client:

Product specification approval letter

SPECIFICATIONS

	CUSTOME	R:							
	product nan	ne:							
	DESCRIP	TION:			g	eomagnetic antenna			
	Customer Ty	pe:							
	CUSTOM	ER PAR	T NO:						
	Product numb	er:							
	OUR MOD	EL NO	:	PB	3X1	608MA02			
	date:								
	DATE:								
Aft	ter confirming the si	gnature and	sealing, please ret	urn a copy of the a	acknow	rledgment letter			
	PLEASE I	RETUR	N TO US	ONE CO	PY (OF "SPECIFIC	CATION F	OR APPROVAL	,
	WITH YO	UR API	PROVED S	IGNATUR	RES				
							make		
	approve			review		Liu Fei	make	Liu Xiaomei	
									_
		Customer	acknowledgmen	t signature					
			date						
UNLESS	OTHER SPE	CIFIED T	OLERANCES	S ON: X=±					
	XX=±		X.XX=	S ON: X=±		PE	Shenzhen	Pengban Xingye Techno	logy Co., Ltd.
ANGLES	XX=± /A	<u>н</u> [і	X.XX= OLEDIA=± UNIT:mm			PENGBANXING THESEDRAWINGS AN	ND SPECIFICATI	ONS ARE THE PROPERTY OF	РВХҮ
ANGLES SCALE:N DRAWN B	XX=± S=± I/A BY : Sera	H	X.XX= OLEDIA=± JNIT:mm CHECKED BY	: XD		THESEDRAWINGS AN TECHNOLOGY Limite	ND SPECIFICATI		PBXY ED AS THE BASIS
ANGLES SCALE:N DRAWN B DESIGNEI	XX=± /A	H	X.XX= OLEDIA=± JNIT:mm CHECKED BY APPROVED B	: XD		THESEDRAWINGS AN TECHNOLOGY Limite FOR THE MANUFACT	ND SPECIFICATI	ONS ARE THE PROPERTY OF NOT BE REPRODUCED OR US	PBXY ED AS THE BASIS

PBX1608MA02 Specification

Operating Temp.: -40°C~+85°C

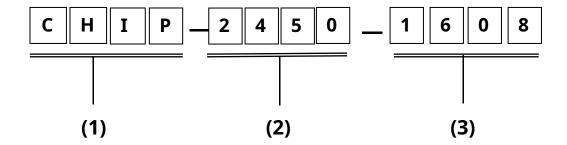
1. FEATURES:

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

2. APPLICATIONS:

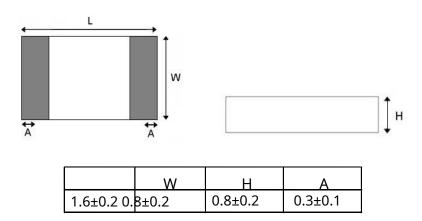
- Bluetooth, Wireless LAN, Mobile TV
- Home RF System, etc

3. PRODUCT IDENTIFICATION



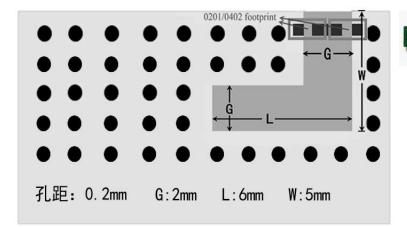
- (1) Product type: Multilayer chip Antenna
- (2) Center Frequency: 2450MHz
- (3) External Dimensions (L×W) (mm): 1.6*0.8

4. SHAPE AND DIMENSIONS:

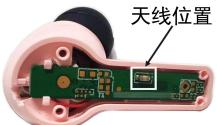


UNLESS OTHER SPECIFICATION XX=± ANGLES=±	FIED TOLERANCES ON: X=± X.XX= HOLEDIA=±	PENGBANXING	Shenzhen Pengban Xingye Technology Co., Ltd	
SCALE:N/A	UNIT:mm	THESEDRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF PBXY		
DRAWN BY : Sera	CHECKED BY: XD	TECHNOLOGY Limited AND SHALL NOT BE REPRODUCED OR USED AS THE BAS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT		
DESIGNED BY: Sera	APPROVED BY: XD	PERMISSION		
TITLE:CHID2/50 1608 Specification		DOCUMENT	1608	SPEC REV.
111 LL.C1117 2430-1008 S	TITLE:CHIP2450-1608 Specification		1008 P	

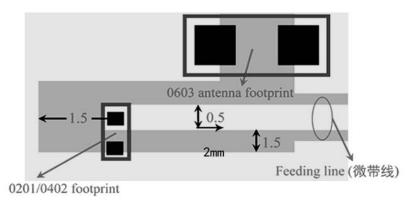
When the antenna is located inside or in the middle of the PCB board (long earphones): (unit:mm)





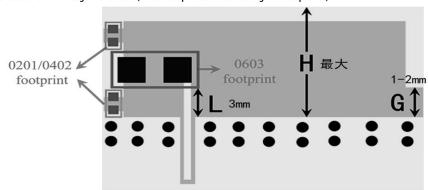


天线需放置在PCBA外层



The antenna is optimally placed in the middle area, and at least one row of vias is optimally required around the clearance area.

he antenna is locatedPCBAt the edge of the board (in-ear headphones and some long-bar headphones):

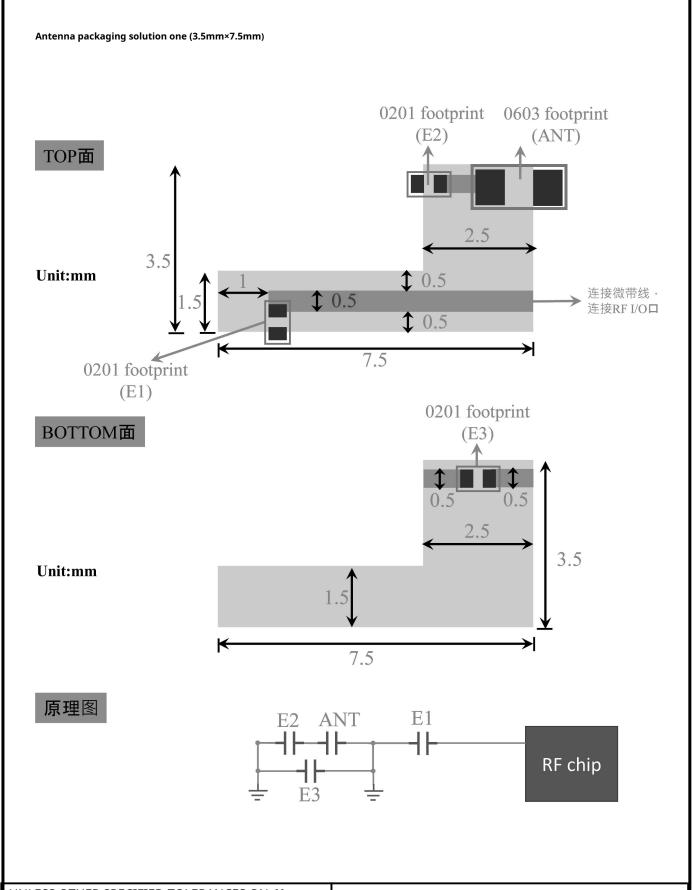


 $The \ antenna\ is\ optimally\ placed\ at PCBA edge;\ the\ antenna\ and\ its\ routing\ are\ set\ on\ a\ single\ layer.$

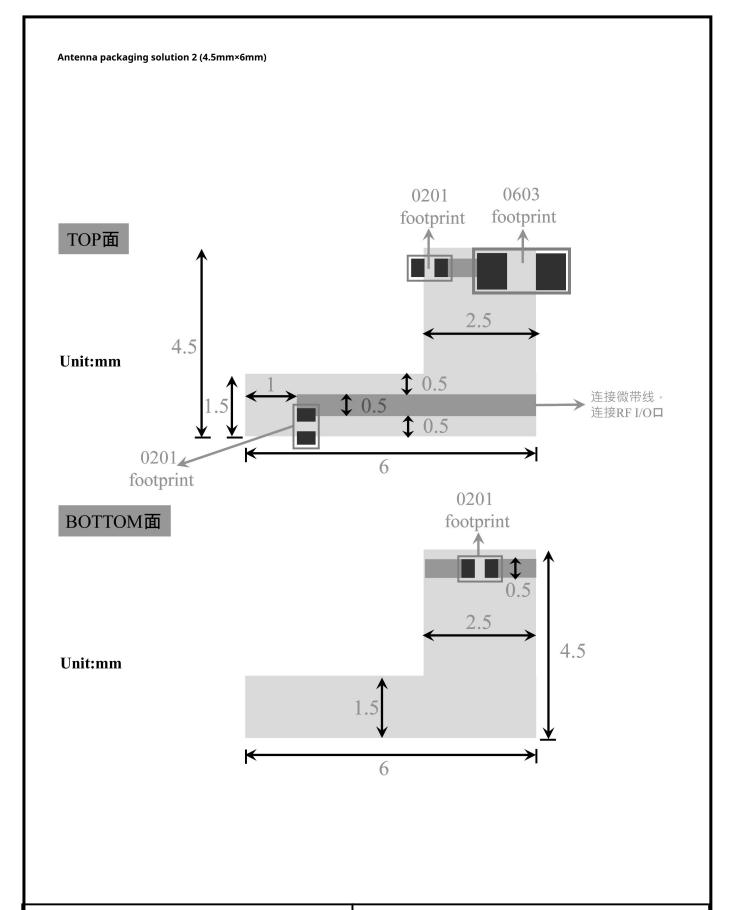
design standards:

- 1.The size in the picture is for reference only; the actual size will be optimized according to different styles.
- 2.Optimally, at least one row of vias is required around the clearance area, and the aperture0.3mm,andPCBAIsolate other circuits or materials on the system.

UNLESS OTHER SPECI	FIED TOLERANCES ON: X=±	SON: X=± Shenzhen Pengban Xingye Technology		
XX=±	X.XX=			gy Co., Ltd.
ANGLES=±	HOLEDIA=±			
SCALE:N/A	UNIT:mm	THESEDRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF PBXY		
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DESIGNED BY: Sera	APPROVED BY: XD	PERMISSION		
TITLE-CHIP24E0 1609 Specification		DOCUMENT	1608	SPEC REV.
111 LL.CI 117 2430-1008	TITLE:CHIP2450-1608 Specification		1008	P1



UNLESS OTHER SPECIFIED TOLERANCES ON: X=± XX=± X.XX=		P b	Shenzhen Pengban Xingye Technolo	ogy Co., Ltd.
ANGLES=±	HOLEDIA=±	PENGBANXING		
SCALE:N/A	UNIT:mm	THESEDRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF PBXY		
DRAWN BY : Sera	CHECKED BY: XD	TECHNOLOGY Limited AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT		
DESIGNED BY: Sera	APPROVED BY: XD	PERMISSION		
TITLE:CHIP24E0 1609 Specification		DOCUMENT	1608	SPEC REV.
TITLE:CHIP2450-1608 Specification		NO.	1008	P1



UNLESS OTHER SPECIFI	ED TOLERANCES ON: X=±	06			
XX=±	X.XX=	and the same of th	Shenzhen Pengban Xingye Technolo	gy Co., Ltd.	
ANGLES=±	HOLEDIA=±	PENGBANXING			
SCALE:N/A	UNIT:mm	THESEDRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF PBXY			
DRAWN BY : Sera	CHECKED BY: XD	TECHNOLOGY Limited AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT			
DESIGNED BY: Sera	APPROVED BY: XD	PERMISSION			
TITLE:CHIP2450-1608 Specification		DOCUMENT NO.	1608	SPEC REV.	
111LL.C1111 2430-1008 3	TITLE:CH1P2450-1608 Specification		1008	P1	

SPEC REV.

P1

1608

Antenna packaging solution three (1.5mm×10mm) 0603 0201 footprint footprint TOP面 **Unit:mm** 连接RF I/O口 0201 footprint 0201 footprint BOTTOM面 Unit:mm UNLESS OTHER SPECIFIED TOLERANCES ON: X=± pb Shenzhen Pengban Xingye Technology Co., Ltd. $XX=\pm$ X.XX= PENGBANXING ANGLES=± **HOLEDIA=±** SCALE:N/A **UNIT:mm** THESEDRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF PBXY TECHNOLOGY Limited AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS **CHECKED BY: XD** DRAWN BY : Sera FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT APPROVED BY: XD PERMISSION **DESIGNED BY: Sera**

DOCUMENT

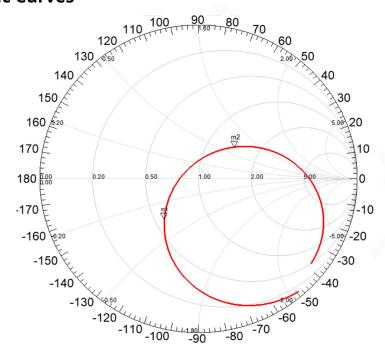
NO.

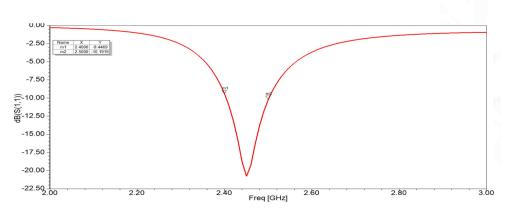
TITLE:CHIP2450-1608 Specification

Electrical Characteristics

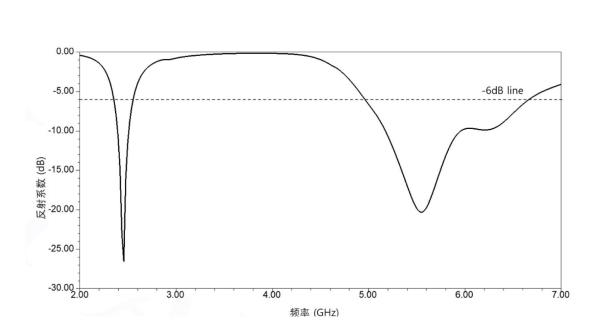
	Feature	Specification
1	Central frequency	2.45GHz
2	Bandwidth	>150MHz
3	Peak gain	2.78 dBi
4	VSWR	<2
5	Polarization	Linear
6	Azimuth beamwidth	Omnidirectional
7	Impedance	50 Ω

Characteristic Curves

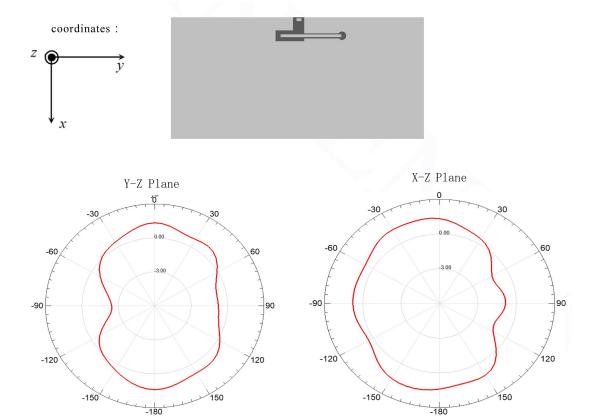




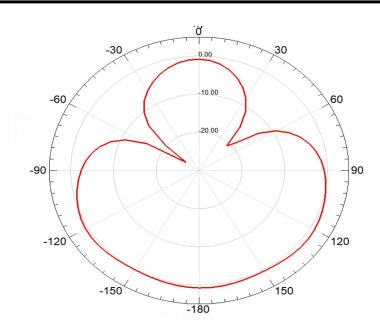
UNLESS OTHER SPECIFI	ED TOLERANCES ON: X=±	Shenzhen Penghan Yingye Technology			
XX=±	X.XX=	and the same of th	Shenzhen Pengban Xingye Technolo	gy Co., Ltd.	
ANGLES=±	HOLEDIA=±	PENGBANXING			
SCALE:N/A	UNIT:mm	THESEDRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF PBXY TECHNOLOGY Limited AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT			
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TITLE:CHIP2450-1608 Specification		DOCUMENT NO.	1608	SPEC REV.	
			1008	P1	



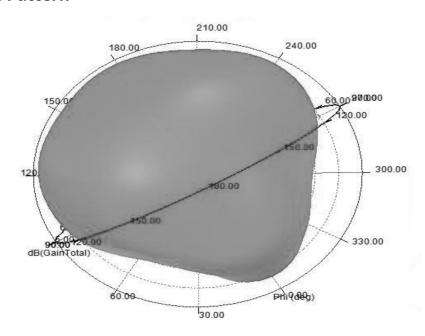
Radiation Pattern



UNLESS OTHER SPECIFI	ED TOLERANCES ON: X=±	Shenzhen Penghan Yingye Technology			
XX=±	X.XX=	and the same of th	Shenzhen Pengban Xingye Technolo	gy Co., Ltd.	
ANGLES=±	HOLEDIA=±	PENGBANXING			
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DESIGNED BY: Sera	APPROVED BY: XD	PERMISSION			
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			1008	P1	



3D Radiation Pattern

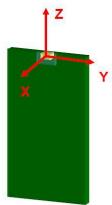


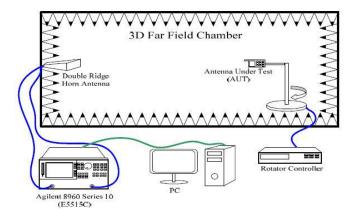
Frequency	2400MHz	2450MHz	2500MHz
Avg. gain	-1.92	-1.35	-1.56
Peak gain	1.79	2.78	2.66
Efficiency	74.55	80.25	76.98

UNLESS OTHER SPECIFICATION XX=± ANGLES=±	FIED TOLERANCES ON: X=± X.XX= HOLEDIA=±	PENGBANXING	Shenzhen Pengban Xingye Technology Co., Ltc	
SCALE:N/A	UNIT:mm	THESEDRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF PBXY TECHNOLOGY Limited AND SHALL NOT BE REPRODUCED OR USED AS THE BASI FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT		
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DESIGNED BY: Sera	APPROVED BY: XD	PERMISSION		
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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.





Environmental Characteristics

(1) Reliability Test

Item	Condition	Specification
Thermal shock	1. 30 ± 3 minutes at -40° C $\pm5^{\circ}$ C, 2. Convert to $+105^{\circ}$ C (5 minutes) 3. 30 ± 3 minutes at $+105^{\circ}$ C $\pm5^{\circ}$ C, 4. Convert to -40° C (5 minutes) 5. Total 100 continuous cycles	No apparent damage Fulfill the electrical spec. after test.
Humidity resistance	 Humidity: 85% R.H. Temperature: 85±5° C Time: 1000 hours. 	No apparent damage Fulfill the electrical spec. after test.
High temperature resistance	1. Temperature: 150° C±5° C 2. Time: 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
Low temperature resistance	1. Temperature: -40° C $\pm 5^{\circ}$ C 2. Time: 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
Soldering heat resistance	1. Solder bath temperature : $260\pm5^{\circ}\!$	No apparent damage
Solderability	The dipped surface of the terminal shall be at least 95% covered with solder after dipped in solder bath of $245\pm5^\circ\!$	No apparent damage

(2) Storage Condition

(a) At warehouse:

The temperature should be within $0 \sim 30$ °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:

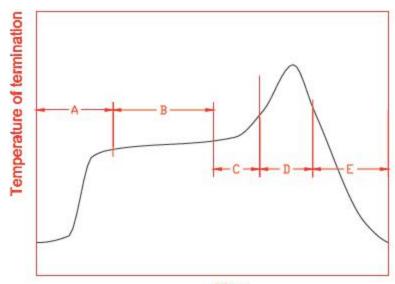
The temperature should be within -40~85°C and humidity should be less than 85% RH.

(3) Operating Temperature Range

Operating temperature range: -40°Cto +105°C.

XX=±	IED TOLERANCES ON: X=± X.XX=	PENGBANXING	Shenzhen Pengban Xingye Technology Co.,	
ANGLES=±	HOLEDIA=±	HOLDERS HE HAD BY ADD BY HOME		
SCALE:N/A	UNIT:mm	THESEDRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF PBXY		
DRAWN BY : Sera	CHECKED BY: XD	TECHNOLOGY Limited AND SHALL NOT BE REPRODUCED OR USED AS THE BASI FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT		
DESIGNED BY: Sera	APPROVED BY: XD	PERMISSION		
TITLE:CHIP2450-1608 Specification		DOCUMENT NO.	1608	SPEC REV.
			1006 P1	

8. Recommended Reflow Soldering



Time

Α	1 st rising temperature	The normal to Preheating temperature	30s to 60s
В	Preheating	140°C to 160°C	60s to 120s
С	2 nd rising temperature	Preheating to 200°C	20s to 40s
D		if 220°C	50s~60s
	Main heating	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.

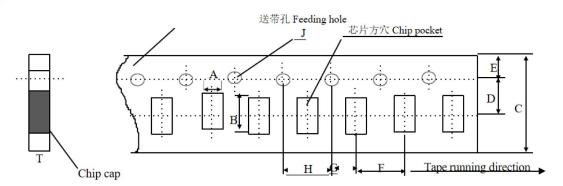
- (a) The tip temperature must be less than 350°C for the period within 3 seconds by using soldering gun under 30 W.
- (b) The soldering gun tip shall not touch this product directly.

(2) Soldering Volume

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

UNLESS OTHER SPECIFICATION XX=± ANGLES=±	FIED TOLERANCES ON: X=± X.XX= HOLEDIA=±	PENGBANXING	Shenzhen Pengban Xingye Technology Co., L		
SCALE:N/A	UNIT:mm	THESEDRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF PBXY			
DRAWN BY : Sera	CHECKED BY: XD	TECHNOLOGY Limited AND SHALL NOT BE REPRODUCED OR USED AS THE BA FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT			
DESIGNED BY: Sera	APPROVED BY: XD	PERMISSION			
TITLE:CHIP2450-1608	Specification	DOCUMENT	1608	SPEC REV.	
111 EE.CHIF 2430-1000 Specification		NO.	1008	P1	

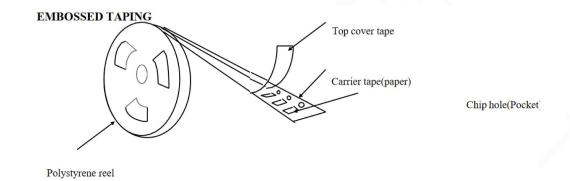
Dimensions of paper taping:



Unit: mm

代号Code 纸带规格 papersize	A	В	С	D*	E	F	G*	Н	J	T
尺寸	1.10	1.90	8.00	3.50	1.75	4.00	2.00	4.00	1.50	1.10
八寸	±0.10	±0.10	±0.10	±0.05	±0.10	±0.10	±0.10	±0.10	-0/+0.10	Max

Reel (4000 pcs/Reel)



Storage Period

The guaranteed period for solderability is 6 months (Under deliver package condition). Temperature: $5\sim40^{\circ}\text{C}$ /Relative Humidity: $20\sim70\%$

UNLESS OTHER SPECI XX=± ANGLES=±	FIED TOLERANCES ON: X=± X.XX= HOLEDIA=±	PENGBANXING	Shenzhen Pengban Xingye Technology Co., Lt		
SCALE:N/A	UNIT:mm	THESEDRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF PBXY TECHNOLOGY Limited AND SHALL NOT BE REPRODUCED OR USED AS THE BAS			
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TITLE:CHIP2450-1608	Specification	DOCUMENT NO.	1608	SPEC REV.	
111 EE.CHII 2430-1008			1008	P1	