Datasheet of LTCC Device

Laminated Ceramic Antenna

2450 MHz

P/N: HXD BT-8

*Contents in this sheet are subject to change without prior notice.

LTCC Antenna 3216 Size

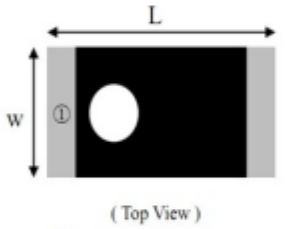
1. Features

Antenna Frequency for 2450 MHz

2. Applications

For Miniaturized Bluetooth System

3. Shapes & Dimensions (mm)



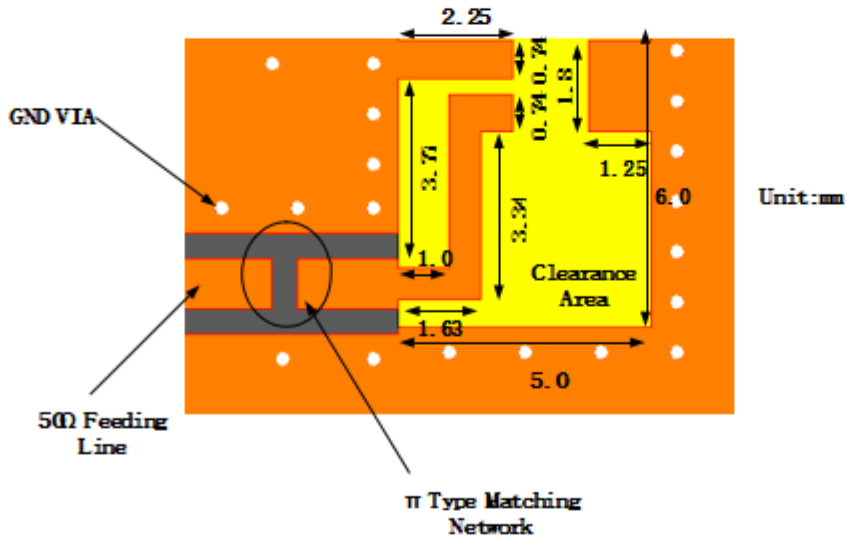
(Top View)

Number	Terminal Name
①	INPUT

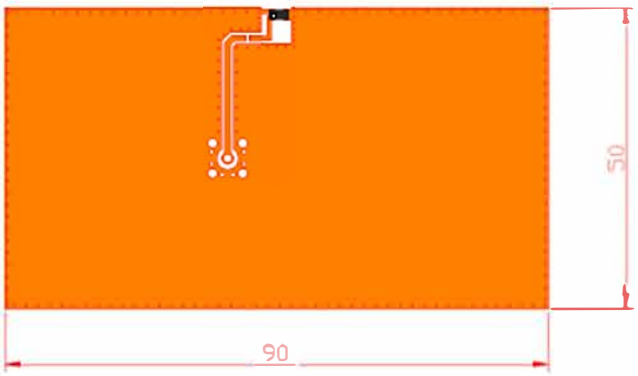
(Bottom View)

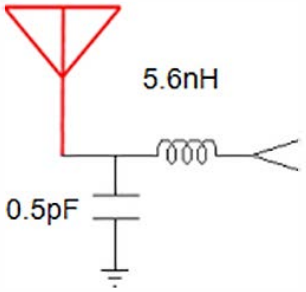
(Side View)

Symbols	L	W	T	A
Dimensions	3.2+/-0.2	1.6+/-0.2	0.5+/-0.1	0.4+/-0.1



4. Evaluation Board and Matching Circuits

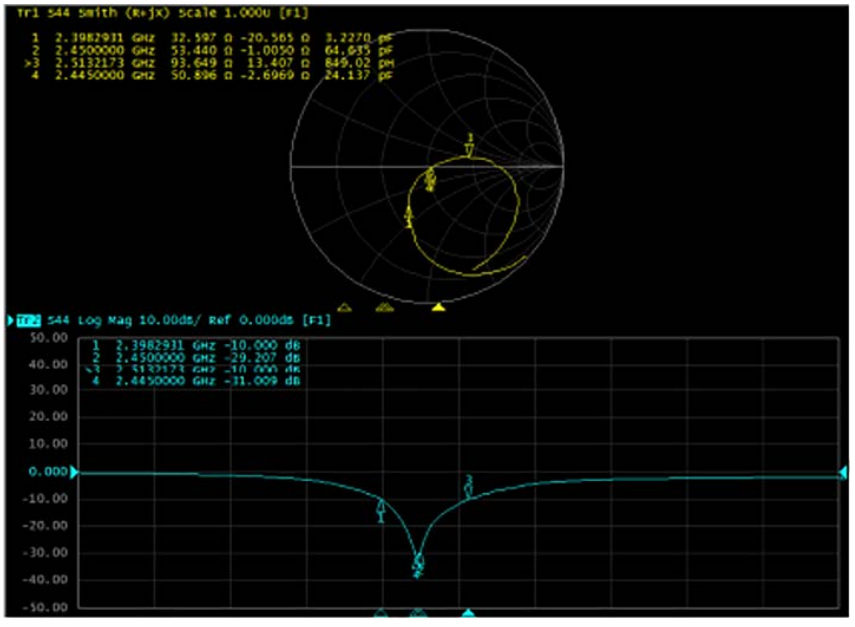




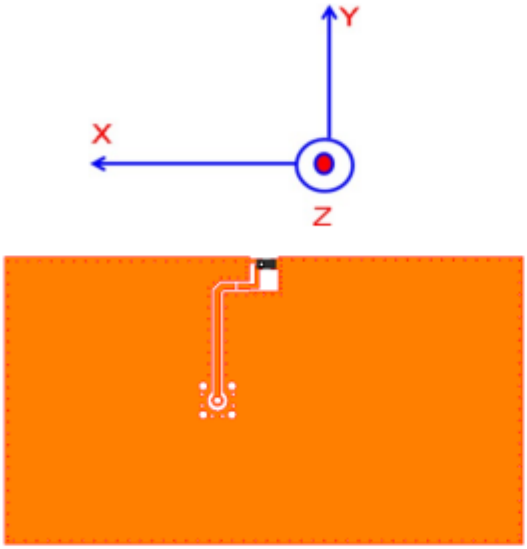
5. Electrical Characteristics

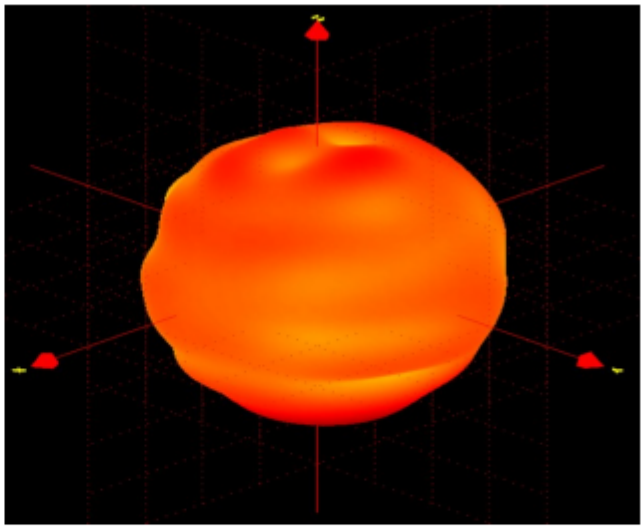
Item	Specifications
After Matching	2450MHz
Band Width	100 MHz typ.
Peak Gain	4.08 dBi
V.S.W.R	≤2.0
Polarization	Linear
Azimuth Beam width	Omni-directional
Impedance	50 Ω

6. Characteristic curve



7. Radiation Pattern & Efficiency



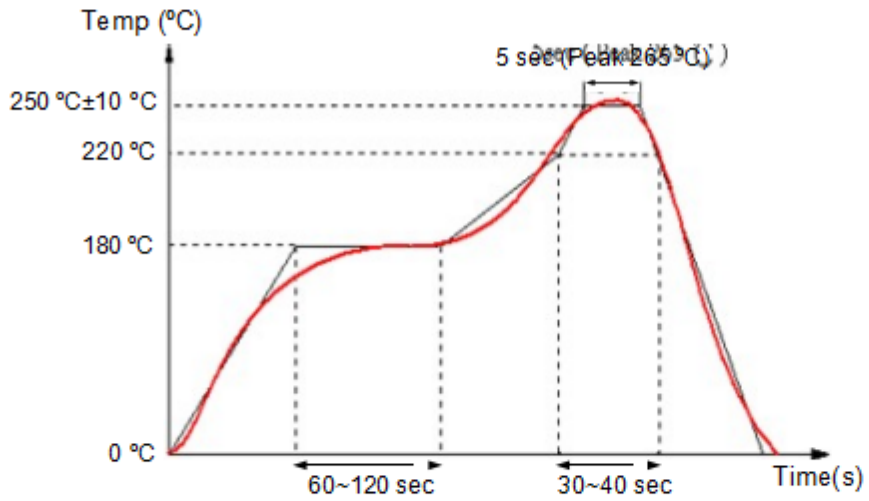


Frequency (MHz)	2400	2450	2500
Avg. Gain (dBi)	-1.91	-1.30	-1.48
Peck Gain (dBi)	1.76	4.08	2.53
Efficiency (%)	72.1	78.2	71.8

8. Post Dependability Tolerance

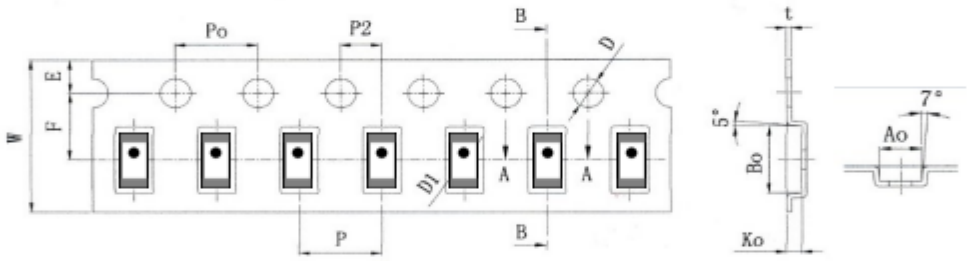
Item	Post Dependability Tolerance
Central Frequency	± 5 MHz
Band Width	± 5 MHz
Gain	± 0.1 dBi
V.S.W.R (in BW)	± 0.1

9. Reflow Soldering Standard Condition



10. Packaging and Dimensions 3216

◆ **Plastic Tape**



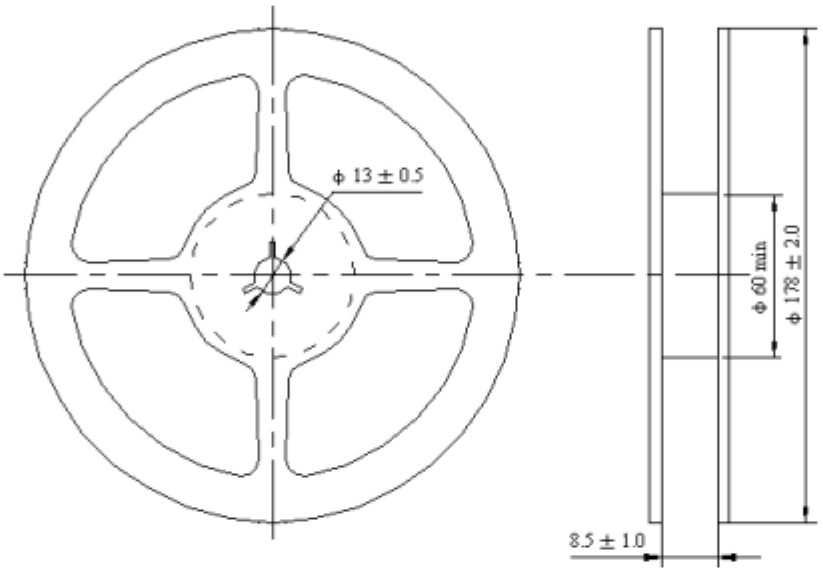
外觀	規格	公差
W	8.00	±0.10
P	4.00	±0.10
E	1.75	±0.10
F	3.50	±0.05
P2	2.00	±0.05
D	1.50	+0.10 −0.00
D1	1.00	±0.10
Po	4.00	±0.10
10Po	40.00	±0.20

外觀	規格	公差
Ao	1.85	±0.10
Bo	3.50	±0.10
Ko	0.73	±0.10
t	0.23	±0.05

◆ **Remarks for Package**

Reserve a length of 150~200mm for the trailer of the carrier and 250~300 mm for the leader of the carrier and further 250mm of cover tape at the leading part of the carrier.

◆ **Reel (6000 pcs/Reel)**



◆ **Storage Period**

Oxidizable Material, 12 months in vacuum sealed bag, please repack within 168 hours by re-seal the package treatment after using.

Storage Temperature Range : <30 degree C, Humidity : <60%RH

11. Dependability Test

Test item	Test condition / Test method	Specification
Solderability IEC 60068-2-58 GB/T2423.28	*Solder bath temperature: 240± 5℃ *Immersion time: 2± 0.5 sec Solder: Sn96.5 Ag3.0 Gu0.5 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) JIS C5101	*Solder bath temperature: 260± 5℃ *Leaching immersion time: 10± 1 sec Solder : Sn96.5 Ag3.0 Gu0.5 for lead-free.	Loss of metallization on the edges of each electrode shall not exceed 25%.
Resistance to soldering heat IEC 60068-2-58 GB/T2423.28	*Preheating temperature: 120~150℃, 1 minute. *Solder temperature: 260± 5℃ *Immersion time: 10± 1 sec Solder: Sn 96.5 Ag 3.0 Gu0.5 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 at the room temperature. Loss of metallization on the edges of each electrode shall not exceed 25%.
Drop Test IEC 60068-2-32 GB/T2423.8 Customer's specification.	*Height: 50 cm *Test Surface: Rigid surface of concrete or steel. *Times: 6 surfaces for each units; 2 times for each side.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Vibration IEC 60068-2-6 GB/T 2423.10	*Frequency: 10Hz~55Hz~10Hz(1min) *Total amplitude: 1.5mm *Test times: 6hrs. (Two hrs each in three mutually perpendicular directions)	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Adhesive Strength of Termination IEC60068-2-21 GB/T 2423.6	*Pressurizing force: 5N(≦0603); 10N(>0603) *Test time:10±1 sec	No remarkable damage or removal of the termination.

Bending test IEC 60068-2-21 GB/T 2423.29	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 2mm and then pressure shall be maintained for 10±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 at the room temperature.
Temperature cycle IEC60068-2-14 GB/T 2423.22	30 minutes at -40℃±2℃. 10~15 minutes at room temperature. 30minutes at +85℃±2℃. 10~15 minutes at room temperature. Total 100 continuous cycles 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 at the room temperature.
High temperature IEC 60068-2-2 GB/T2423.2	*Temperature：85°C±2°C. *Test duration：500+24/-0 hours. 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.
Humidity (steady conditions) IEC60068-2-3 GB/T 2423.3	*Humidity：85± 5%R.H. *Temperature：85±2°C *Time：500+24/-0 hrs. Measurement to be made after keeping at room temperature for 24±2 hrs ※ 200hrs measuring the first data then 300hrs data.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Low temperature IEC 60068-2-1 GB/T2423.1	*Temperature：-40°C±2°C *Test duration：500+24/-0 hours 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 at the room temperature.