

ANTENNA DATA SHEET

CS-2450-16-B

For 2400-2500MHz

1.6x0.8x0.4mm [EIA1608]

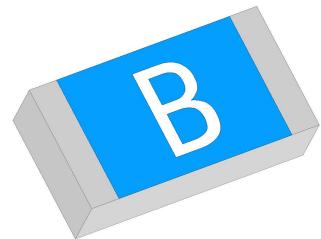
Antenna type: Chip antenna

Peak Gain: 2.78dBi



Feature

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



CS-2450-16-B

Application

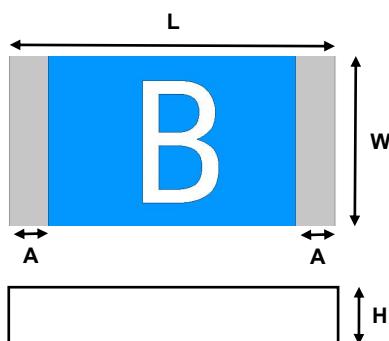
- Bluetooth
- WLAN 2.4
- WiFi 5/6/6E
- UWB

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 | Ω |

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

Product Dimension

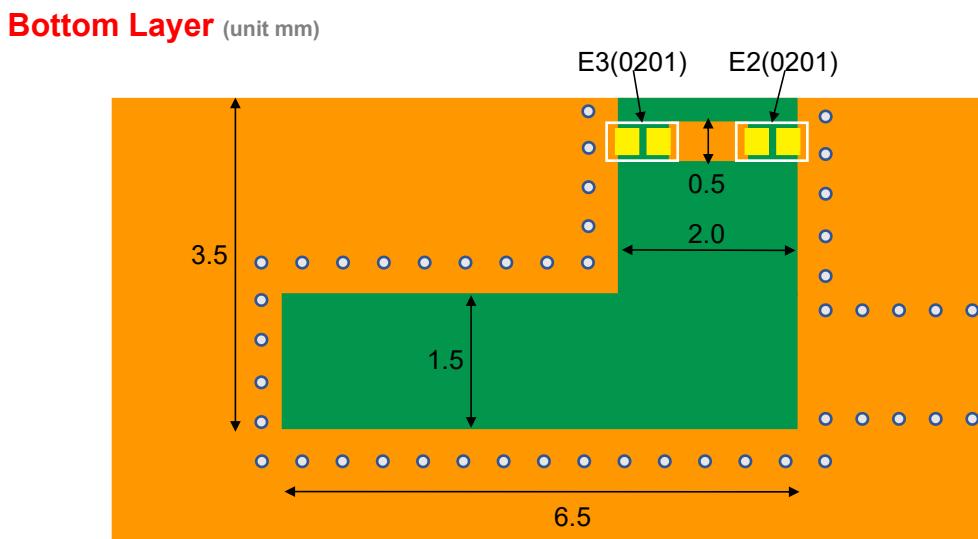
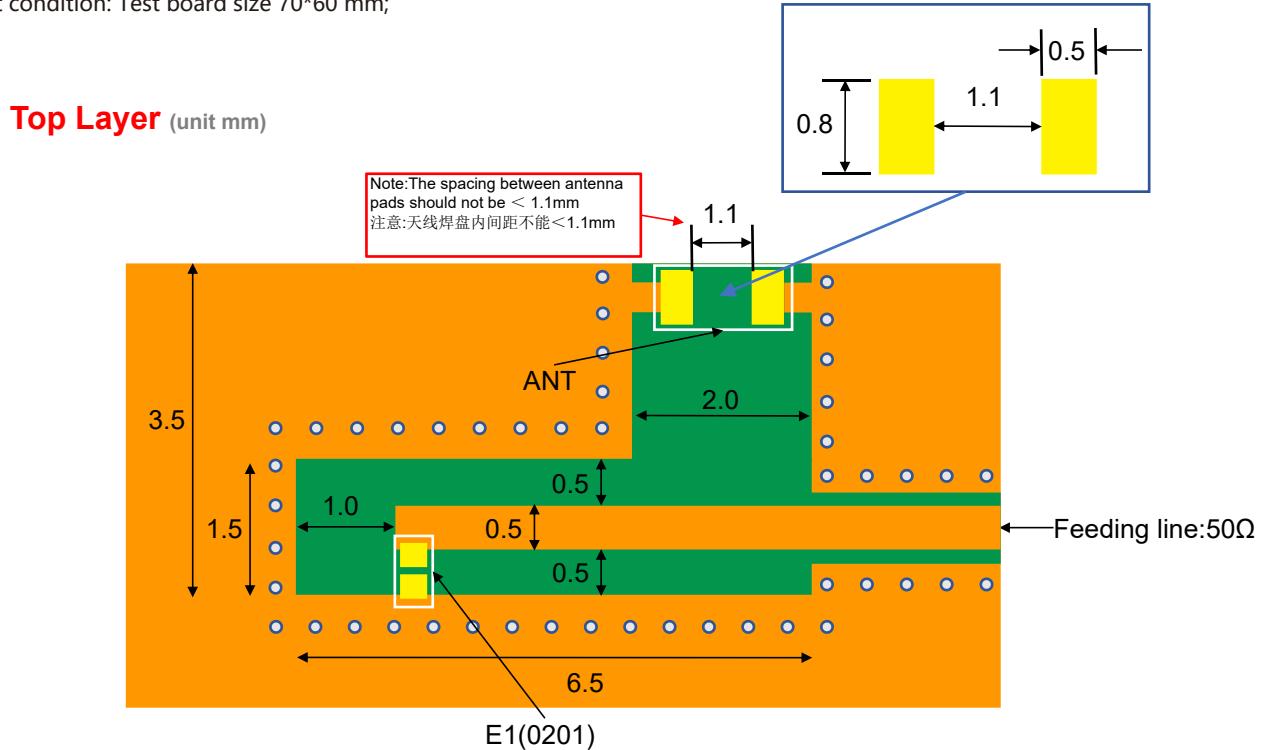


Units:mm

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

Recommend PCB Layout1

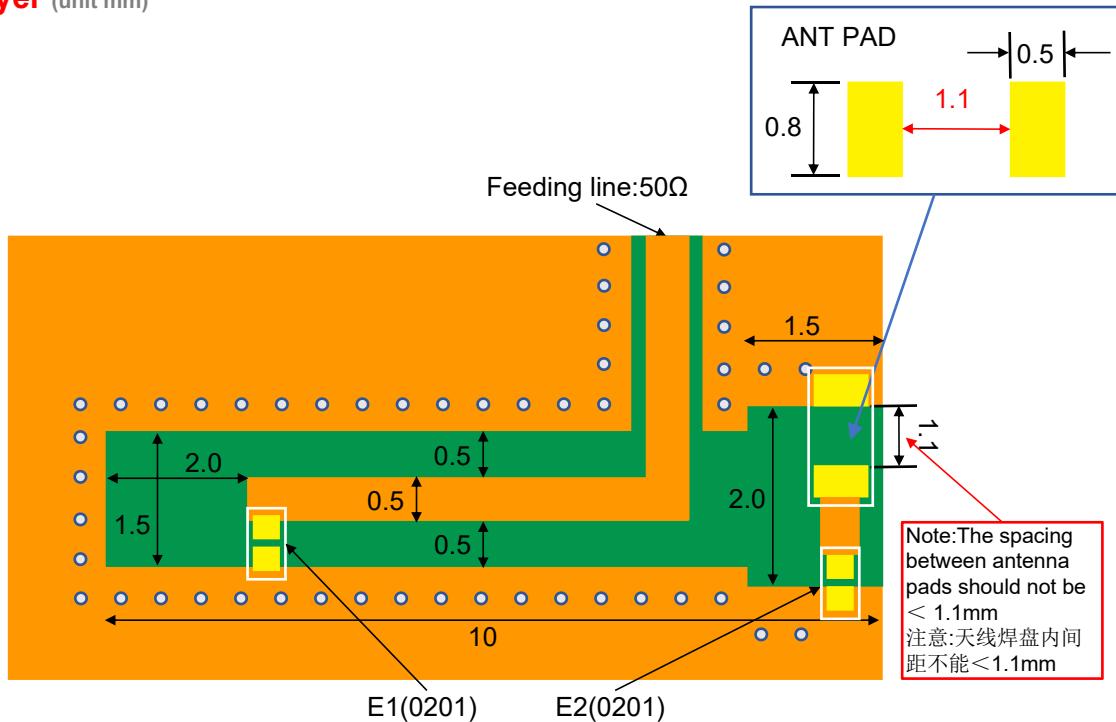
Test condition: Test board size 70*60 mm;



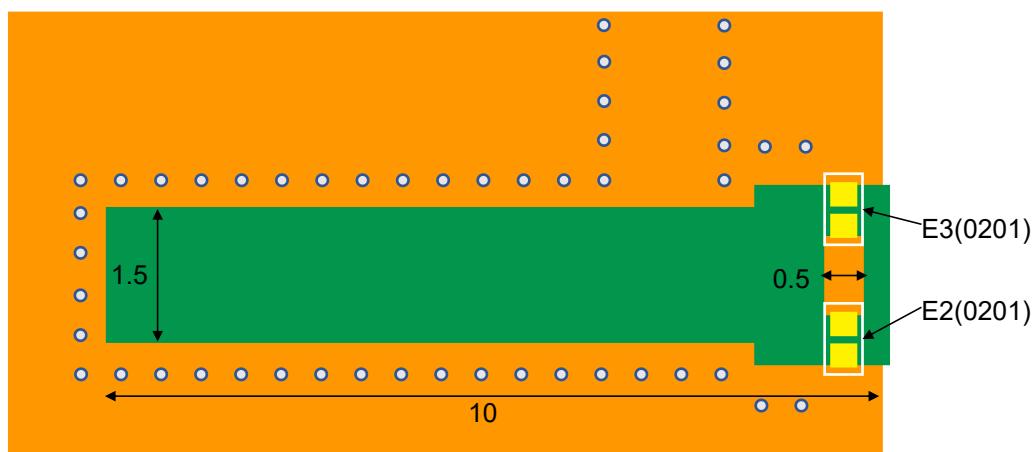
Recommend PCB Layout2

Test condition: Test board size 70*60 mm;

Top Layer (unit mm)

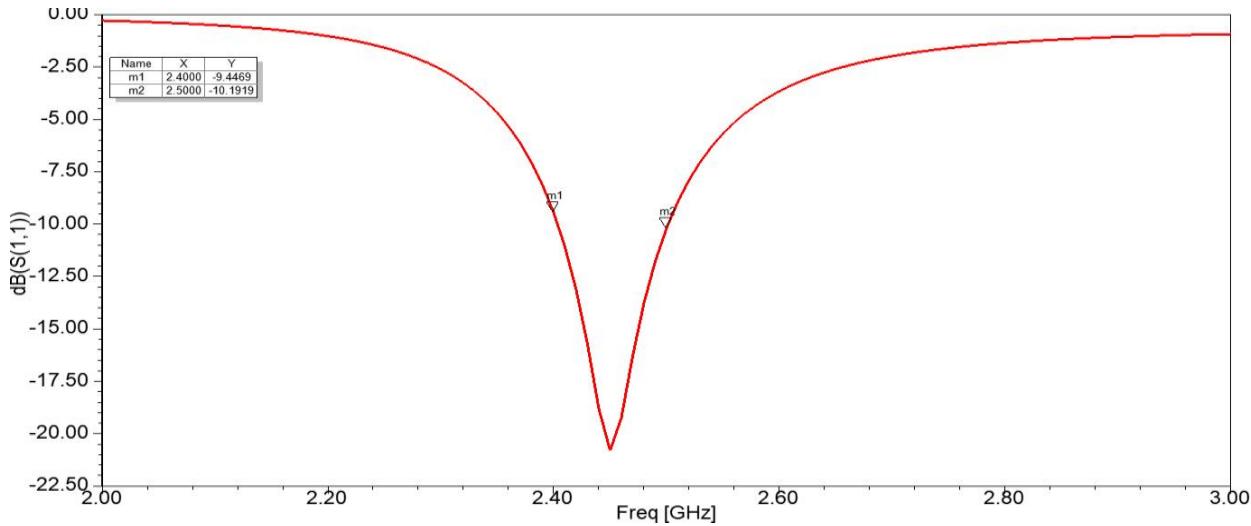


Bottom Layer (unit mm)



Typical Characteristics

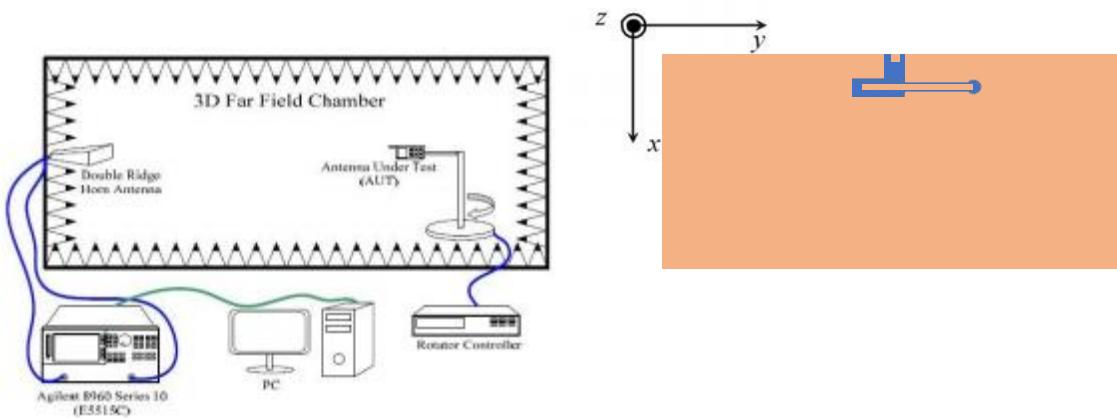
Fig. 1 Return Loss



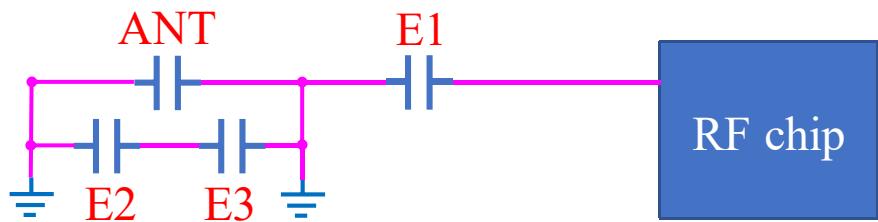
Radiation Pattern

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.

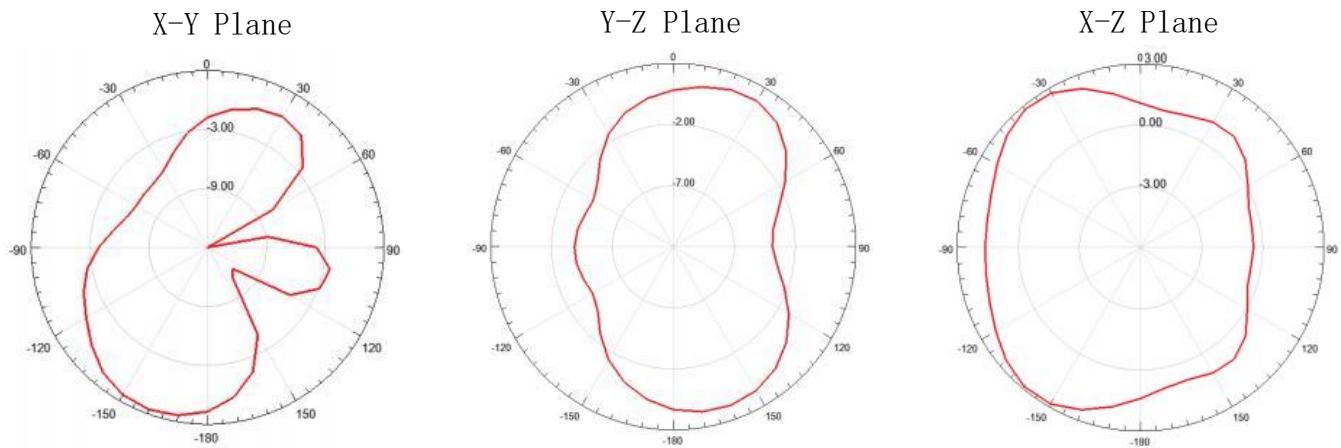
Fig.2 FAR-field Chamber



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 $-40^{\circ}\text{C}\pm5^{\circ}\text{C}$, 2. Convert to $+105^{\circ}\text{C}$ (5 minutes) 3. 30 ± 3 minutes at $+105^{\circ}\text{C}\pm5^{\circ}\text{C}$, 4. Convert to -40°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: $85\pm5^{\circ}\text{C}$ 3. Time: 1000 hours. | No apparent damage Fulfill the electrical spec. after test. |
| High temperature resistance | No apparent damage Fulfill the electrical spec. after test. | 1. Temperature: $150^{\circ}\text{C}\pm5^{\circ}\text{C}$ 2. Time: 1000 hours. |
| Low temperature resistance | 1. Temperature: $-40^{\circ}\text{C}\pm5^{\circ}\text{C}$ 2. Time: 1000 hours. | No apparent damage Fulfill the electrical spec. after test. |
| Soldering heat resistance | 1. Solder bath temperature : $260\pm5^{\circ}\text{C}$ 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 $245\pm5^{\circ}\text{C}$ for 3 ± 1 seconds. | No apparent damage |

(2) Storage Condition

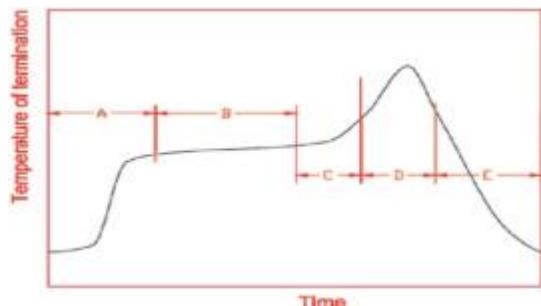
(a)At warehouse: The temperature should be within $0 \sim 30^{\circ}\text{C}$ and humidity should be less than 60% RH.The product should be used within 1 year from the time of elivery.

(b)On board: The temperature should be within $-40 \sim 85^{\circ}\text{C}$ and humidity should be less than 85% RH.

(3) Operating Temperature Range

Operating temperature range : -40°C to $+85^{\circ}\text{C}$.

Recommended Reflow Solder curve



| | | | |
|---|------------------------------------|------------------------------------------------|------------------------------------------------|
| 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 | # 220°C | 50s~60s |
| | | # 230°C | 40s~50s |
| | | # 240°C | 30s~40s |
| | | # 250°C | 20s~40s |
| | | # 260°C | 20s~40s |
| E | Regular cooling | 200°C to 100°C | $1^{\circ}\text{C/s} \sim 4^{\circ}\text{C/s}$ |

*reference: J-STD-020C

(1) Soldering Gun Procedure

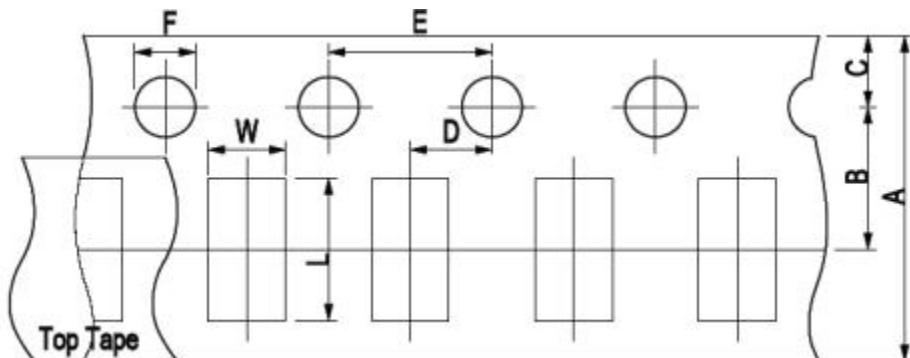
Note the follows, in case of using solder gun for replacement.

- (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

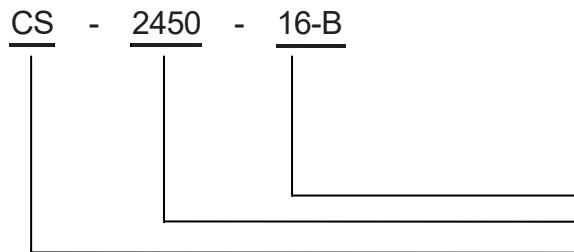
Note that excess of soldering volume will easily get crack the body of this product.

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



External Dimensions L*W (mm) 1.6*0.8

Central Frequency 2450 MHz

Product Series: Chip Antenna

Marking

