

# Antenna Data Sheet

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## CS-2450-16-B

For 2400-2500MHz

1.6x0.8x0.4mm [EIA1608]

Manufacturer : Curve Technology Co., Ltd  
Add : Block A, 5F, Building 12, Instrument Park, Zibo High-tech Zone,  
Shandong Province, China

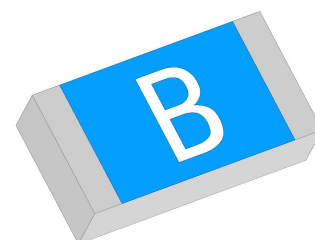
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## Feature

- Light weight, compact
- Wide bandwidth, low cost
- Built-in antenna with high gain
- Operating Temp. : -40°C~+85°C

## Application

- Bluetooth
- WLAN 2.4
- WiFi 5/6/6E
- UWB



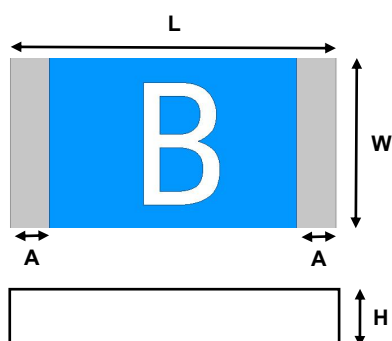
CS-2450-16-B

## Electrical Characteristics per line(TA=25°C)

| Parameter        | Specification | Units    |
|------------------|---------------|----------|
| Frequency Band   | 2400~2500     | MHz      |
| Polarization     | Linear        |          |
| *Peak Gain       | 2.78          | dBi      |
| *Peak Efficiency | 80.25         | %        |
| Impedance        | 50            | $\Omega$ |

Test condition: Test board size 70\*60 mm;  
Matching circuit: Pi matching circuit will be required.

## Product Dimension



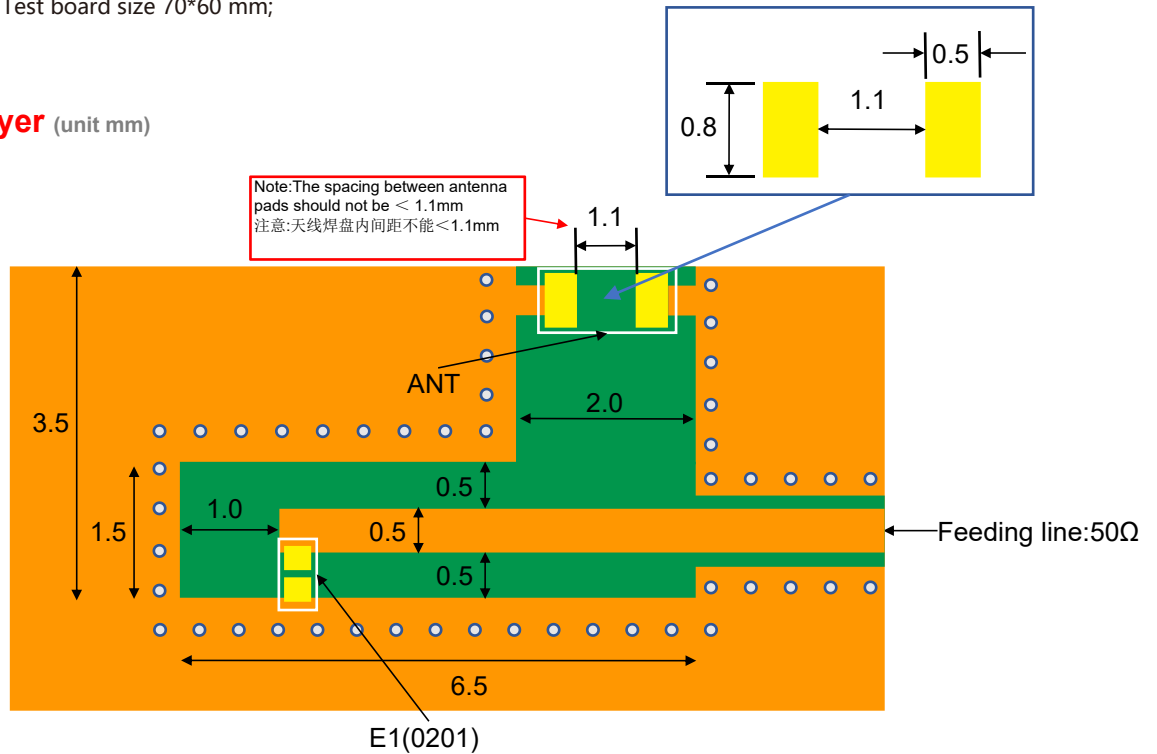
Units:mm

| L         | W         | H         | A        |
|-----------|-----------|-----------|----------|
| 1.60±0.20 | 0.80±0.20 | 0.40±0.10 | 0.2±0.07 |

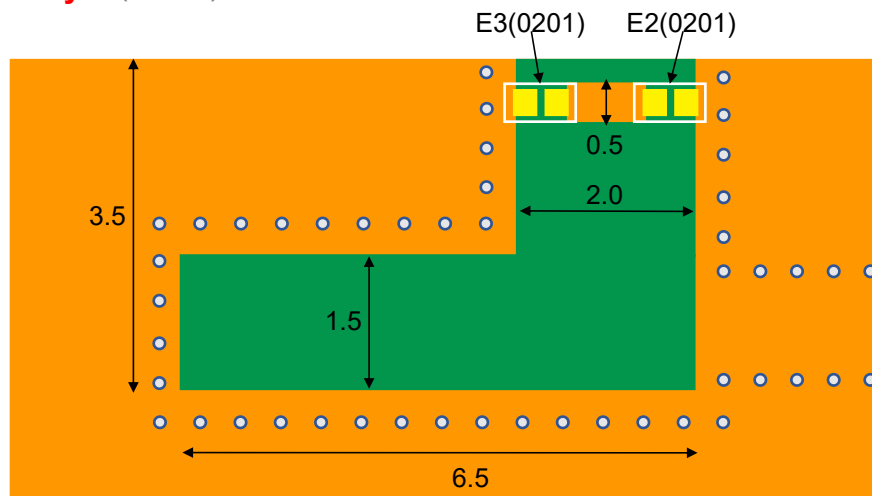
## Recommend PCB Layout1

Test condition: Test board size 70\*60 mm;

### Top Layer (unit mm)



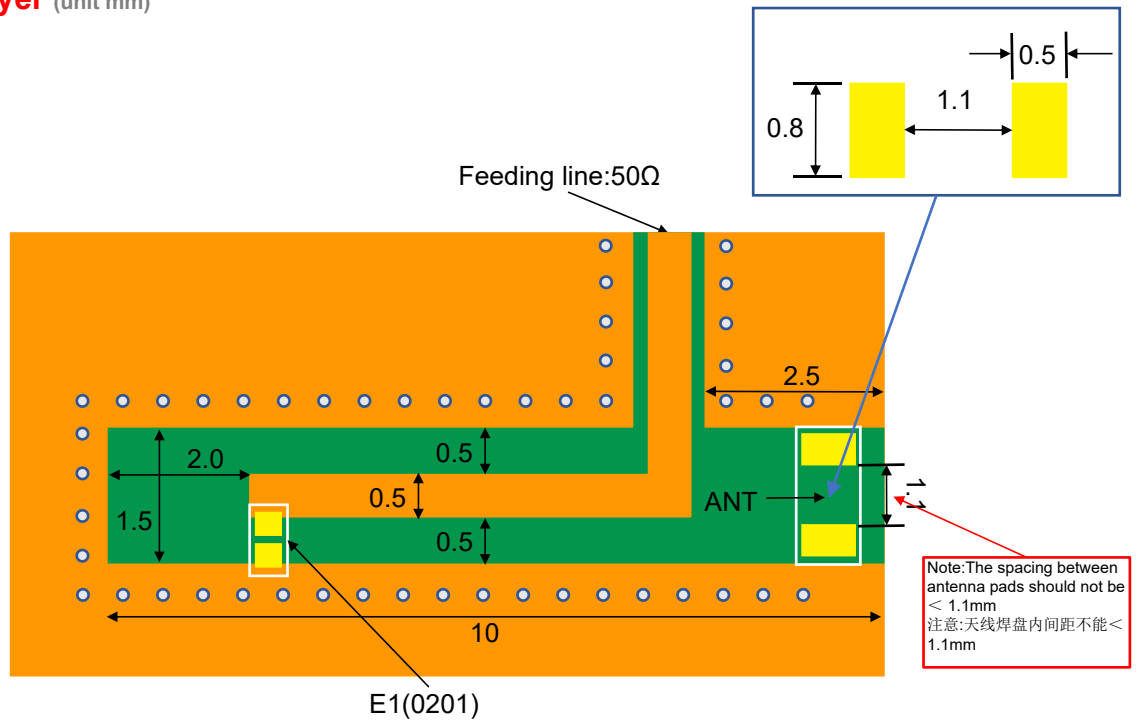
### Bottom Layer (unit mm)



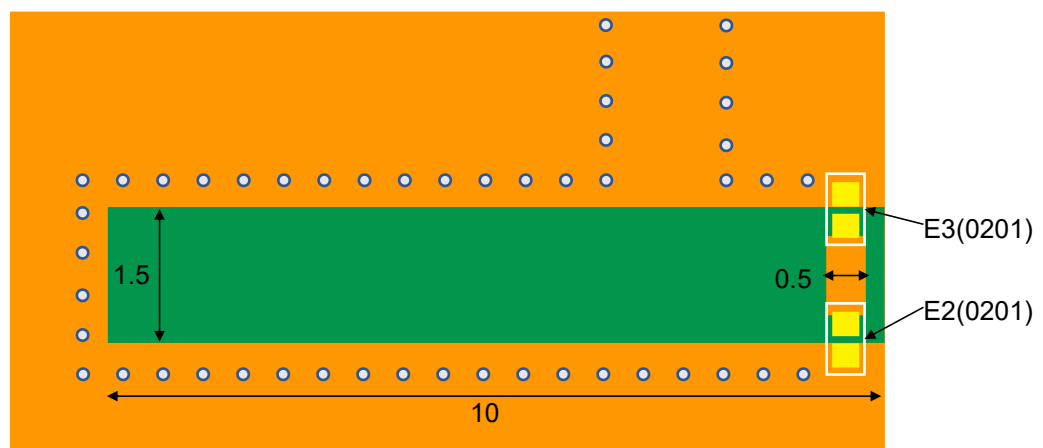
## Recommend PCB Layout2

Test condition: Test board size 70\*60 mm;

### Top Layer (unit mm)

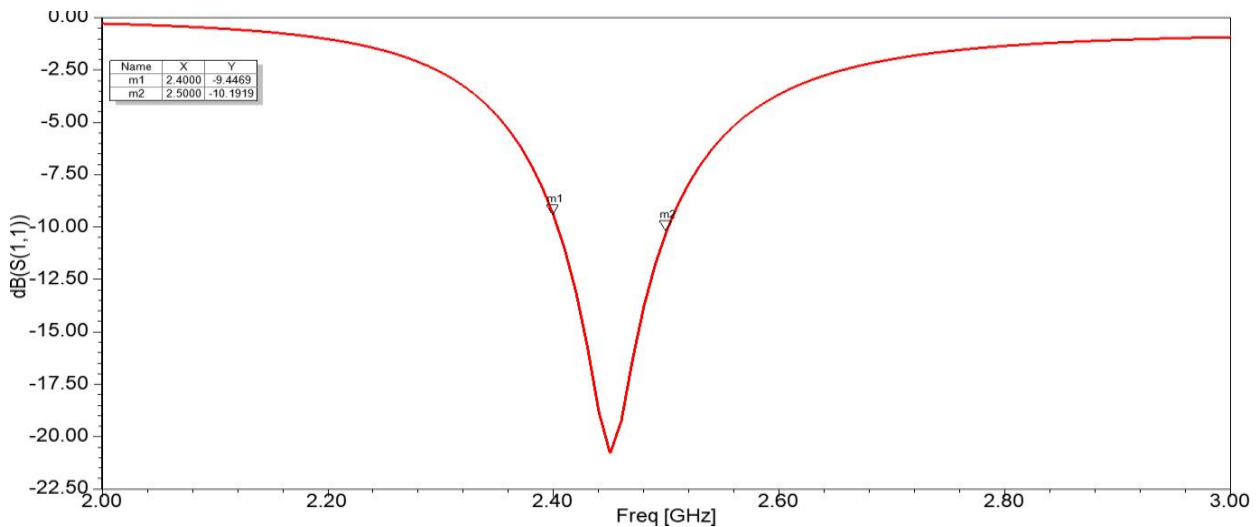


### Bottom Layer (unit mm)



## Typical Characteristics

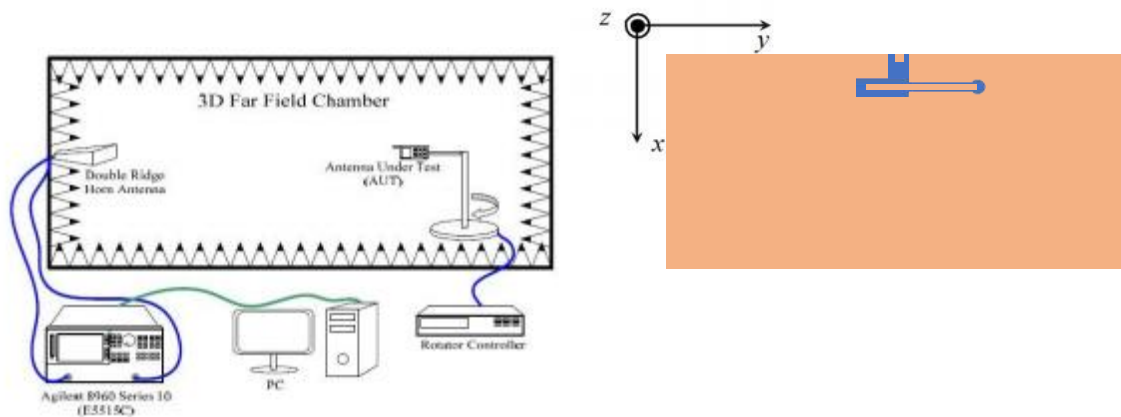
Fig. 1 Return Loss



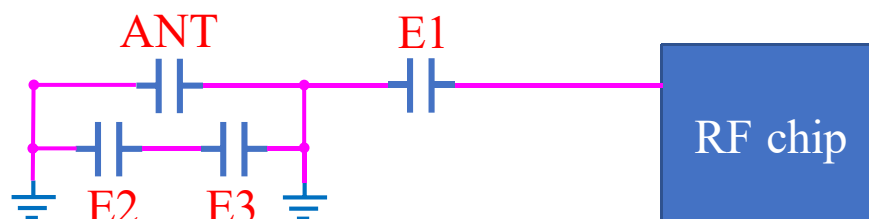
## Radiation Pattern

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.

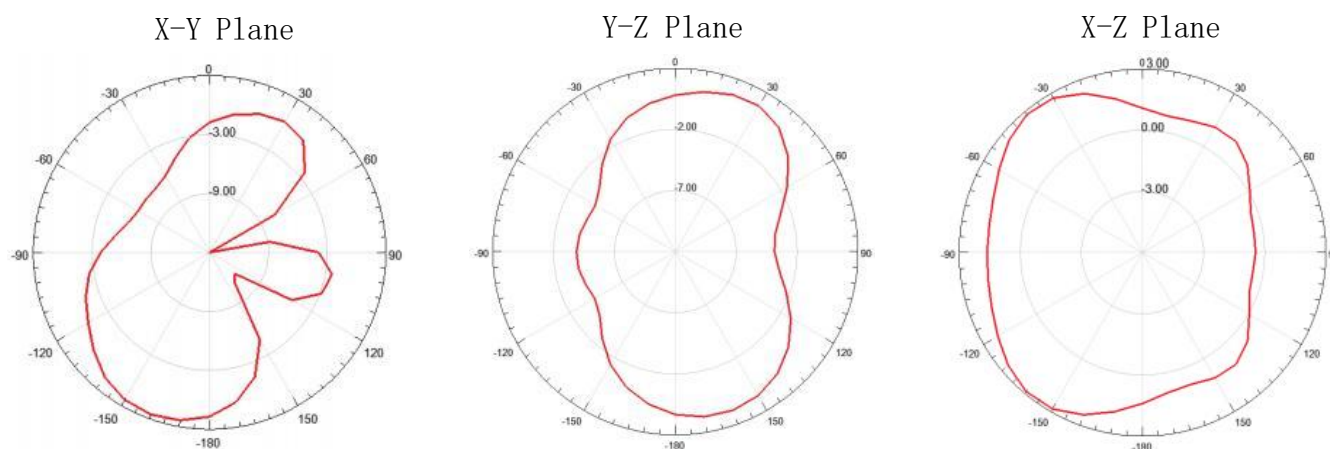
Fig.2 FAR-field Chamber



### Equivalent circuit:



### 2D Gain Pattern



### Radiation Performance:

| 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   |

| Item                        | Condition  | Specification  |
|-----------------------------|--|--|
| Thermal shock               | 1. 30±3 minutes at -40°C±5°C,<br>2. Convert to +105°C (5 minutes)<br>3. 30±3 minutes at +105°C±5°C,<br>4. Convert to -40°C (5 minutes)<br>5. Total 100 continuous cycles | No apparent damage<br>Fulfill the electrical spec. after test. |
| Humidity resistance         | 1. Humidity: 85% R.H.<br>2. Temperature: 85±5°C<br>3. Time: 1000 hours.  | No apparent damage<br>Fulfill the electrical spec. after test. |
| High temperature resistance | No apparent damage<br>Fulfill the electrical spec. after test.   | 1. Temperature: 150°C±5°C<br>2. Time: 1000 hours.              |
| Low temperature resistance  | 1. Temperature: -40°C±5°C<br>2. Time: 1000 hours.  | No apparent damage<br>Fulfill the electrical spec. after test. |
| Soldering heat resistance   | 1. Solder bath temperature : 260±5°C<br>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±5°C for 3±1 seconds.                                     | No apparent damage   |

## (2) Storage Condition

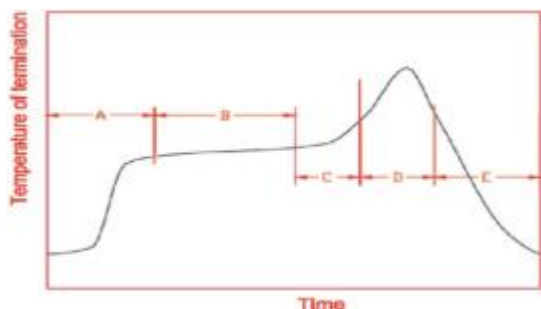
(a)At warehouse: The temperature should be within 0 ~ 30°C and humidity should be less than 60% RH.The product should be used within 1 year from the time of elivery.

(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°C to +85°C.

## Recommended Reflow Solder curve



|   |                                    |                                      |               |
|---|------------------------------------|--------------------------------------|---------------|
| A | 1 <sup>st</sup> rising temperature | The normal to Preheating temperature | 30s to 60s    |
| B | Preheating                         | 140°C to 160°C                       | 60s to 120s   |
| C | 2 <sup>nd</sup> 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       |
| E | Regular cooling                    | if 260°C                             | 20s~40s       |
|   |                                    | 200°C to 100°C                       | 1°C/s ~ 4°C/s |

\*reference: J-STD-020C

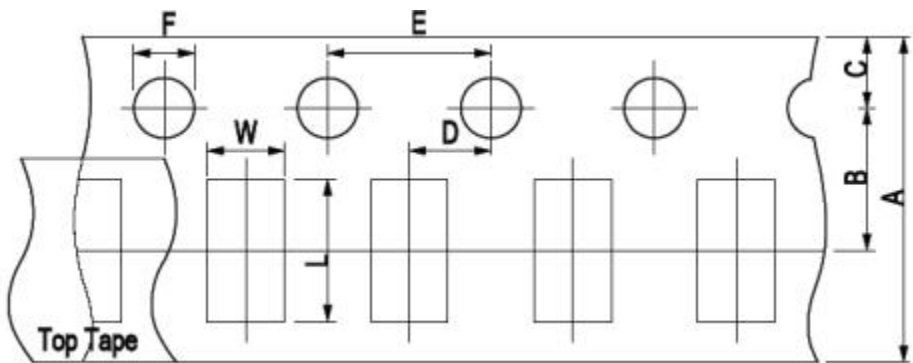
( 1) Soldering Gun Procedure

- 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.

Package Information



| A        | B          | C        | D         | E        | F        | L         | W         |
|----------|------------|----------|-----------|----------|----------|-----------|-----------|
| 8.00±0.3 | 3.50± 0.05 | 1.75±0.1 | 2.00±0.05 | 4.00±0.1 | 1.50±0.1 | 2.30± 0.1 | 1.55± 0.1 |

Part Number System

CS - 2450 - 16-B

External Dimensions L\*W (mm) 1.6\*0.8  
 Central Frequency 2450 MHz  
 Product Series: Chip Antenna

Marking





## 订货信息 Order Information

| Device       | Package | Net Weight | Carrier   | Quantity | HSF Status     |
|--------------|---------|------------|-----------|----------|----------------|
| CS-2450-16-B | 1608    | 0.002g     | Tape&Reel | 5000pcs  | RoHS compliant |

## Revision history

| Date       | Revision | Description of changes |
|------------|----------|------------------------|
| 2023-01-03 | 1.0      | First Version          |
| 2023-11-15 | 1.1      | Add PCB Layout         |

The contents of this data sheet are subject to change without notice .  
Please confirm the specifications and delivery conditions when placing your order.

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