

# SMD CERAMIC ANTENNA

## Data Sheet

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HZ2012WC02  
CS-2450-21-C

For 2400-2483MHz  
2.0x1.2mm [EIA2012]

深圳市海柘科技有限公司  
Shenzhen Haizhe Technology Co., Ltd.  
B-1507, Haisong Building, Tairan 9th Road, Chegongmiao, Futian  
District, Shenzhen, China

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## 特征 Feature

- 重量轻，结构紧凑 Light weight, compact
- 宽带大，低成本 Wide bandwidth, low cost
- 高增益内置天线 Built-in antenna with high gain
- 工作温度 Operating Temp.: -40°C ~ +85°C

## 应用 Application

- 蓝牙,无线局域网,移动电视 Bluetooth, Wi eless LAN, Mobile TV
- 家用射频系统 Home RF system, etc



CS-2450-21-C

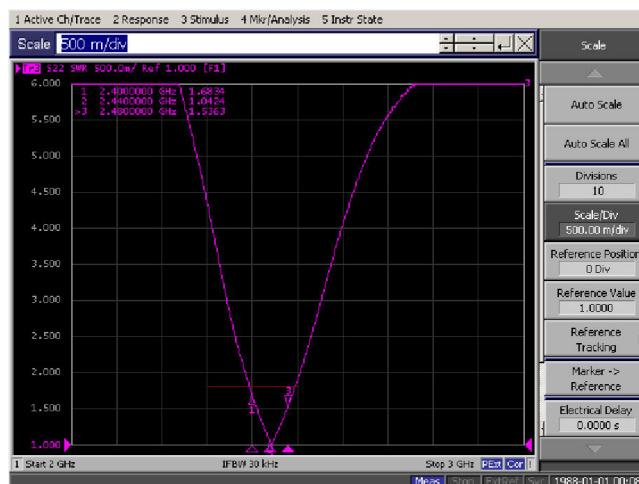
## 电气特性 Electrical Characteristics per line(TA=25°C)

| 参数Parameter           | 规格Specification | 单位Units  |
|-----------------------|-----------------|----------|
| 频带 Frequency Band     | 2400~2483       | MHz      |
| 极化 Polarization       | Linear          |          |
| *峰值增益 Peak Gain       | 2.36            | dBi      |
| *峰值效率 Peak Efficiency | 72.5%           | %        |
| 阻抗 Impedance          | 50              | $\Omega$ |

\*测试条件：测试板尺寸98×65mm；匹配电路： $\pi$ 型匹配电路。Test condition: Test board size 98\*65 mm; Matching circuit: Pi matching circuit will be required

## 典型特征 Typical Characteristics

Fig.1 驻波比 VSWR

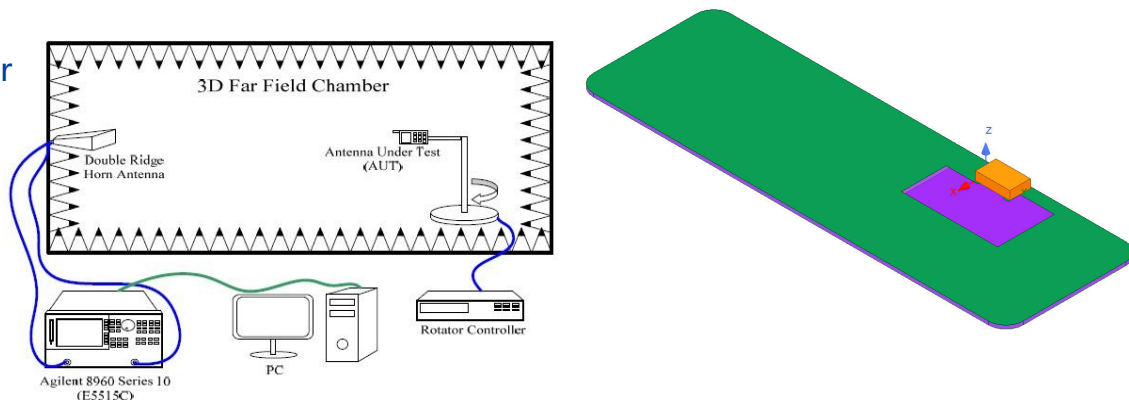


## 辐射模式 Radiation Pattern

增益模式是在暗室进行测试的，被测件放在桌肩位置，用标准的喇叭天线和矢量网络分析仪来收集数据。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.

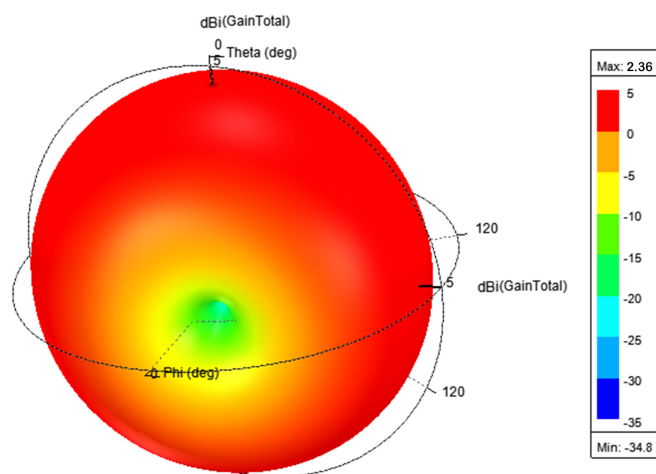
Fig.2 暗室示意图

FAR-field Chamber

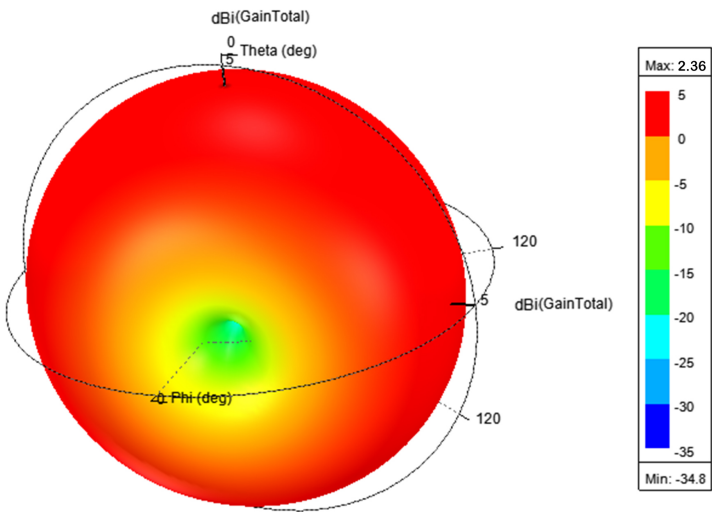


### 3D 增益模式

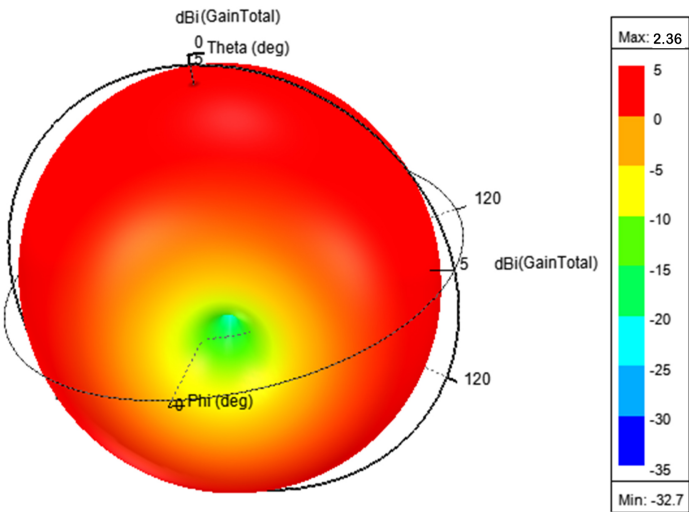
### 3D Gain Pattern (2400 MHz)



3D 增益模式  
3D Gain Pattern (2450 MHz)



3D 增益模式  
3D Gain Pattern (2500 MHz)



| 项目Item                              | 环境Condition                                                                                                                                                              | 规格Specification                                                |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| 热冲击<br>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. |
| 抗湿性<br>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. |
| 耐高温性<br>High temperature resistance | No apparent damage<br>Fulfill the electrical spec. after test.                                                                                                           | 1. Temperature: 150°C±5°C<br>2. Time: 1000 hours.              |
| 低温电阻<br>Low temperature resistance  | 1. Temperature: -40°C±5°C<br>2. Time: 1000 hours.                                                                                                                        | No apparent damage<br>Fulfill the electrical spec. after test. |
| 耐焊接热性<br>Soldering heat resistance  | 1. Solder bath temperature : 260±5°C<br>2. Bathing time: 10±1 seconds                                                                                                    | No apparent damage                                             |
| 焊锡性<br>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) 储存环境 Storage Condition

(a)仓库：温度应在0 ~ 30°C之间，湿度应小于60%湿度，产品应在交货之日起1年内使用。

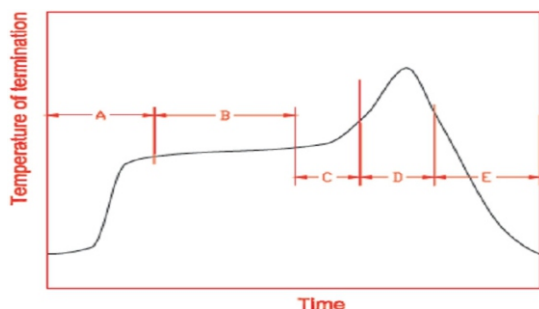
At warehouse: The temperature should be within 0 ~ 30°C and humidity should be less than 60% RH. The product should be used within 1 year from the time of elivery.

(b)在板：温度应在40 ~ 85°C之间，湿度应小于85%湿度。On board: The temperature should be within -40~85°C and humidity should be less than 85% RH.

## (3) 工作环境温度 Operating Temperature Range

工作温度范围：-40°C to +85°C。 Operating temperature range : -40°C to +85°C.

## 推荐回流焊接曲线 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) 电烙铁的使用 Soldering Gun Procedure

以下注意事项仅针对使用电烙铁进行个别器件更换。

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

(a) 使用小于30W的电烙铁，温度不高于350℃，焊接时间小于3秒。

The tip temperature must be less than 350°C for the period within 3 seconds by using soldering gun under 30 W.

(b) 烙铁不可直接接触器件本体。

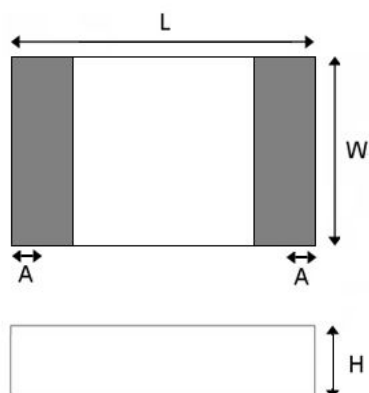
The soldering gun tip shall not touch this product directly.

### (2) 焊锡量 Soldering Volume

注意焊接过程中过多的焊锡量会损害器件本体。

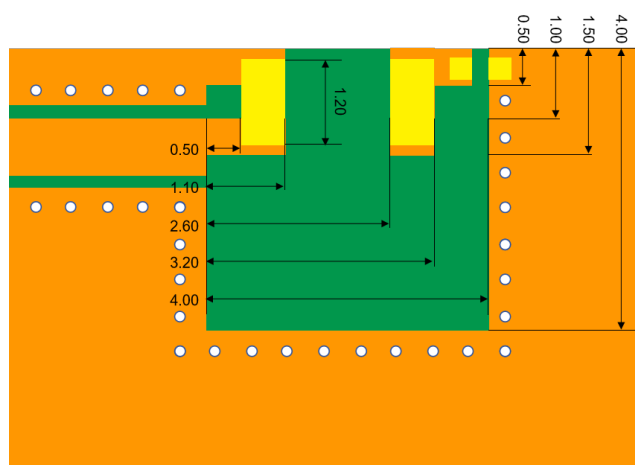
Note that excess of soldering volume will easily get crack the body of this product.

## 产品尺寸 Product Dimension

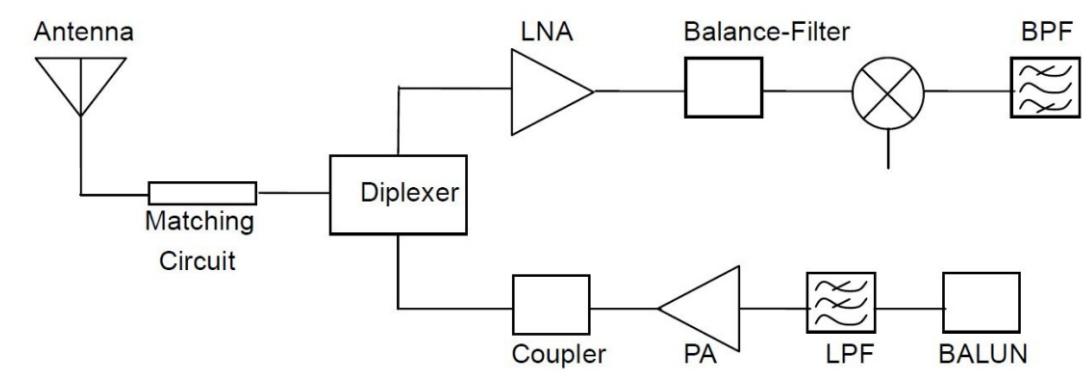


| L       | W       | H        | A        |
|---------|---------|----------|----------|
| 2.0±0.3 | 1.2±0.3 | 0.55±0.1 | 0.3 ±0.1 |

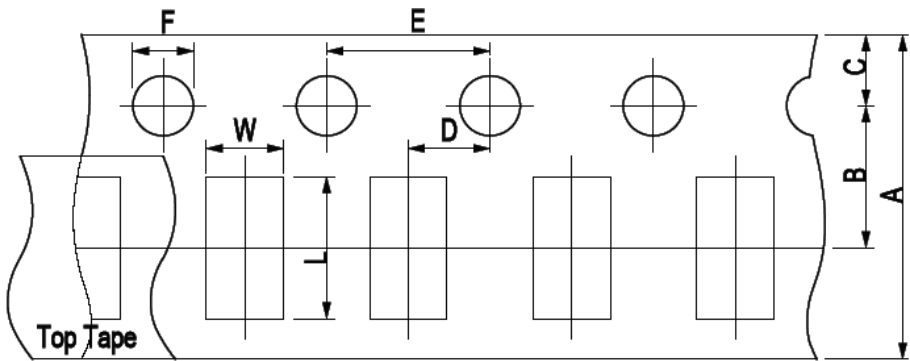
## 推荐焊盘&Evaluation Board



应用环境 Application Guide

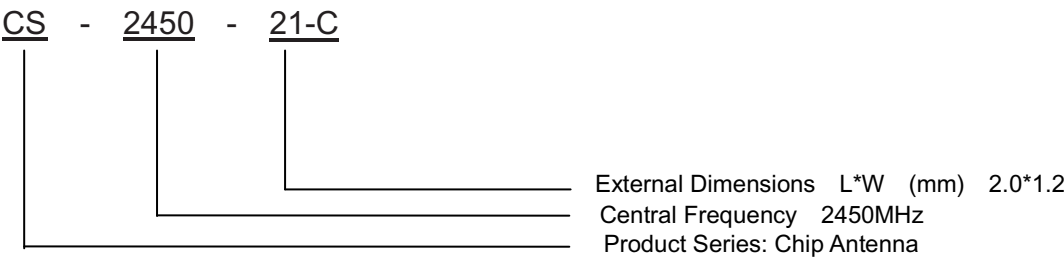


包装信息 Package Information



|          |            |          |           |          |          |           |           |
|----------|------------|----------|-----------|----------|----------|-----------|-----------|
| 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 |

编码规则 Part Number System



丝印 Marking



## 订货信息 Order Information

| 设备<br>Device | 包装<br>Package | 净重<br>Net Weight | 运送方式<br>Carrier | 数量<br>Quantity | 认证<br>HSF Status |
|--------------|---------------|------------------|-----------------|----------------|------------------|
| CS-2450-21-C | 2012          | 0.0014g          | Tape&Reel       | 5000pcs        | RoHS compliant   |

## 版本信息 Revision history

| 日期/Date    | 版本号/Revision | 版本描述/Description of changes |
|------------|--------------|-----------------------------|
| 2021-11-5  | 1.0          | First Version               |
| 2022-04-2  | 2.0          | Second Version              |
| 2023-12-13 | 2.1          | Modify 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.