

Mar 2021

# **Datasheet of LTCC Device**

## **Ceramic Antenna**

**2400 -2500 MHz**

**P/N: FLT31A2450-8027G**

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

## LTCC Antenna 3216 Size

### 1、Features

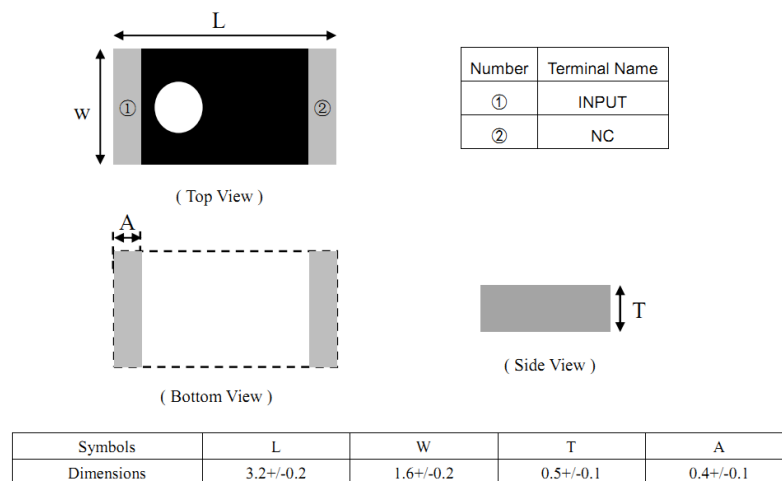
Antenna Frequency for 2400 - 2500MHz

### 2、Applications

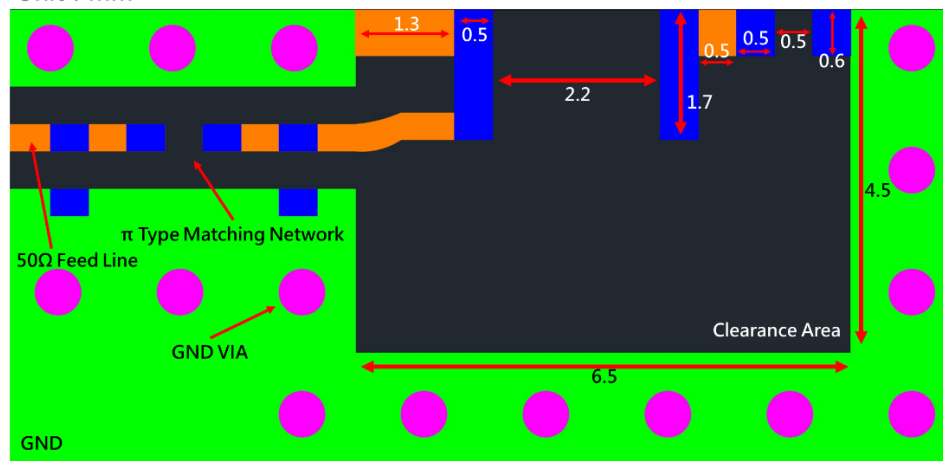
For Miniaturized Bluetooth System

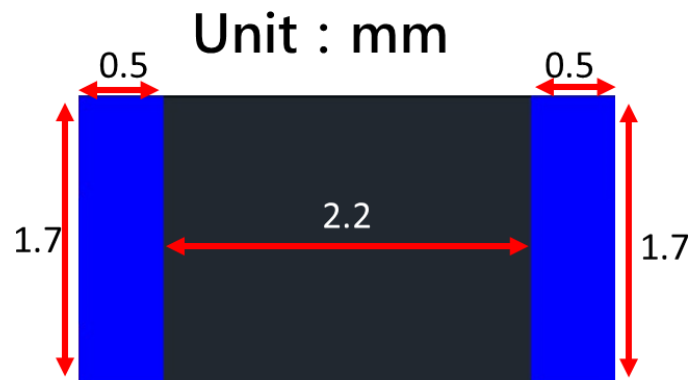
### 3、Shapes & Dimensions (mm)

\*. 注意事项：焊盘与焊盘间距大小，请依照下述尺寸来设计 **Layout**，否则容易造成频偏现象。

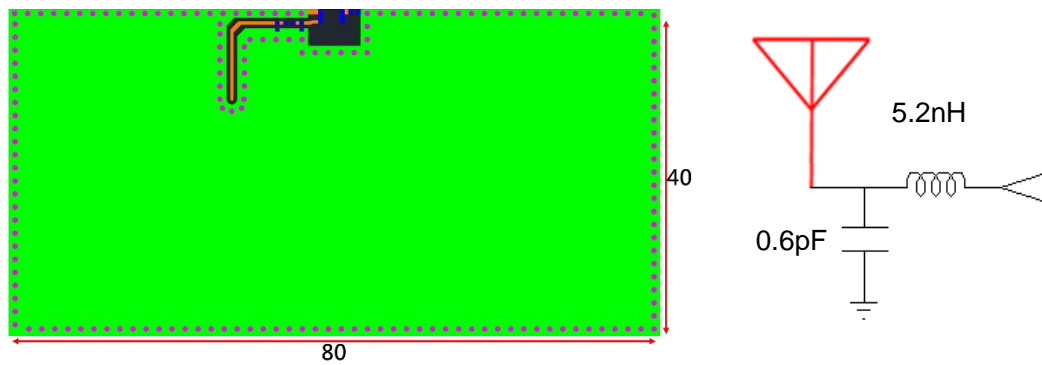


Unit : mm





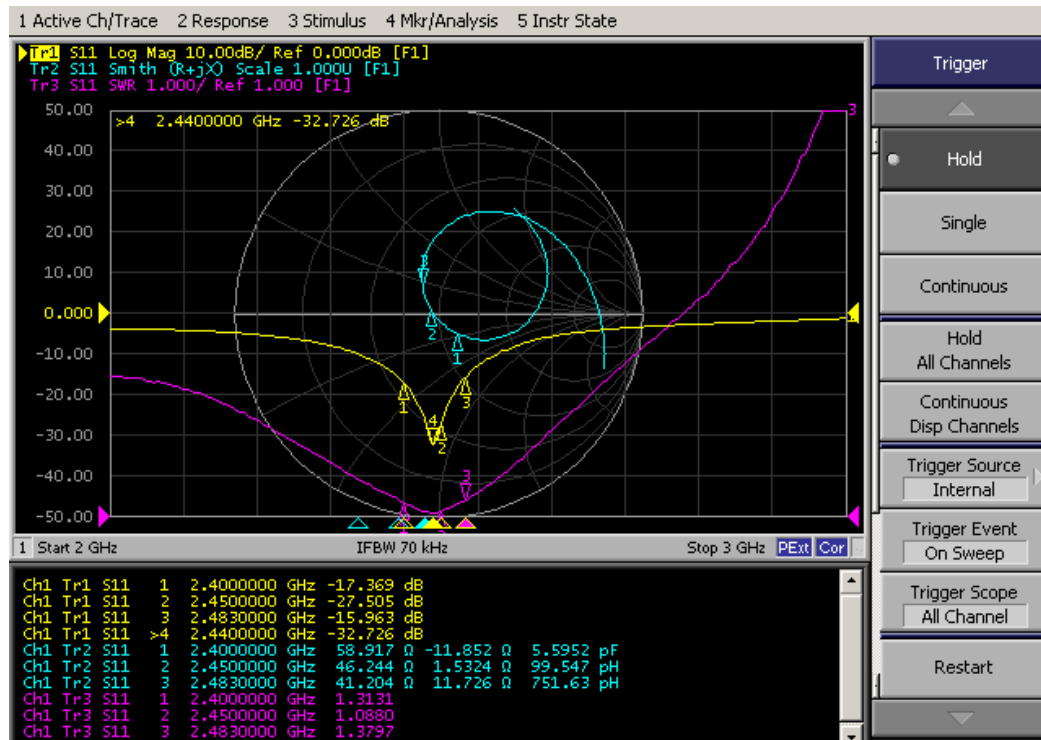
#### 4、Evaluation Board and Matching Circuits (mm)



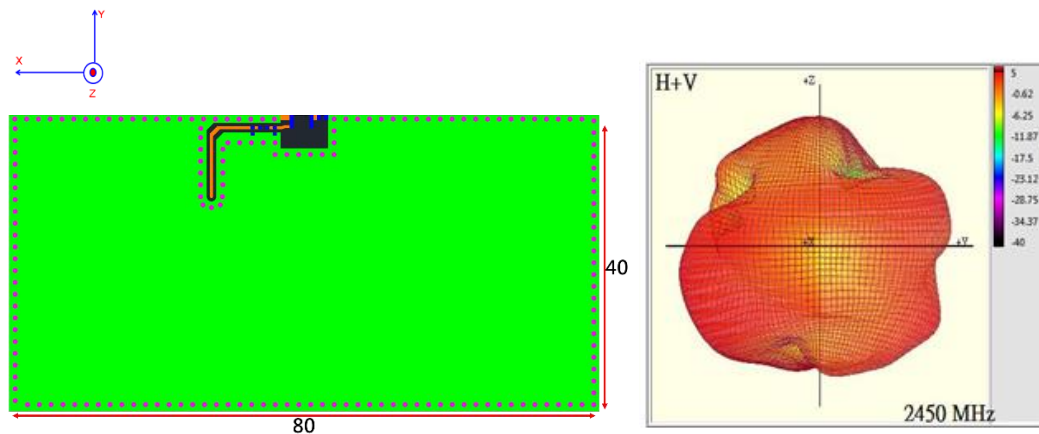
#### 5、Electrical Characteristics

Item	Specifications
Central Frequency	2400 -2500 MHz
Band Width	100 MHz
Peak Gain	4.11 dBi
V.S.W.R	≤2.0
Polarization	Linear
Azimuth Beam width	Omni-directional
Impedance	50 Ω

## 6、Characteristic curve



## 7、Radiation Pattern & Efficiency

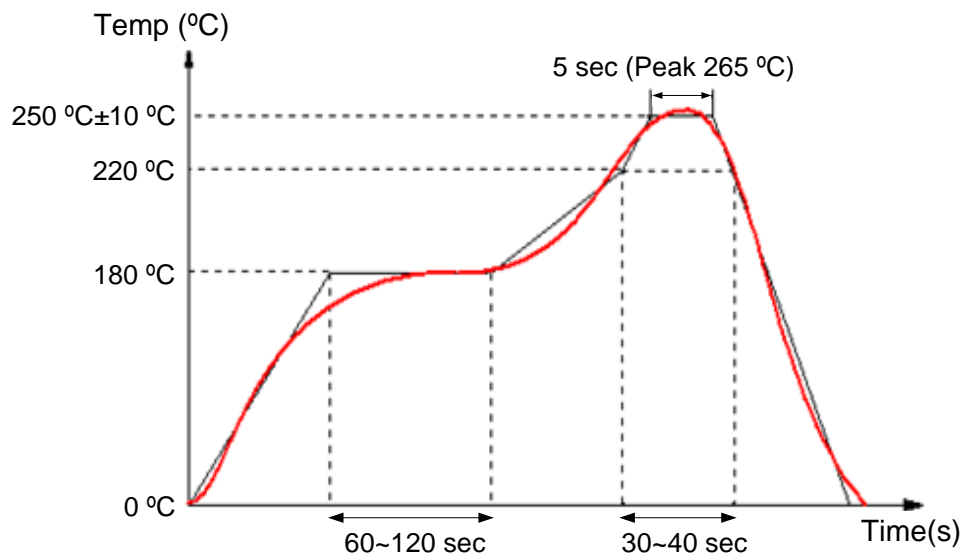


Frequency (MHz)	2400	2450	2500
Avg. Gain (dBi)	-1.89	-1.32	-1.51
Peck Gain (dBi)	1.77	4.11	2.55
Efficiency (%)	71.1	77.9	72.1

## 8、Post Dependability Tolerance

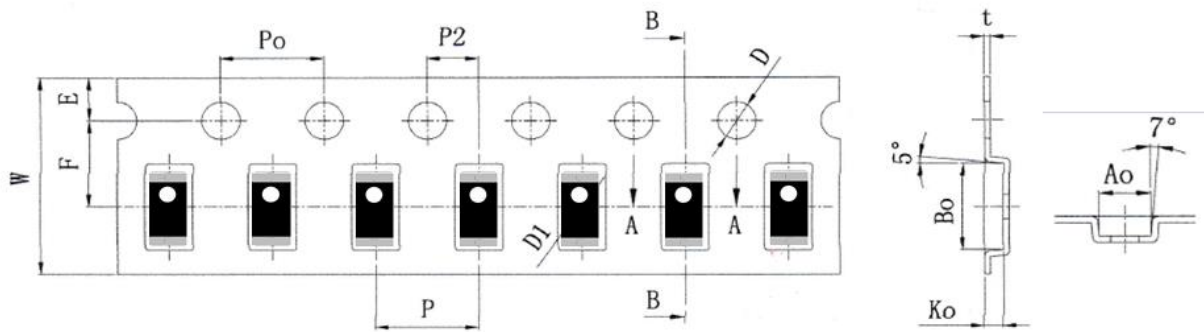
Item	Post Dependability Tolerance
Central Frequency	$\pm 5$ MHz
Band Width	$\pm 5$ MHz
Gain	$\pm 0.1$ dBi
V.S.W.R (in BW)	$\pm 0.1$

## 9、Reflow Soldering Standard Condition



10、Packaging and Dimensions 3216

Plastic Tape

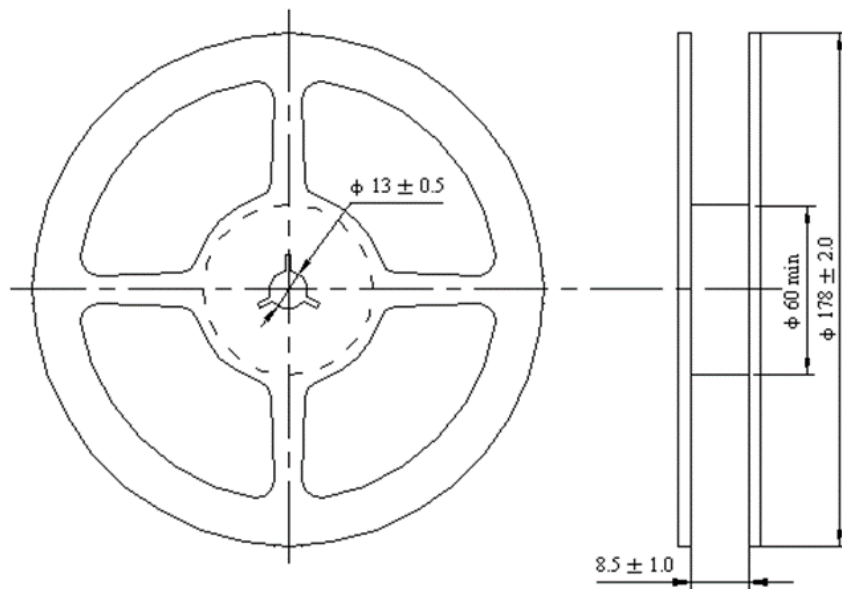


外觀	規格	公差
W	8.00	±0.10
P	4.00	±0.10
E	1.75	±0.10
F	3.50	±0.05
P2	2.00	±0.05
D	1.50	+0.10 -0.00
D1	1.00	±0.10
Po	4.00	±0.10
10Po	40.00	±0.20

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

## 10、Dependability Test

Test item	Test condition / Test method	Specification
Solderability IEC 60068-2-58 GB/T2423.28	*Solder bath temperature : $240\pm5^{\circ}\text{C}$ *Immersion time : $2\pm0.5$ sec Solder : Sn96.5 Ag3.0 Cu0.5 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 : $260\pm5^{\circ}\text{C}$ *Leaching immersion time : $10\pm1$ sec Solder : Sn96.5 Ag3.0 Cu0.5 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 : $120\sim150^{\circ}\text{C}$ , 1 minute. *Solder temperature : $260\pm5^{\circ}\text{C}$ *Immersion time : $10\pm1$ sec Solder : Sn 96.5 Ag 3.0 Cu0.5 for lead-free Measurement to be made after keeping at room temperature for $24\pm2$ 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 : $5\text{N}(\leq 0603)$ ; $10\text{N}(>0603)$ *Test time: $10\pm1$ 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°C±2°C. 10~15 minutes at room temperature. 30minutes at +85°C±2°C. 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.