

# SMD Antenna Specification

**OverAir<sup>®</sup> SMD Antenna  
Series, RoHS Compliant**

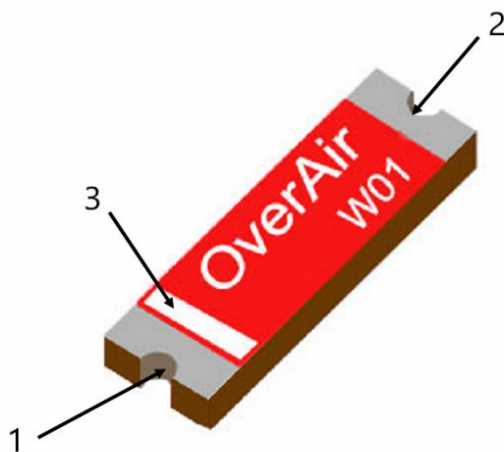
**PN: OA-W01**

**Features**

1. Compact SMD patch antenna with dimensions only  $8.0 \times 3.0 \times 1.0 \text{ mm}^3$ .
2. Low energy loss and high antenna efficiency.
3. High stability under varying temperature and humidity conditions.

**Applications**

1. Antenna applications for 2.4GHz bands.
2. Other antenna applications operating in the 2.4 GHz frequency bands.

**Construction**

1. Antenna signal feed terminal
2. Antenna soldering fixing terminal
3. Antenna feed terminal marker

**Dimensions**

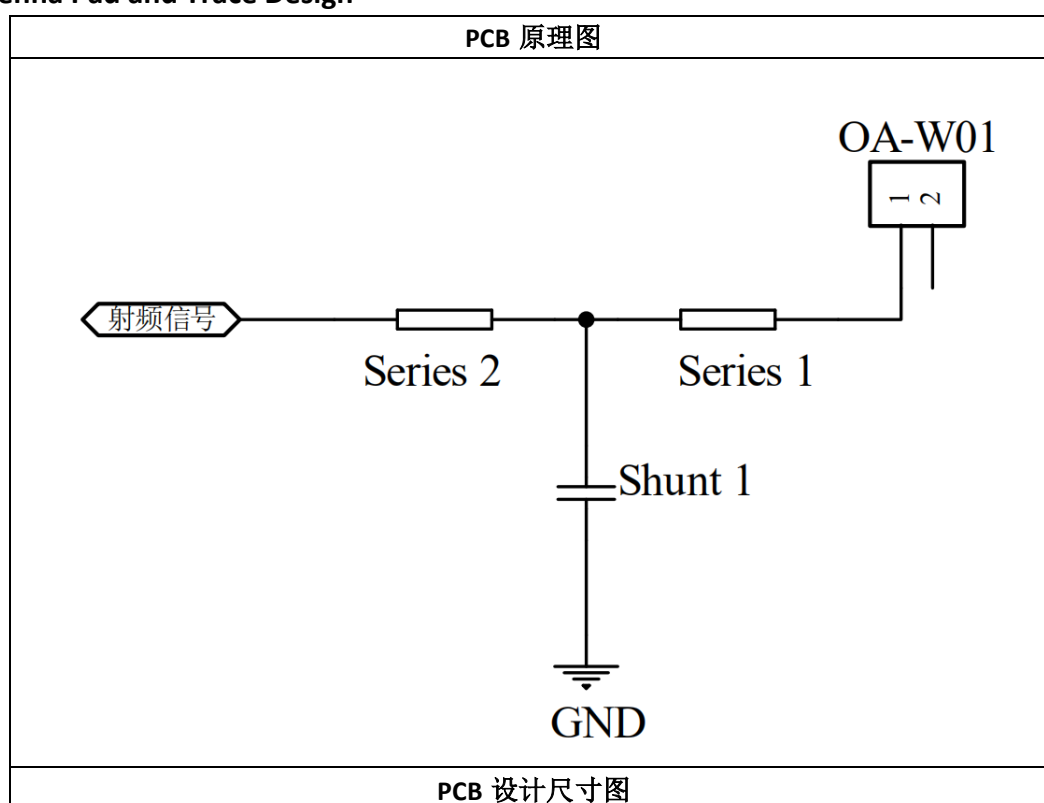
| 三视图 | 符号 | 尺寸(mm)        |
|-----|----|---------------|
|     | L  | $8.0 \pm 0.1$ |
|     | w  | $3.0 \pm 0.1$ |
|     | T  | $1.0 \pm 0.1$ |
|     | a  | $0.6 \pm 0.1$ |

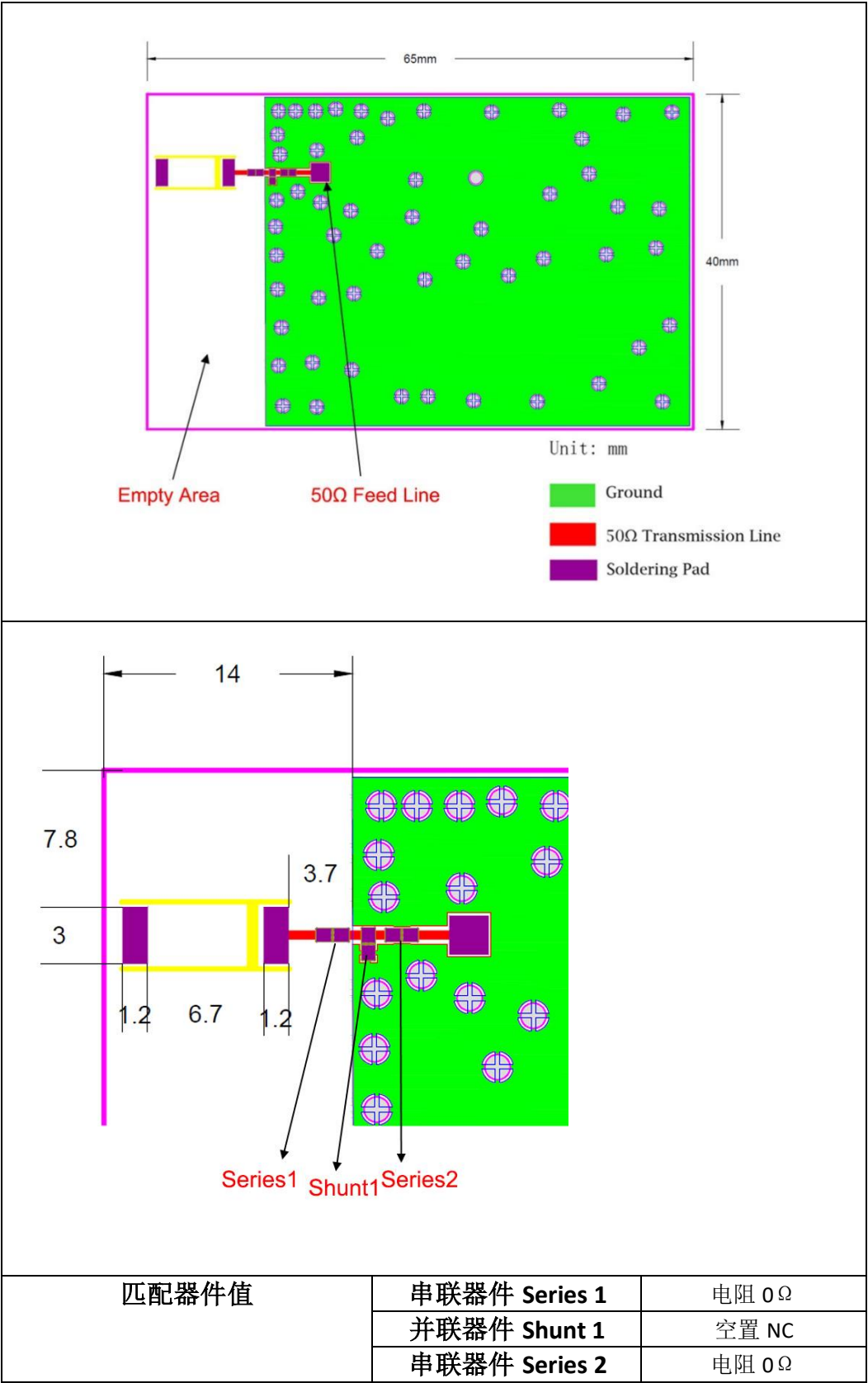
## 电气特性

| OA-W01                     | Specification |
|----------------------------|---------------|
| 工作频率范围 Working Frequency   | 2400-2500MHz  |
| 阻抗 Impedance               | 50 $\Omega$   |
| 增益 Gain(dBi)               | 6.1dBi        |
| 驻波比 VSWR                   | <2            |
| 工作温度 Operation Temperature | -40℃~+85℃     |
| 可承受功率 Power Capacity       | 3W            |

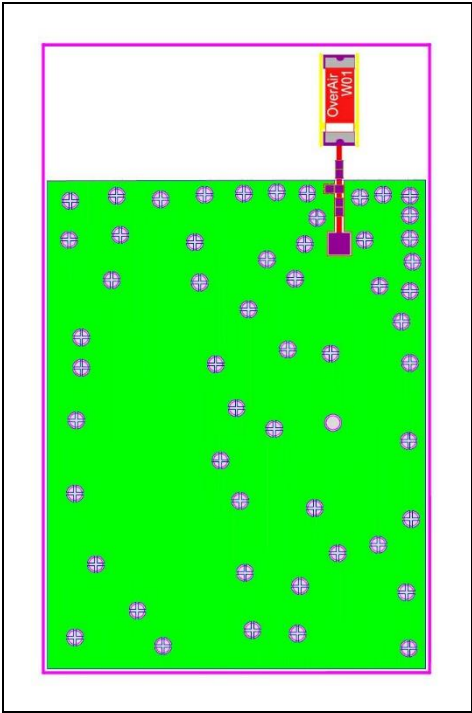
天线工作频率需要通过阻抗匹配器件调试来实现.

## Antenna Pad and Trace Design

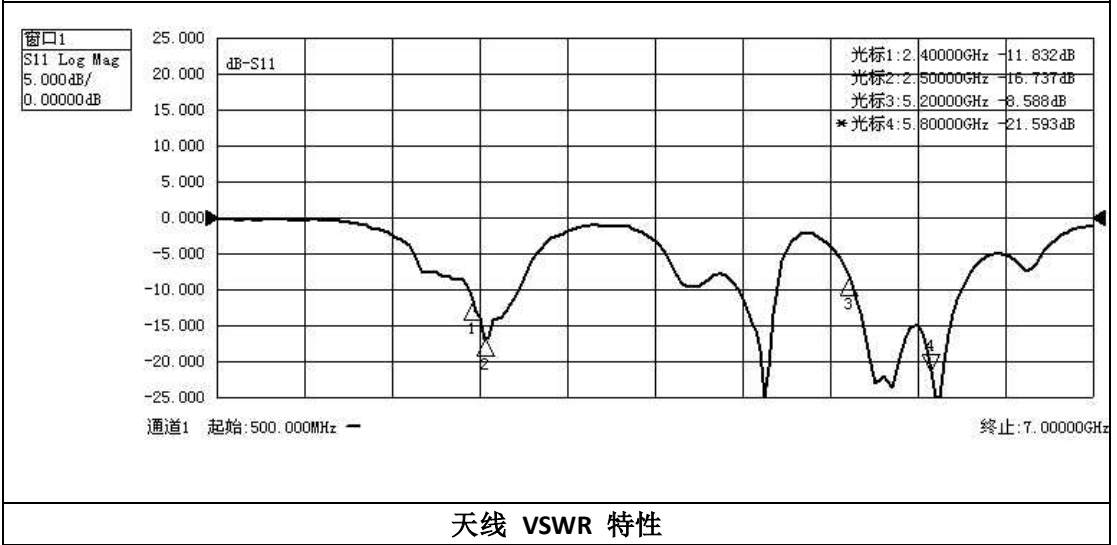


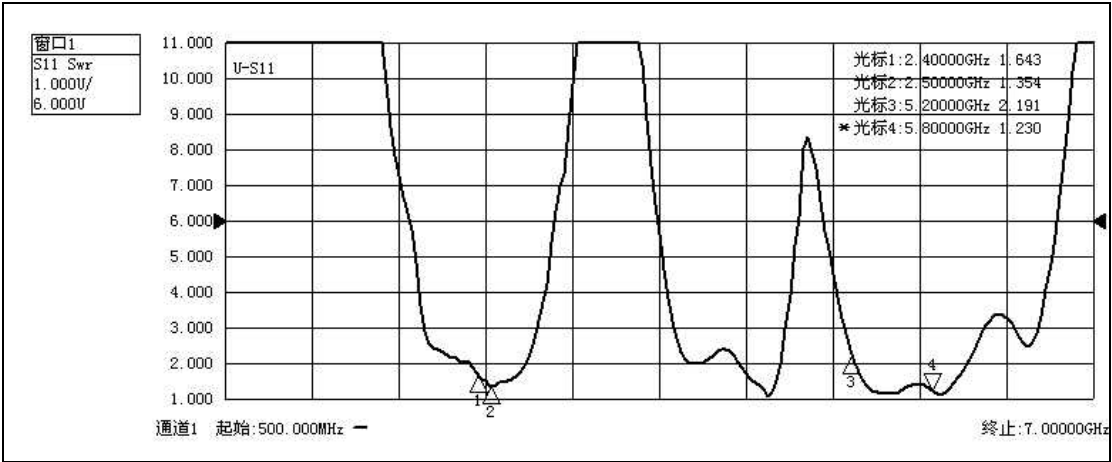


测试板上天线测试 (板厚 1.0mm)

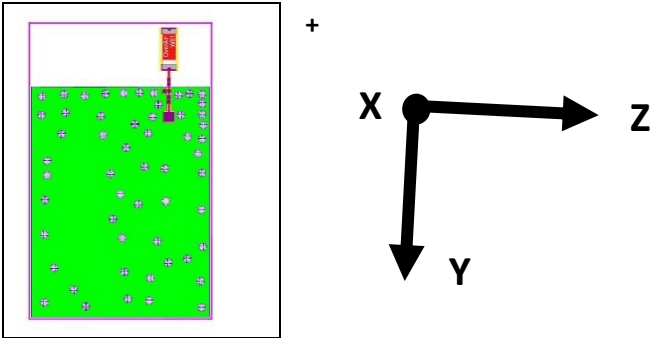


天线 S11 特性

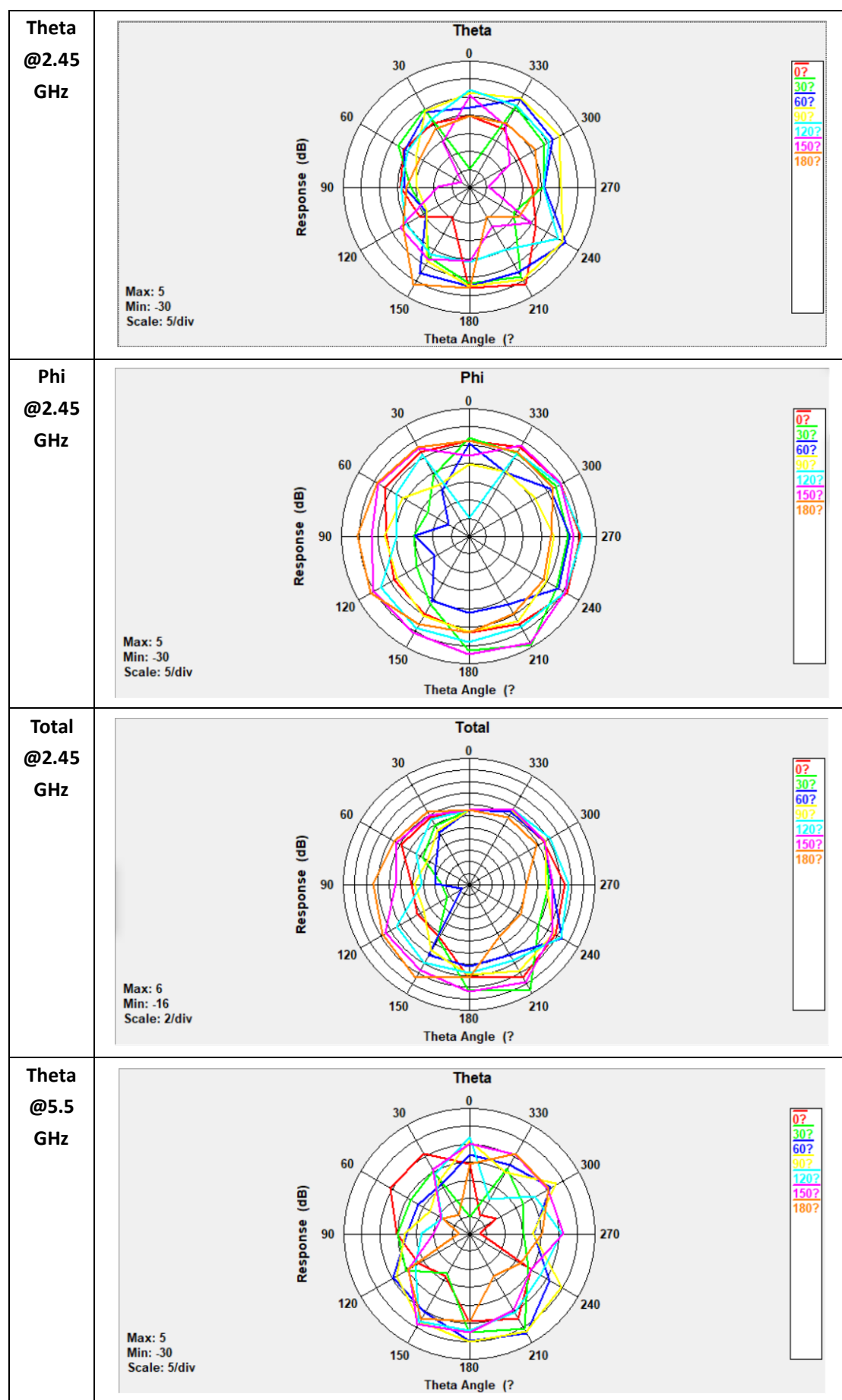


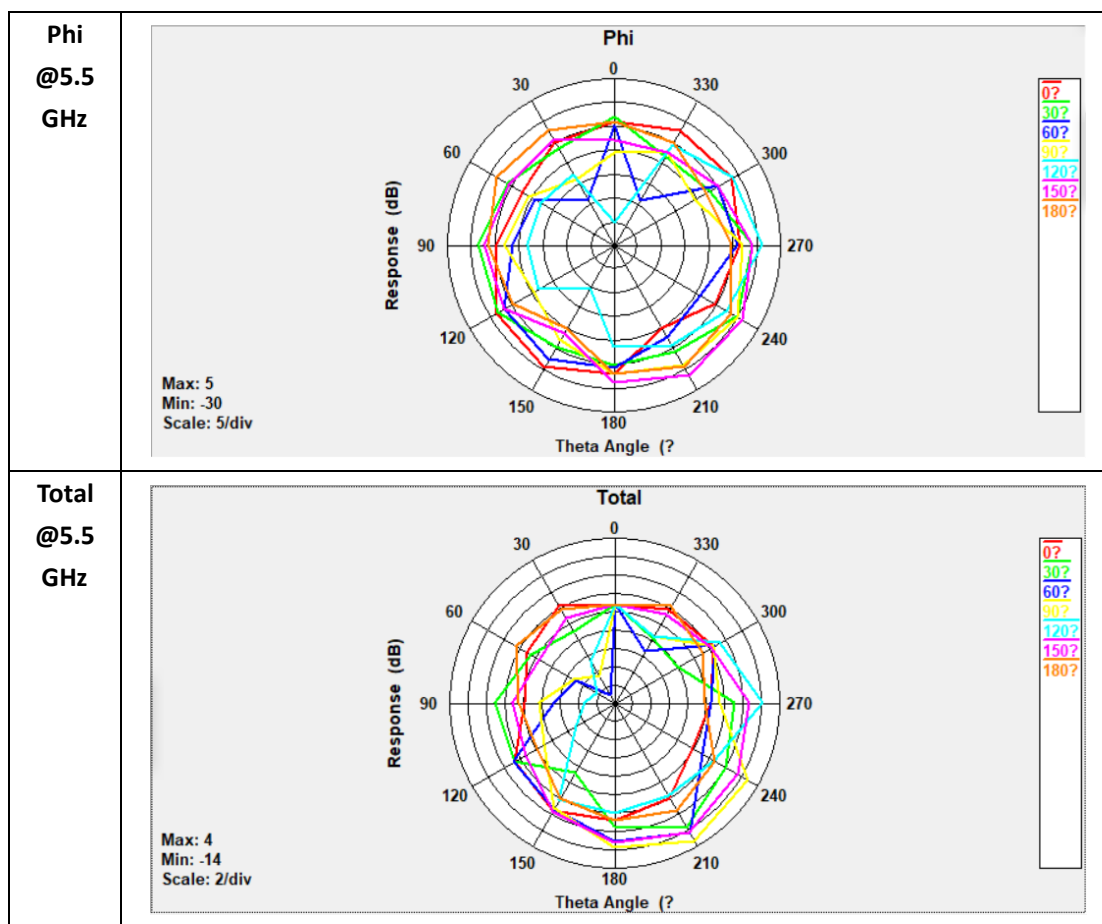


Efficiency, radiation patterns, gain and other performances are measured on the reference test PCB. All OA W01 specification data are measured on the designated test PCB in an ETS 3D anechoic chamber under defined test orientation.



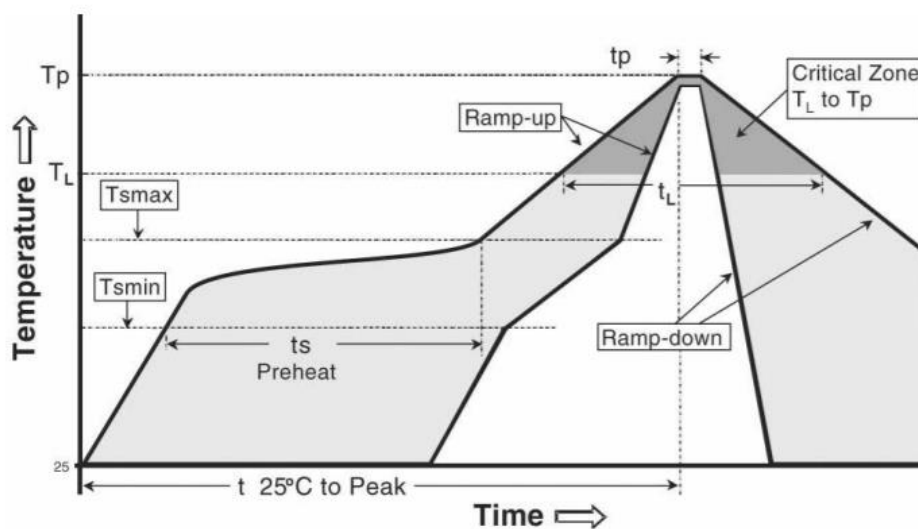
| 增益和效率                                        | 带宽 2.4G-2.5GHz |  |
|----------------------------------------------|----------------|--|
| 峰值增益 Peak Gain                               | 6.1dBi         |  |
| 带内平均增益<br>Average Gain across the band       | 5.7dBi         |  |
| 带内增益范围<br>Gain Range across the band         | 5.5dBi~6.1dBi  |  |
| 峰值效率 Peak Efficiency                         | 82.5%          |  |
| 带内平均效率<br>Average Efficiency across the band | 79%            |  |
| 带内效率范围<br>Efficiency Range across the band   | 74.8%~82.5%    |  |





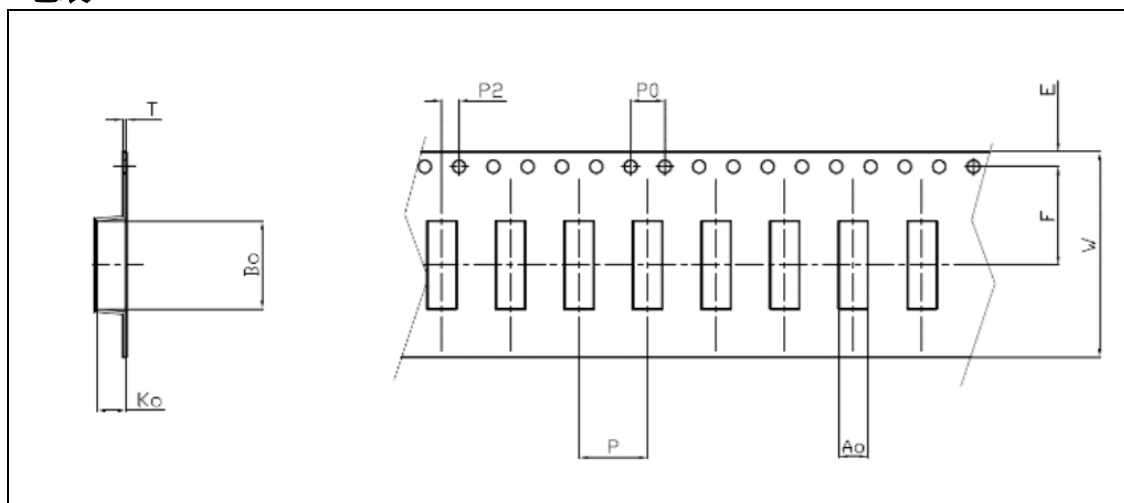
### 焊接条件

可靠无损的典型焊接规范如下图所示：



| Phase                               | Profile features                                                                                                                     | Pb-Free assembly (SnAgCu)          |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| RAMP-UP                             | Avg. Ramp-up Rate (T <sub>smax</sub> to T <sub>p</sub> )                                                                             | 3 °C / second (max.)               |
| PREHEAT                             | - Temperature Min (T <sub>smin</sub> )<br>- Temperature Max (T <sub>smax</sub> )<br>- Time (t <sub>smin</sub> to t <sub>smax</sub> ) | 150 °C<br>200 °C<br>60-180 seconds |
| REFLOW                              | - Temperature (T <sub>L</sub> )<br>- Total Time above T <sub>L</sub> (t <sub>L</sub> )                                               | 217 °C<br>60-150 seconds           |
| PEAK                                | - Temperature (T <sub>p</sub> )<br>- Time (t <sub>p</sub> )                                                                          | 260 °C<br>20-40 seconds            |
| RAMP-DOWN                           | Rate                                                                                                                                 | 6 °C/second max                    |
| Time from 25 °C to Peak Temperature |                                                                                                                                      | 8 minutes max                      |

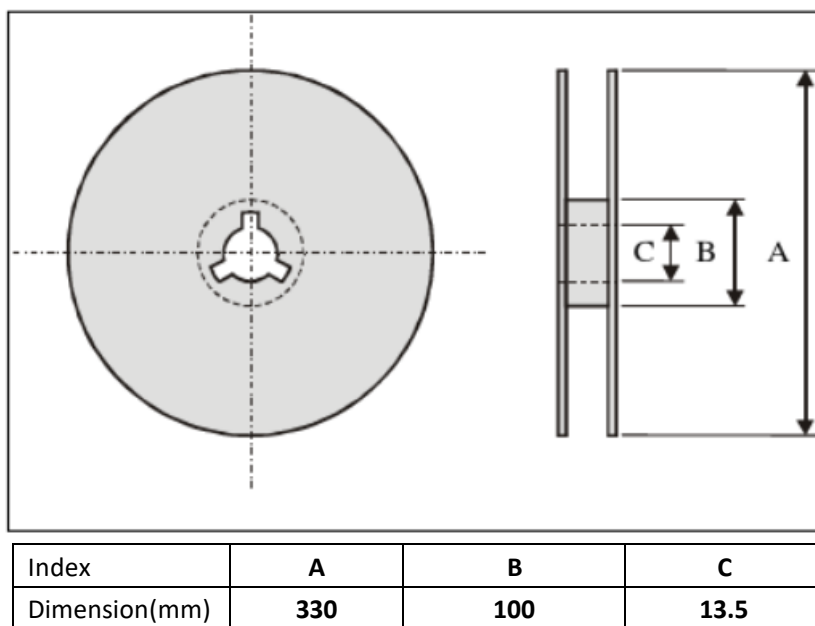
## 包装



## 塑胶载带规格 (单位:mm)

| Index          | Ao       | Bo      | Ko      | T        | W        |
|----------------|----------|---------|---------|----------|----------|
| Dimension (mm) | 3.3±0.1  | 8.4±0.1 | 1.3±0.1 | 0.3±0.05 | 16.0±0.3 |
| Index          | E        | F       | P       | P0       | P2       |
| Dimension (mm) | 1.75±0.1 | 7.0±0.1 | 8.0±0.1 | 4.0±0.1  | 2.0±0.1  |

## 卷盘尺寸



标准数量: 2000 PCS/盘.

### 存储环境

1. Storage temperature:  $10^{\circ}\text{C} \sim +40^{\circ}\text{C}$ .
2. Relative humidity: 30 %  $\sim$  70 % RH.
3. Keep away from corrosive gases such as sulfur, chlorine or acids, which may oxidize electrodes and degrade solderability.
4. Store inside enclosures to avoid moisture and dust contamination.
5. Warehouse storage shall avoid heat, vibration and direct sunlight.
6. Keep products under hermetically sealed storage.