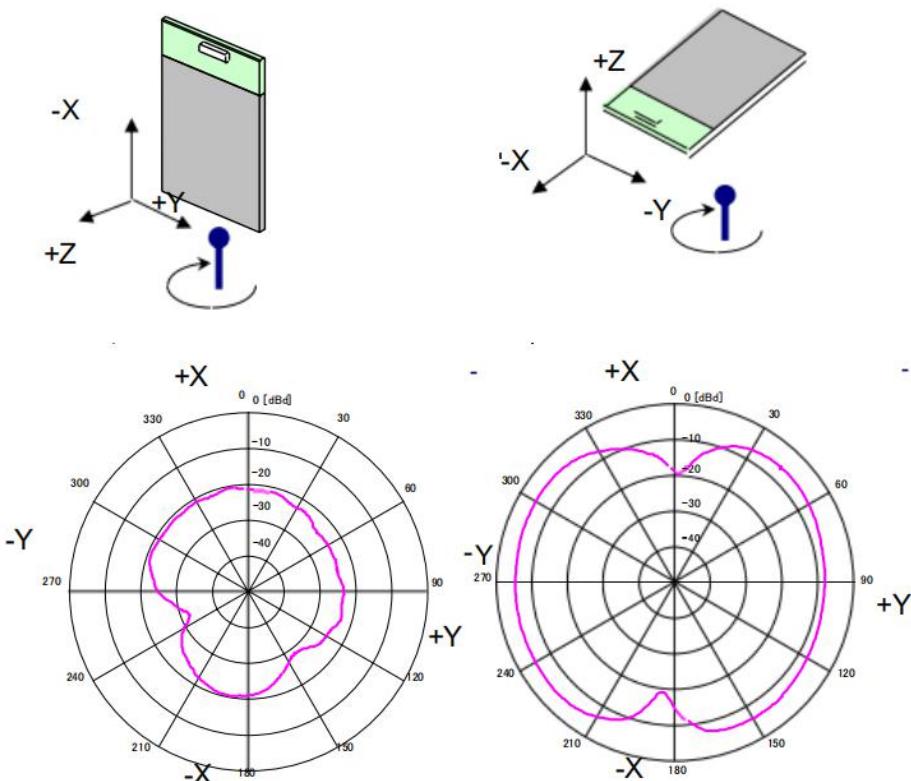
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7. Measurement Results

Return Loss



7.2 Radiation Pattern



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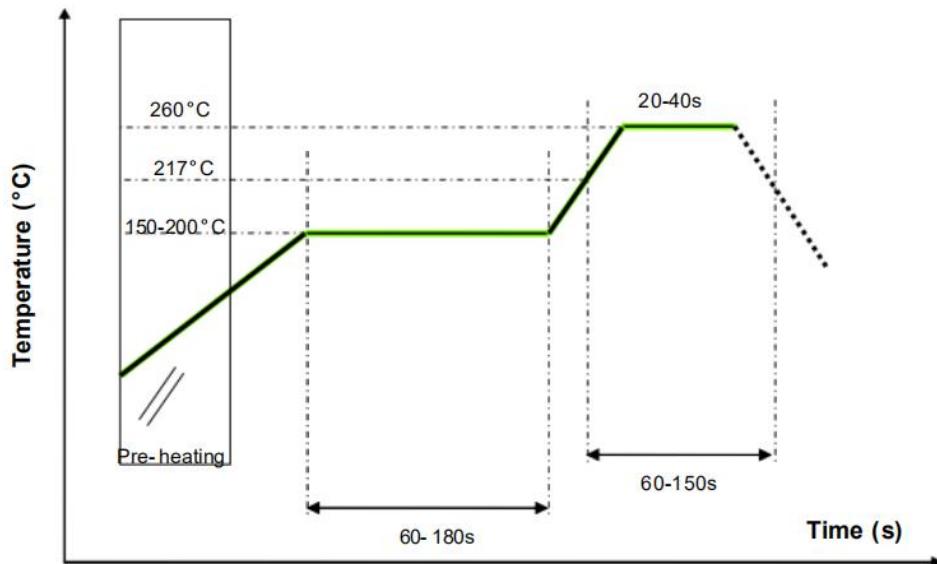
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8. Reliability and Test Conditions

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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10. 天线应用注意事项

- ☒ If space permits, it is better not to choose antennas of too small a size.
- ☒ It is best that there is a considerable clearance between the antenna and nearby objects; otherwise, the matching adjustment will become difficult and the radiation pattern will be severely distorted.
- ☒ There should be no layout of circuits or ground layers beneath the antenna.
- ☒ The antenna should not be placed too close to metal objects, such as batteries and chips, and should not overlap with metal objects like batteries.
- ☒ Please note that internal cables (such as battery power cables) should be kept as far away as possible from the antenna.
- ☒ A bipolar antenna requires a proper ground connection to achieve the best performance.
- ☒ Matching the antennas in the final product design can reduce the adjustment cycle; however, on the optical boards, adjustments often need to be made repeatedly.
- ☒ If not properly matched, the same antenna placed on a layout board with a completely different configuration may not function properly.
- ☒ Do not cover the antenna with metal casings or plastic casings with metal parts.
- ☒ Do not use very thin antenna feeder wires. The feeder wires should have a certain width and should not be less than 0.1mm.
- ☒ The feed line impedance can be calculated based on the thickness and dielectric constant of the PCB. Using 50 ohms as the impedance value will make it easier to adjust the antenna.
- ☒ The assembly of the chip antenna should be kept as far away as possible from batteries, EMI shielding materials, foldable speakers, metal screws, LCD displays, 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.

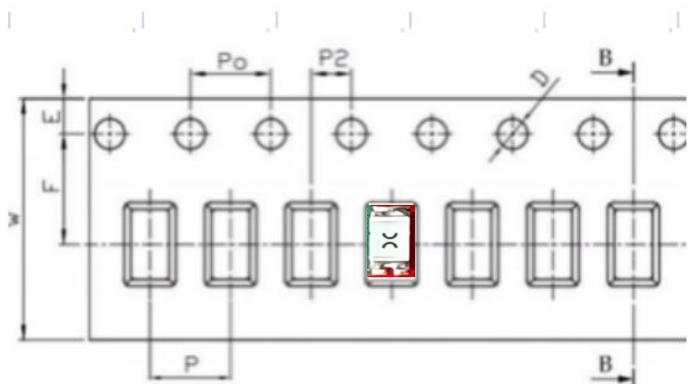
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12. Packing

(1) Quantity/Reel: 5000 pcs/Reel

(2) Plastic tape:

a. Tape Drawing

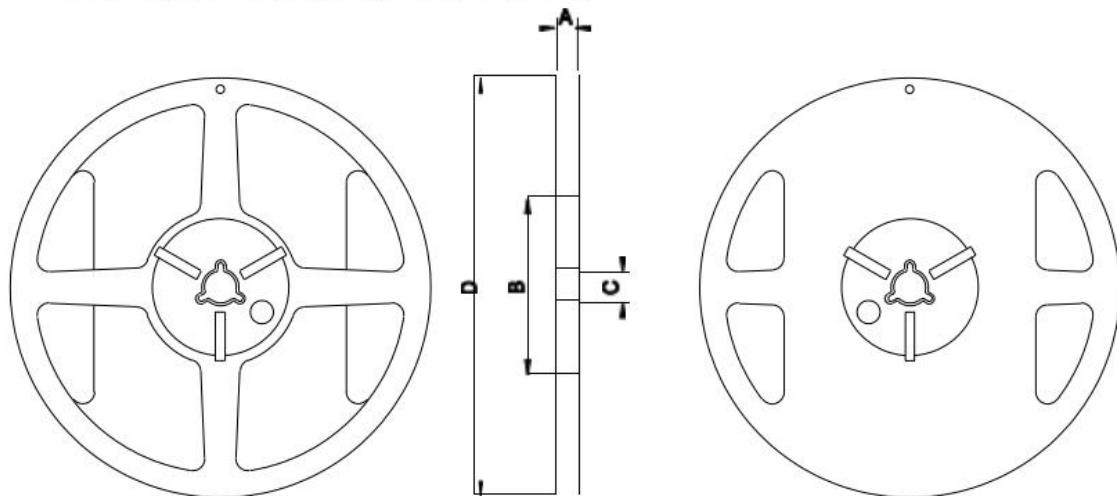


b. Tape Dimensions (unit: mm)

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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