

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

SPECIFICATIONS

CUSTOMER: _____

DESCRIPTION: Geomagnetic Antenna

CUSTOMER PART NO: _____

OUR MODEL NO: **PBX1608MA02**

DATE: _____

Antenna type : Internal Antenna

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

WITH YOUR APPROVED SIGNATURES

Approved	LiuFei	Audit	LiuFei	Making	LiuXiaoMei
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Customer Acknowledges Signature	
Date	

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

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SCALE: N/A

UNIT: mm

DRAWN BY : Sera

CHECKED BY: XD

DESIGNED BY: Sera

APPROVED BY: XD

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TITLE: CHIP2450-1608 Specification

DOCUMENT NO.

1608

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PBX1608MA02 Specification

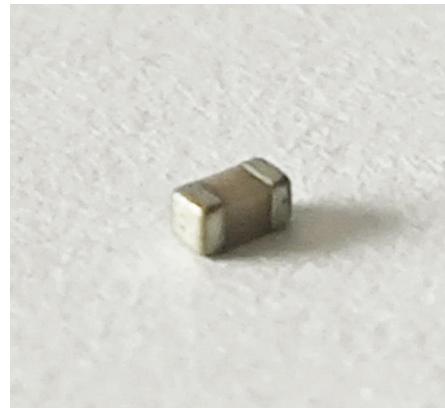
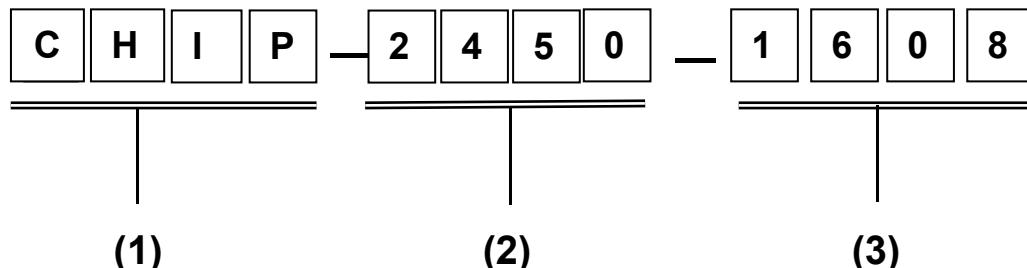
Operating Temp. : -40°C~+85°C

1. FEATURES:

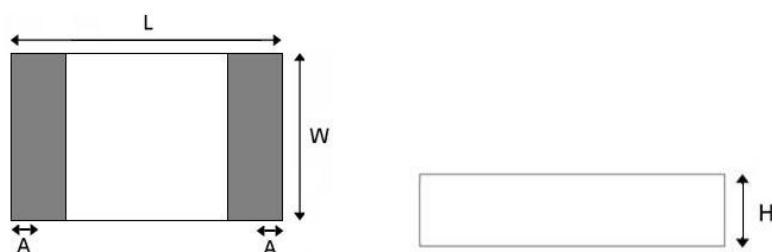
- Light weight, compact
- Wide bandwidth, low cost
- Built-in antenna with high gain

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:

L	W	H	A
1.60±0.20	0.80±0.20	0.80±0.20	0.30±0.10

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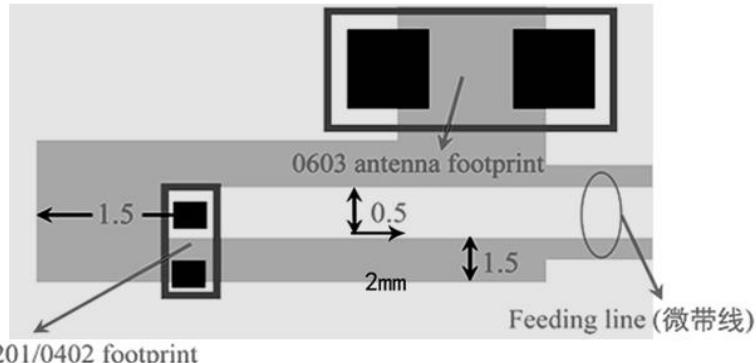
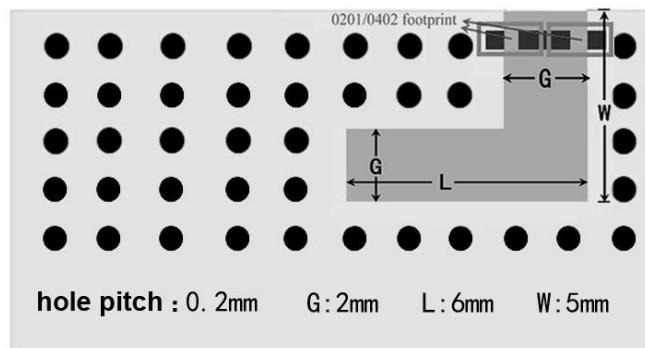
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- Antenna is located in the PCB board or the middle position (long-bar headphones): (units: mm)

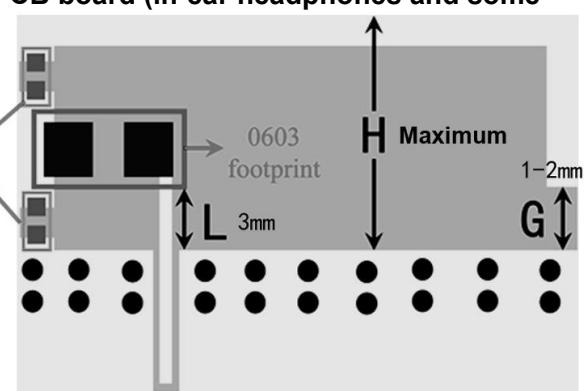


The antenna is optimally placed in the middle area, and at least one row of through holes around the clearance area is optimally required.

- When the antenna is located at the edge of the PCB board (in-ear headphones and some long-bar headphones) :

The antenna is optimally placed on the edge of the PCBA; the antenna and its alignment are set on a single layer.

Design criteria::



1. The dimensions in the diagram are for reference only; the actual dimensions are optimized for different versions.
2. The optimum clearance area around the need for at least a row of holes, aperture 0.3 mm, and other PCBA circuit or material isolation.

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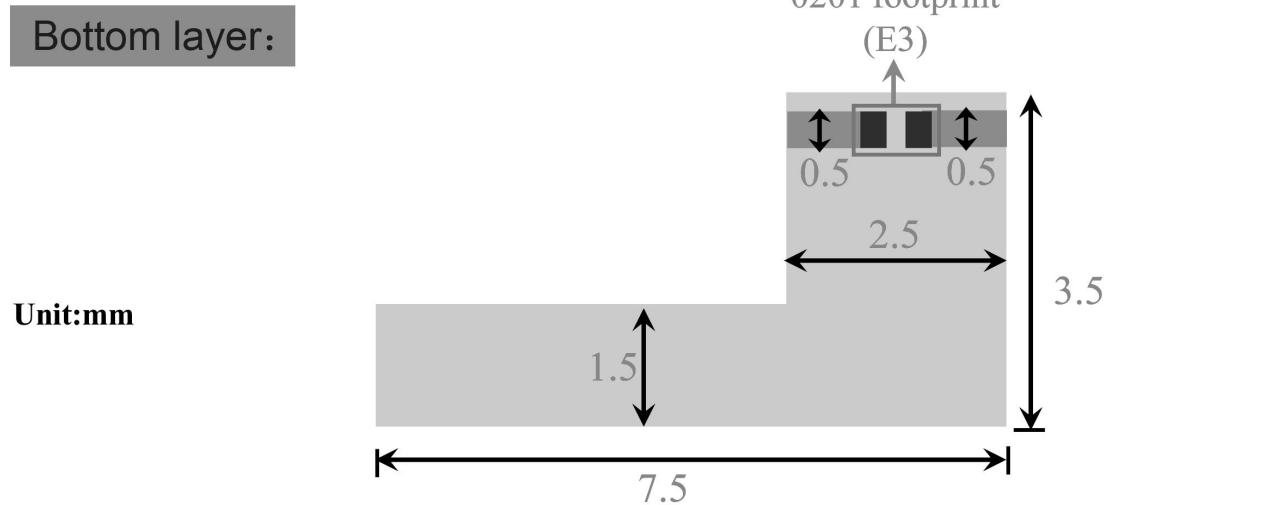
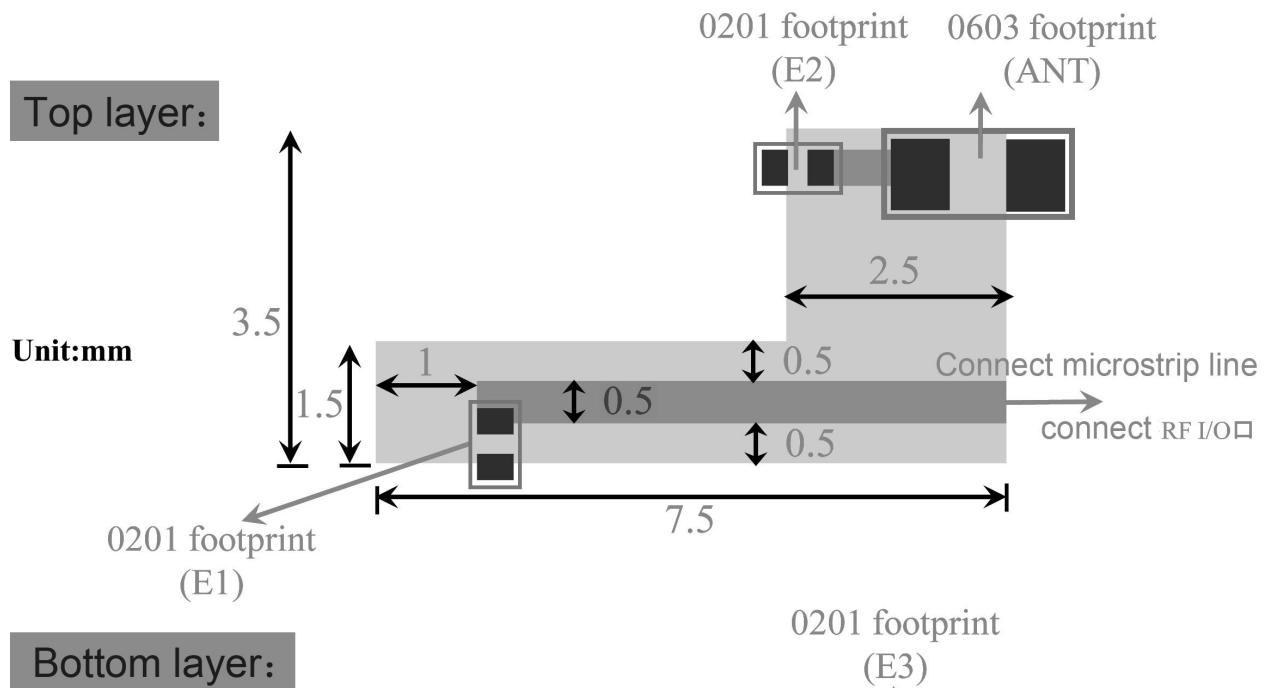
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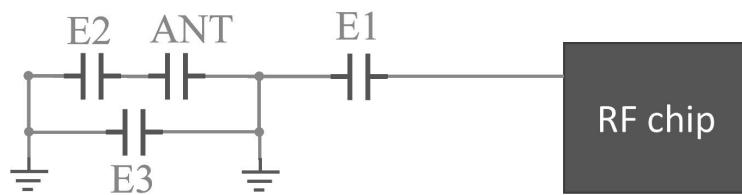
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Antenna Package Scheme 1 (3.5mm×7.5mm)



Schematic diagram



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ANGLES = \pm	HOLES Δ	DI Δ

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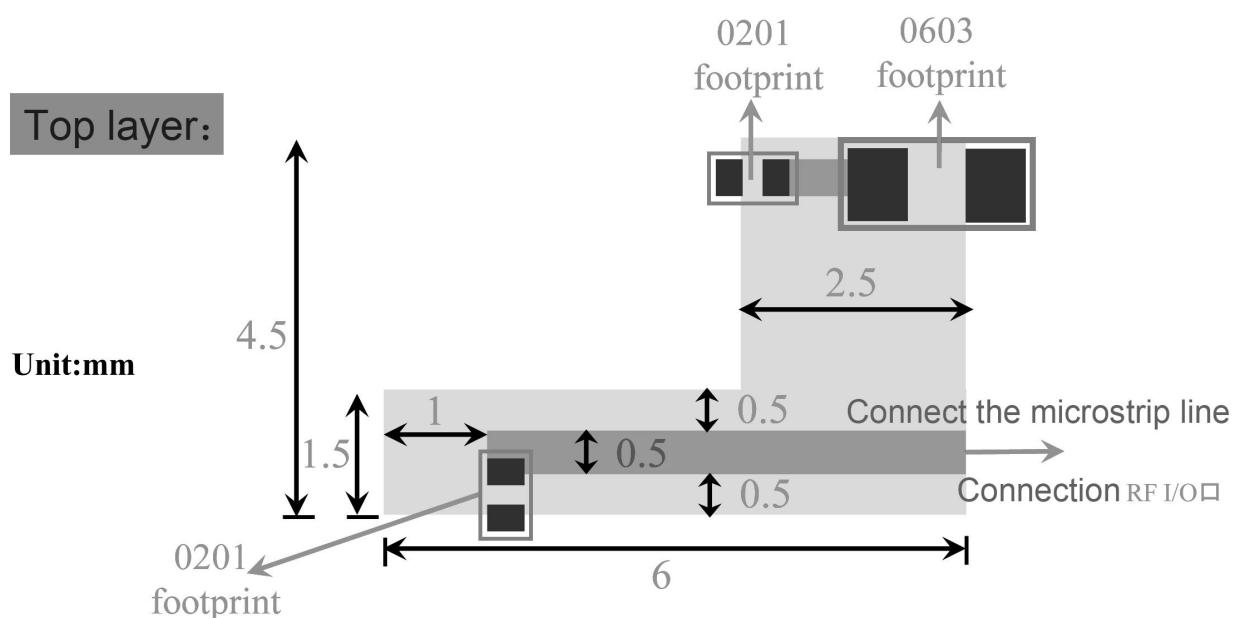
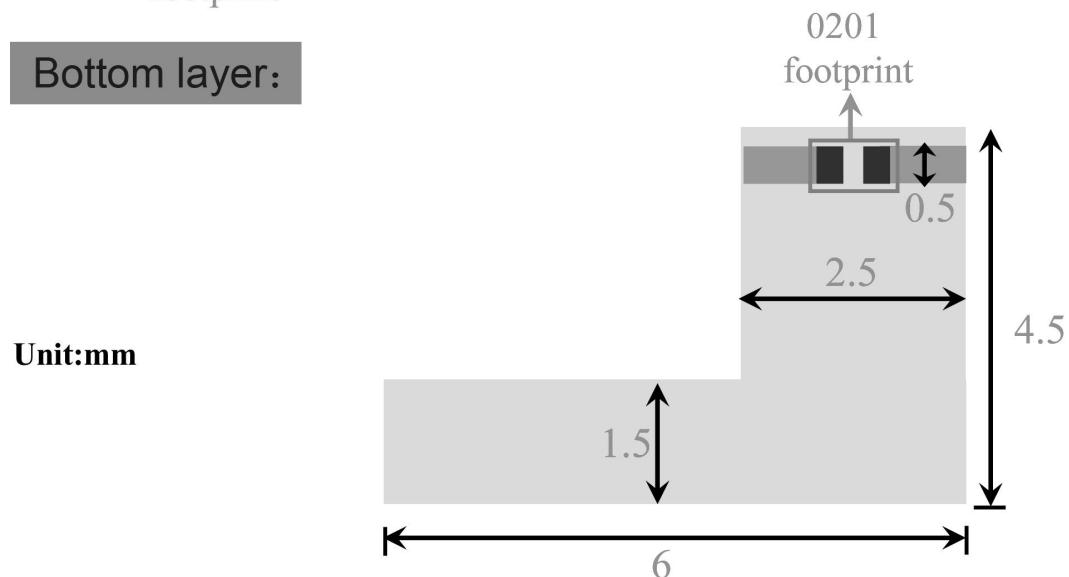
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Antenna Package Scheme II (4.5mm×6mm)**Top layer:****Bottom layer:**

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

SCALE: N/A

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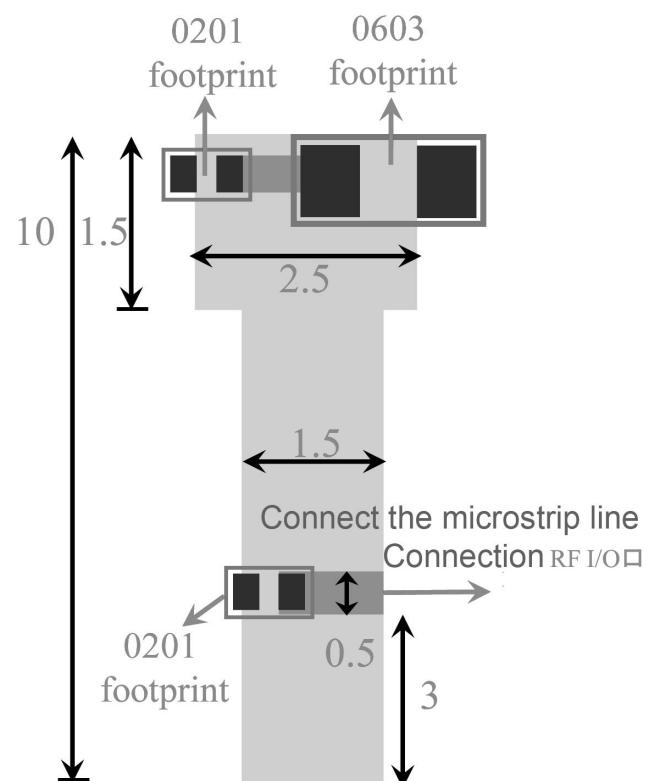
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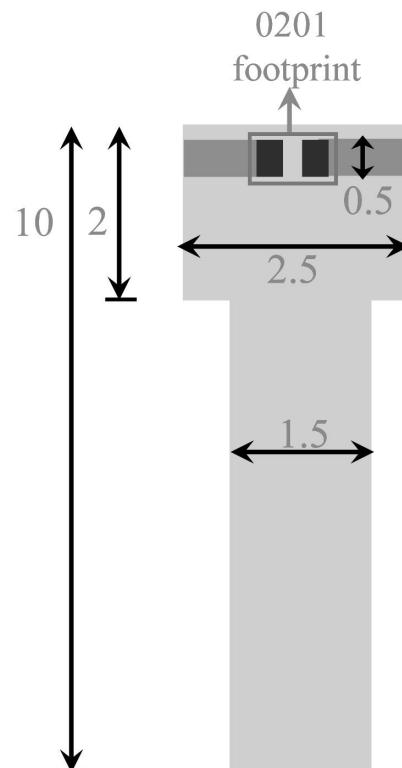
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Antenna Package Scheme III (1.5mm×10mm)

Top layer:



Bottom layer:



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ANGLES = \pm	HOLE DIA = \pm	

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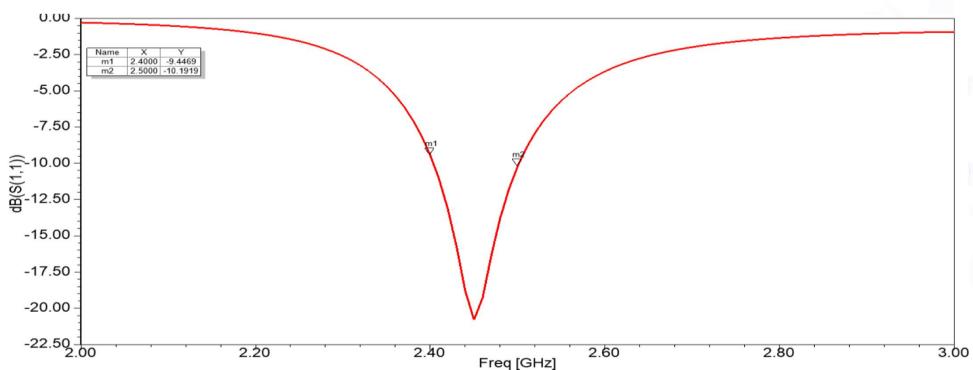
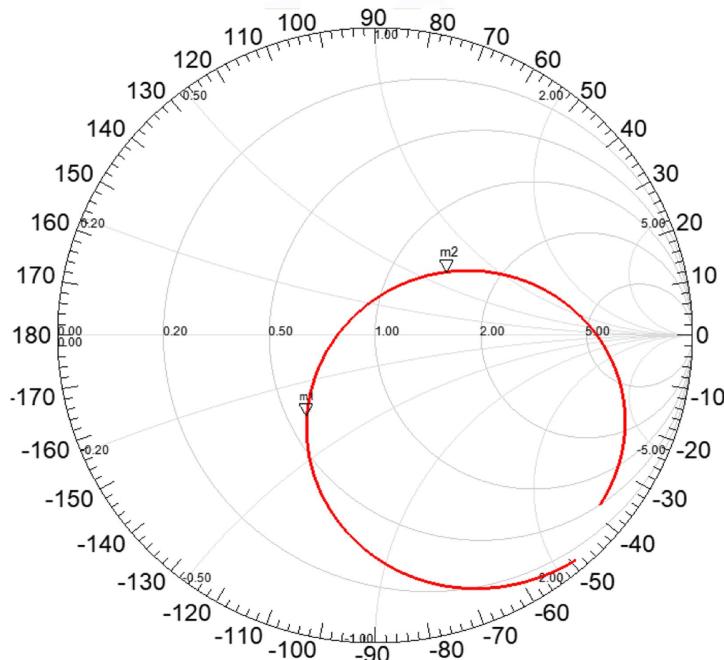
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Electrical Characteristics

	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



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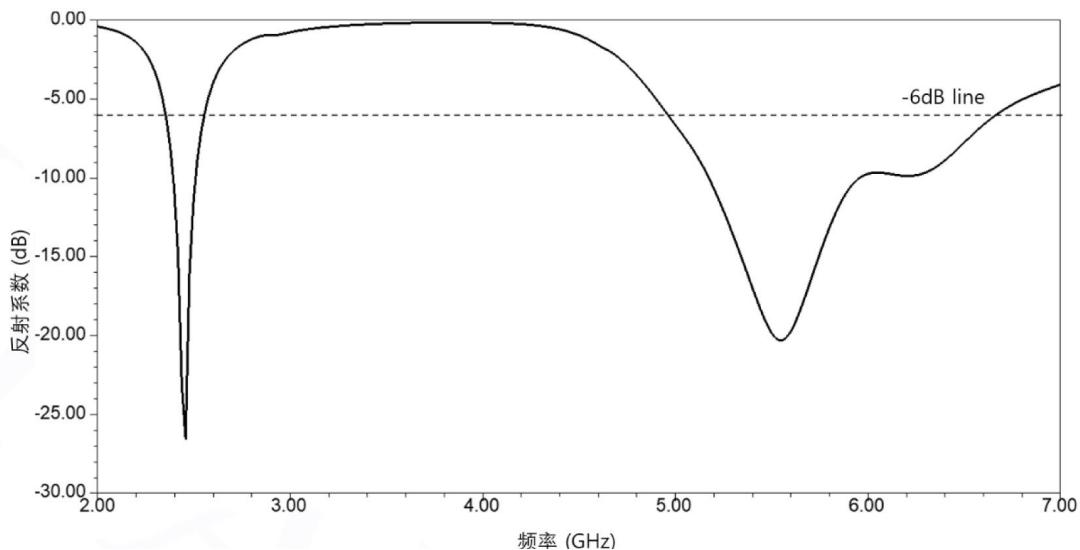
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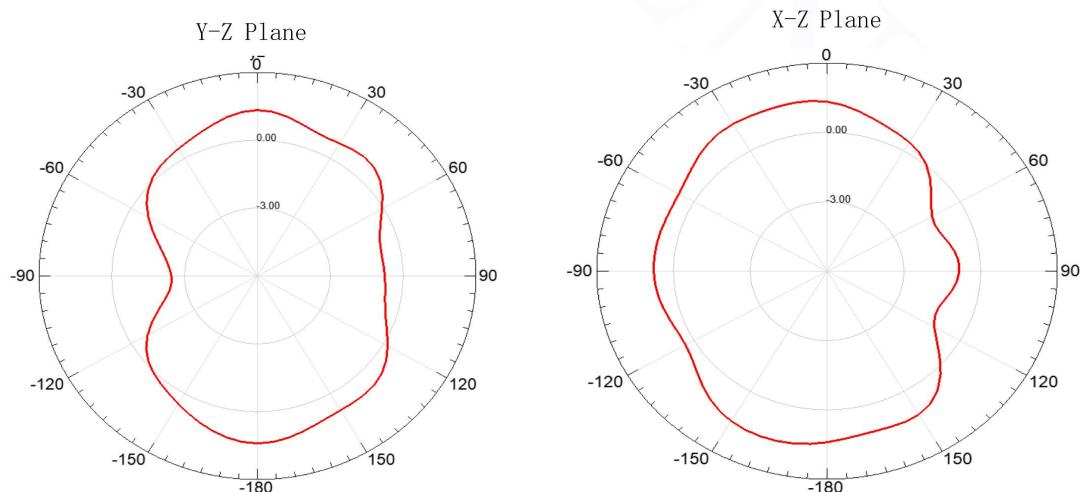
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Radiation Pattern



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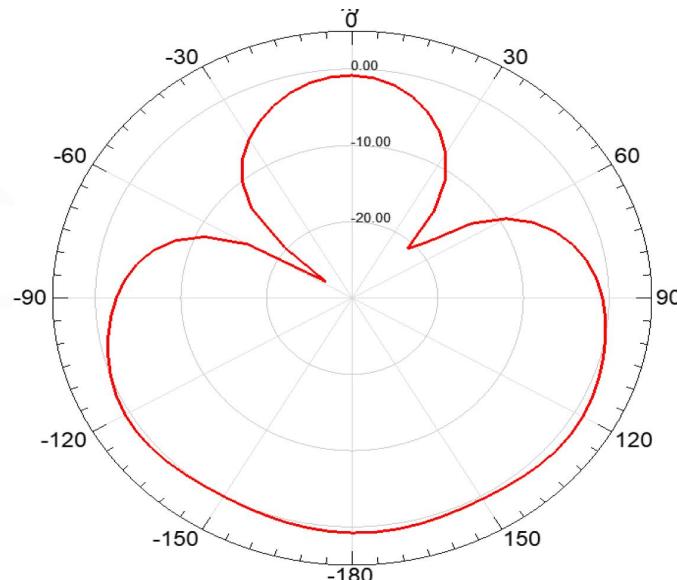


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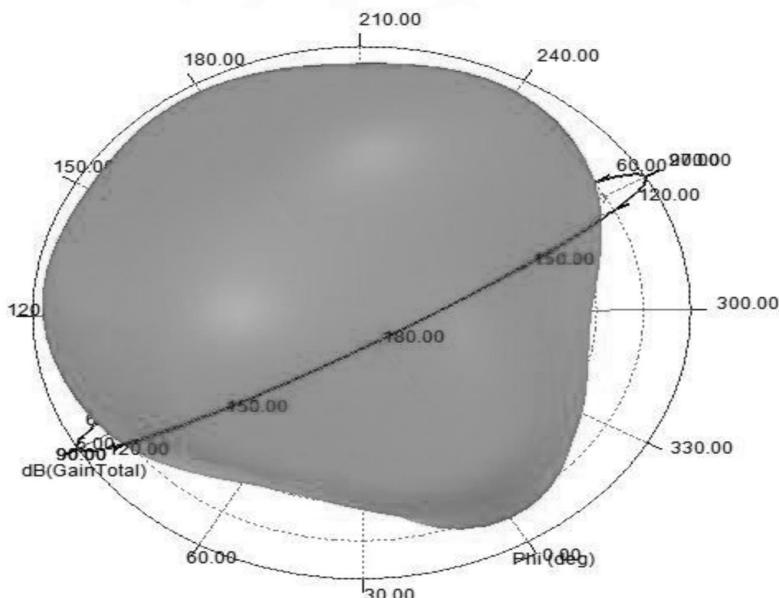
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3D Radiation Pattern



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

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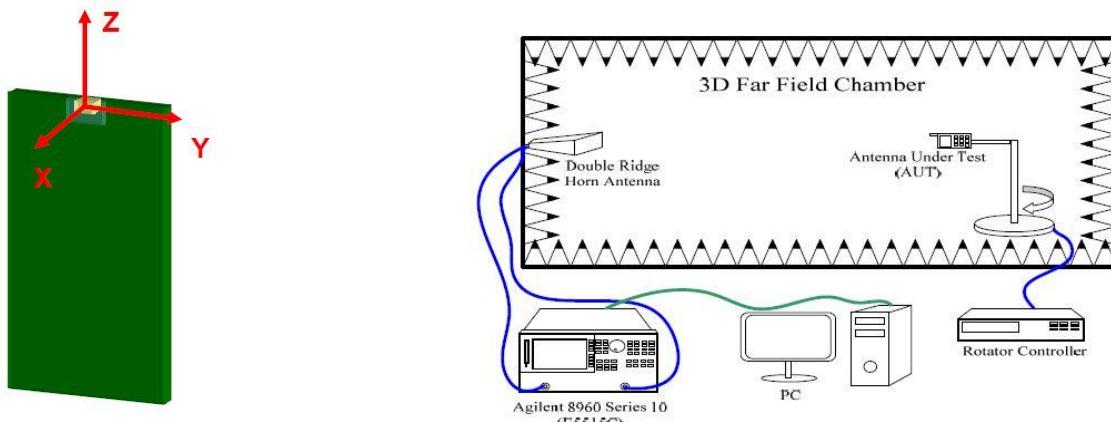
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Radiation Pattern

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 $-40^\circ C \pm 5^\circ C$, 2. Convert to $+105^\circ C$ (5 minutes) 3. 30 ± 3 minutes at $+105^\circ C \pm 5^\circ C$, 4. Convert to $-40^\circ C$ (5 minutes) 5. Total 100 continuous cycles	No apparent damage Fulfill the electrical spec. after test.
Humidity resistance	1. Humidity: 85% R.H. 2. Temperature: $85 \pm 5^\circ C$ 3. Time: 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
High temperature resistance	1. Temperature: $150^\circ C \pm 5^\circ C$ 2. Time: 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
Low temperature resistance	1. Temperature: $-40^\circ C \pm 5^\circ C$ 2. Time: 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
Soldering heat resistance	1. Solder bath temperature : $260 \pm 5^\circ C$ 2. Bathing time: 10 ± 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 $245 \pm 5^\circ C$ for 3 ± 1 seconds.	No apparent damage

(2) Storage Condition

(a) At warehouse:

The temperature should be within $0 \sim 30^\circ C$ 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 $-40 \sim 85^\circ C$ and humidity should be less than 85% RH.

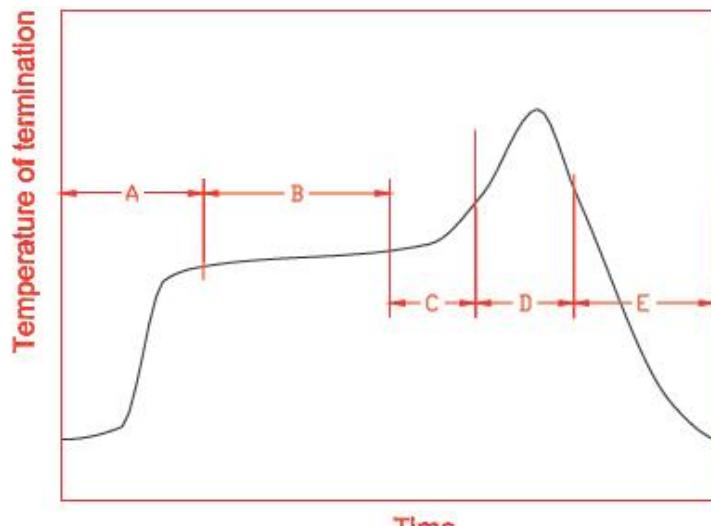
(3) Operating Temperature Range

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

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8. Recommended Reflow Soldering



A	1 st rising temperature	The normal to Preheating temperature	30s to 60s
B	Preheating	140°C to 160°C	60s to 120s
C	2 nd 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.

- (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.

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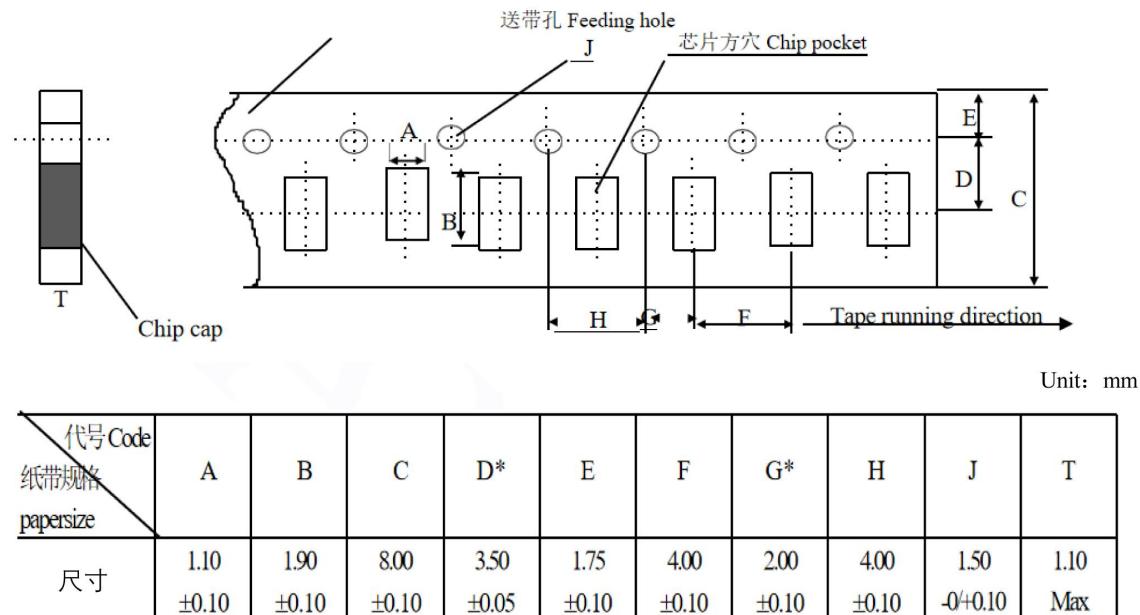
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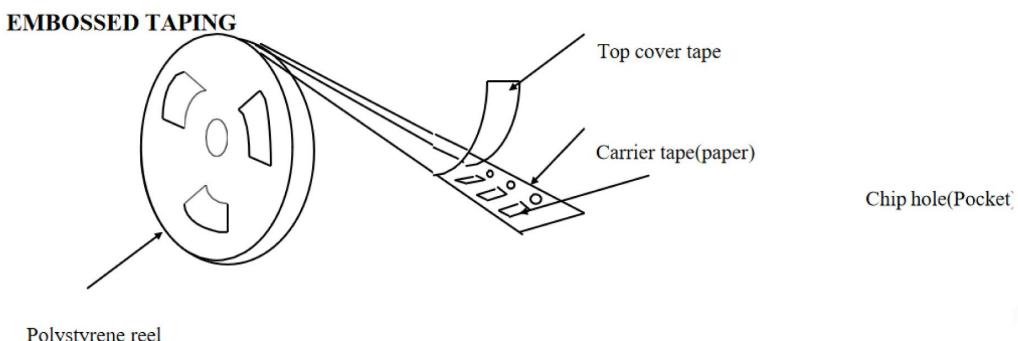
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Dimensions of paper taping:



Reel (4000 pcs/Reel)



Storage Period

The guaranteed period for solderability is 6 months (Under deliver package condition).
Temperature: 5~40°C / Relative Humidity: 20~70%

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