

# 2.4G BLUETOOTH, WIFI

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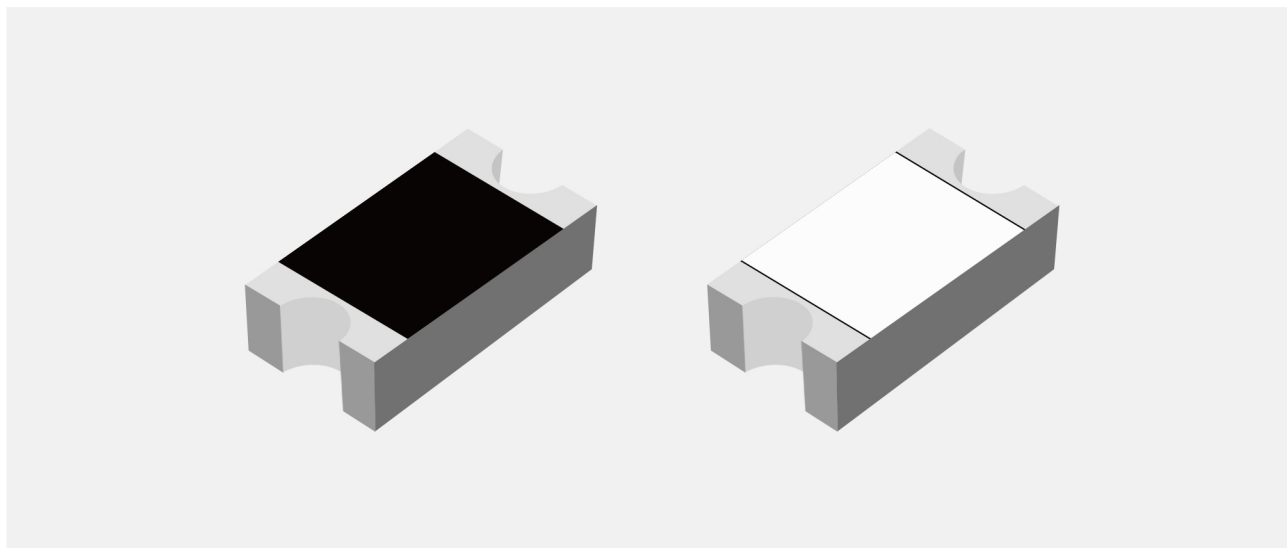
## ZIGBEE CHIP ANTENNA

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  2450±50MHz

Dimensions : 3.35 x 1.75 x 1.2 mm

Clearance Area: 5.2 x 5.0 mm





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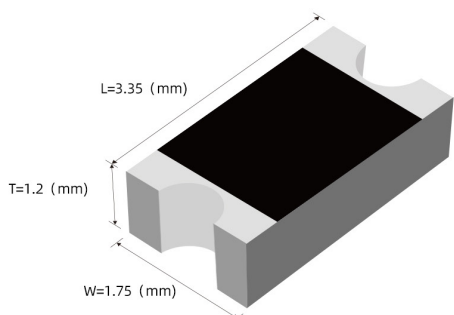
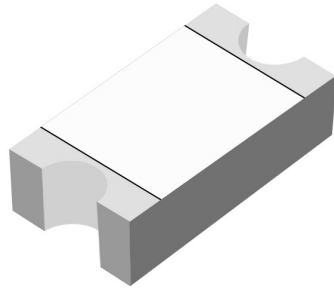


## 1 FEATURES & BENEFITS

- Low Profile
- Light Weight
- Easy to Integrate
- Intended for SMD Mounting
- Reduced Cost and Time-to-Market

## 2 APPLICATIONS

- Smartphones, tablets, laptops, and notebooks
- Smart home devices like home security systems
- Internet of Things (IoT), wearable devices, E-health devices
- Networking equipment like WiFi routers, WiFi extenders and repeaters
- Asset tracking, point of sale (POS) systems
- Automotive like V2X communication
- Smart city infrastructure like public WiFi hotspots, environmental monitoring

| <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p><b>Top</b></p>  </div> <div style="text-align: center;"> <p><b>Bottom</b></p>  </div> </div> |                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Items                                                                                                                                                                                                                                                                                                                                                                                       | Dimensions (mm) |
| Length                                                                                                                                                                                                                                                                                                                                                                                      | 3.35±0.1        |
| Width                                                                                                                                                                                                                                                                                                                                                                                       | 1.75±0.1        |
| Thickness                                                                                                                                                                                                                                                                                                                                                                                   | 1.2±0.1         |

## 3 ORDER INFORMATION

|              |                                           |
|--------------|-------------------------------------------|
| Product Name | 2.4G Bluetooth, WIFI, ZigBee Chip Antenna |
| Part Number  | ADWH001                                   |
| Dimensions   | 3.35 x 1.75 x 1.2 mm                      |
| Mounting     | SMT                                       |
| Packaging    | Tape & Reel                               |
| MOQ          | 2500 pcs/reel                             |

## 4 REFERENCE GUIDE

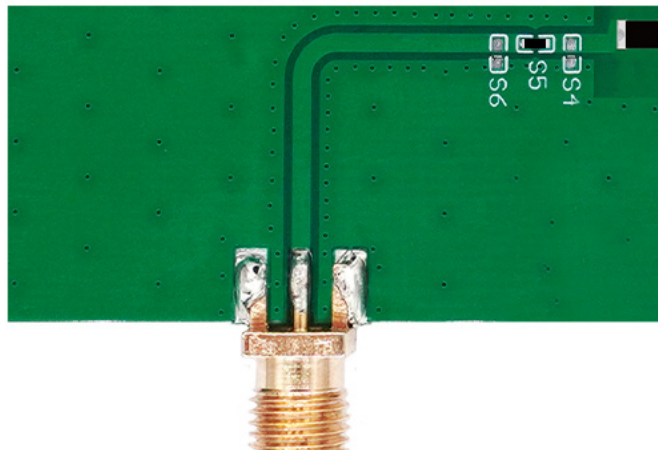
|                                                                                                                                                       |                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| Technical Features                                                                                                                                    | 2450±50 MHz          |
| Band Width                                                                                                                                            | >100MHz              |
| Input Impedance                                                                                                                                       | 50Ω                  |
| Peak Gain                                                                                                                                             | 0.87 dBi             |
| VSWR                                                                                                                                                  | <2                   |
| Operating Temperature                                                                                                                                 | -40°C to +85°C       |
| Power Capacity                                                                                                                                        | 3W                   |
| Dimensions<br>(L x W x H)                                                                                                                             | 3.35 x 1.75 x 1.2 mm |
| All data were measured in free space and on a reference ground plane of 65 mm length, 40 mm width, and 1.0 mm thickness. Application data might vary. |                      |

## 5 EVALUATION BOARD WITH THE ANTENNA

The evaluation board provides operation at 2450±50 MHz.

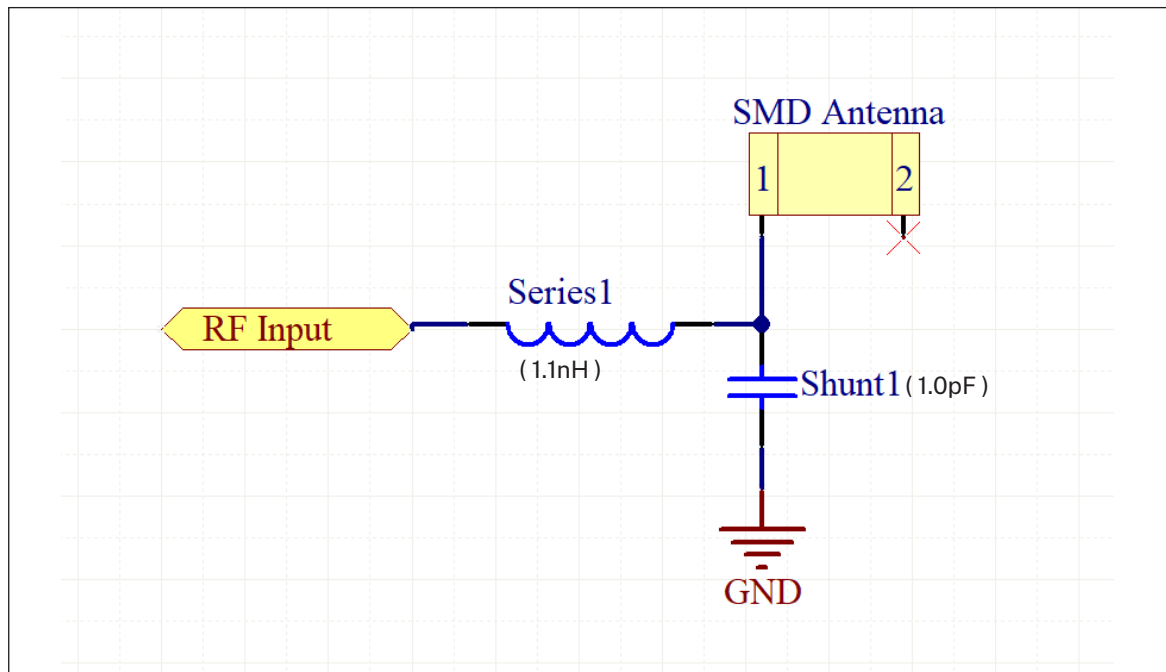
Evaluation Board dimension: 65 x 40 x 1.0 mm

Clearance Area: 5.2 x 5.0 mm

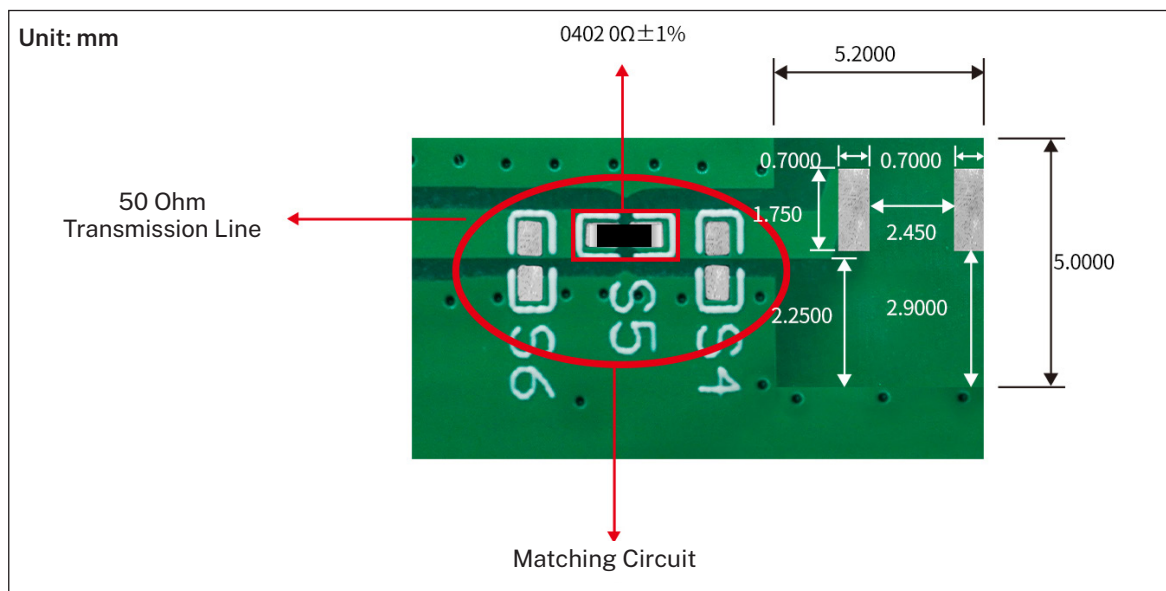


It's strongly recommended to place the antenna near the edge of the board. Maximum antenna performance is achieved by placing the antenna towards one of the corners of the PCB and with the feed point of the antenna as close to same corner of the PCB as possible.

## 6 MATCHING NETWORK



## 7 RECOMMENDED LAYOUT

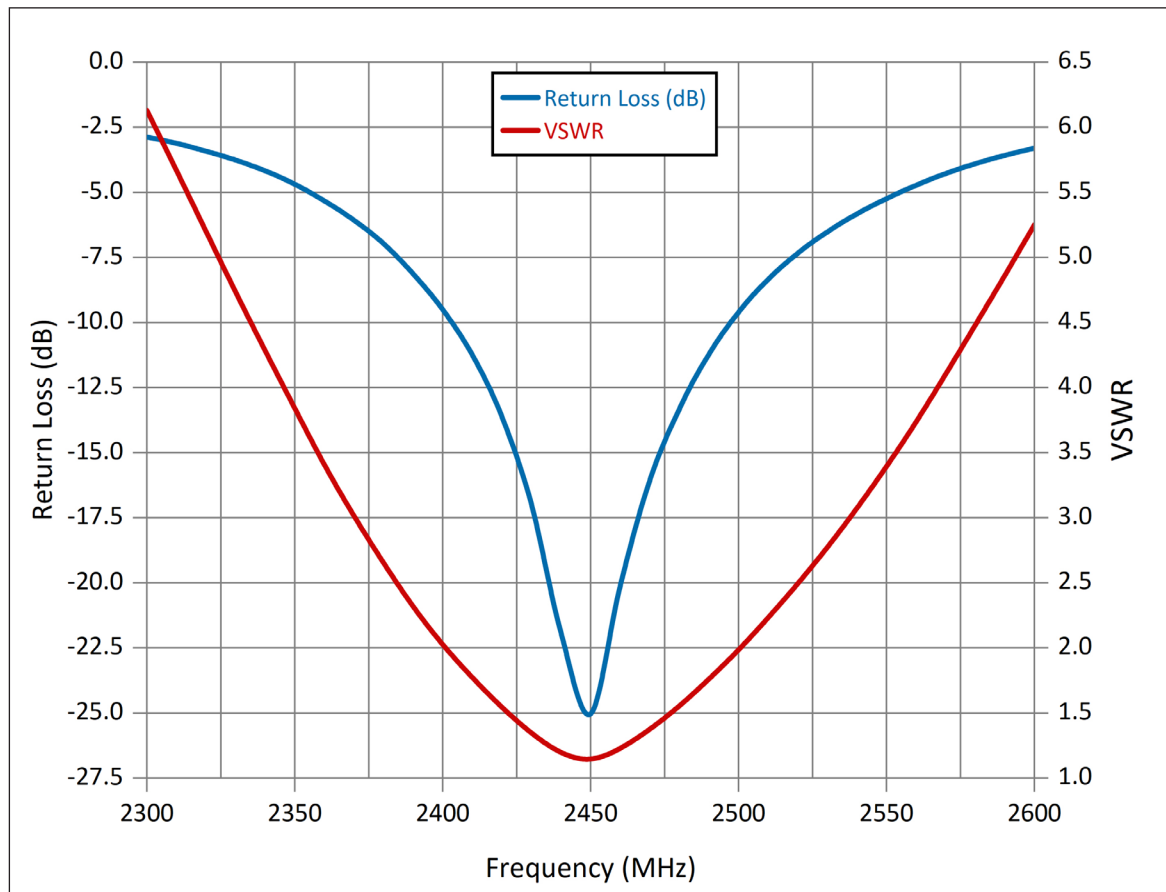


## 8 ELECTRICAL PERFORMANCE

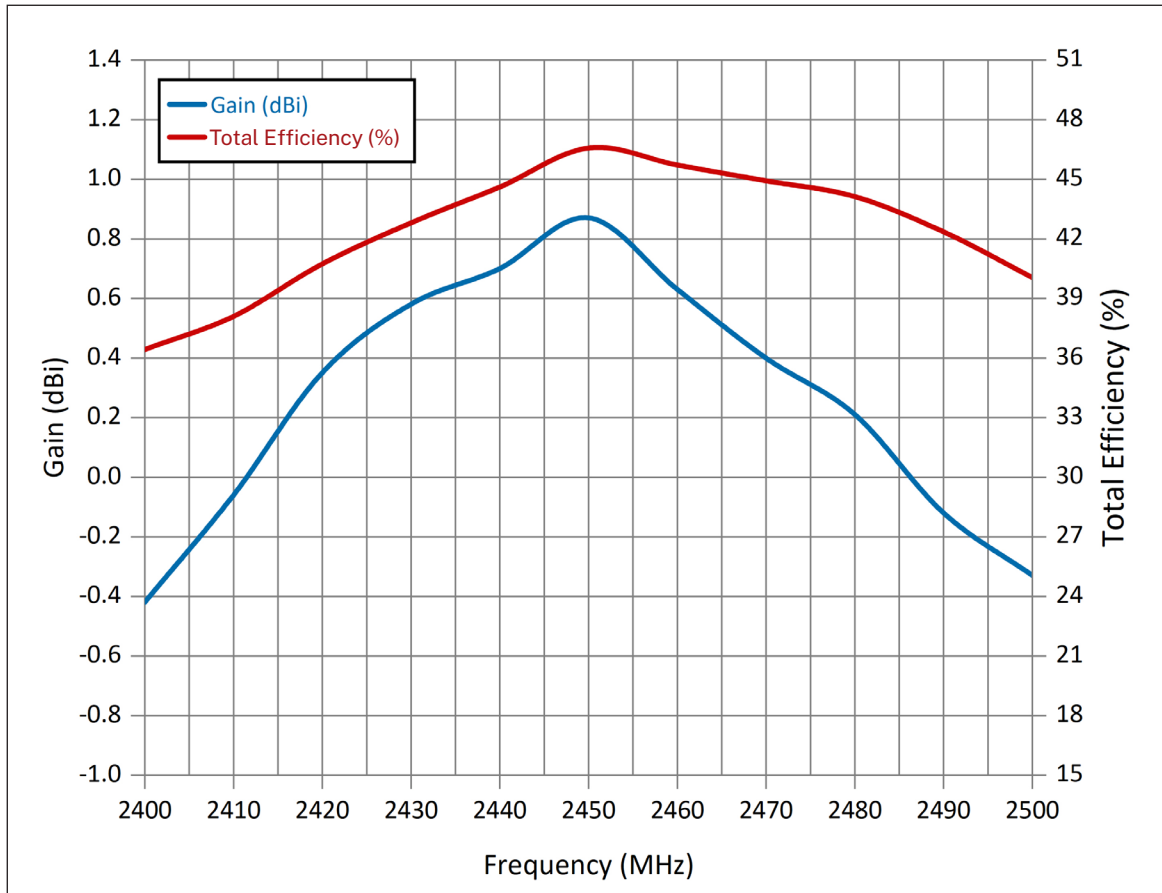
### © Note

The data displayed in Chapter 8 were measured in free space and on a reference ground plane of 65 mm length, 40 mm width, and 1.0 mm thickness.

### 8.1 VSWR and Return Loss (dB)

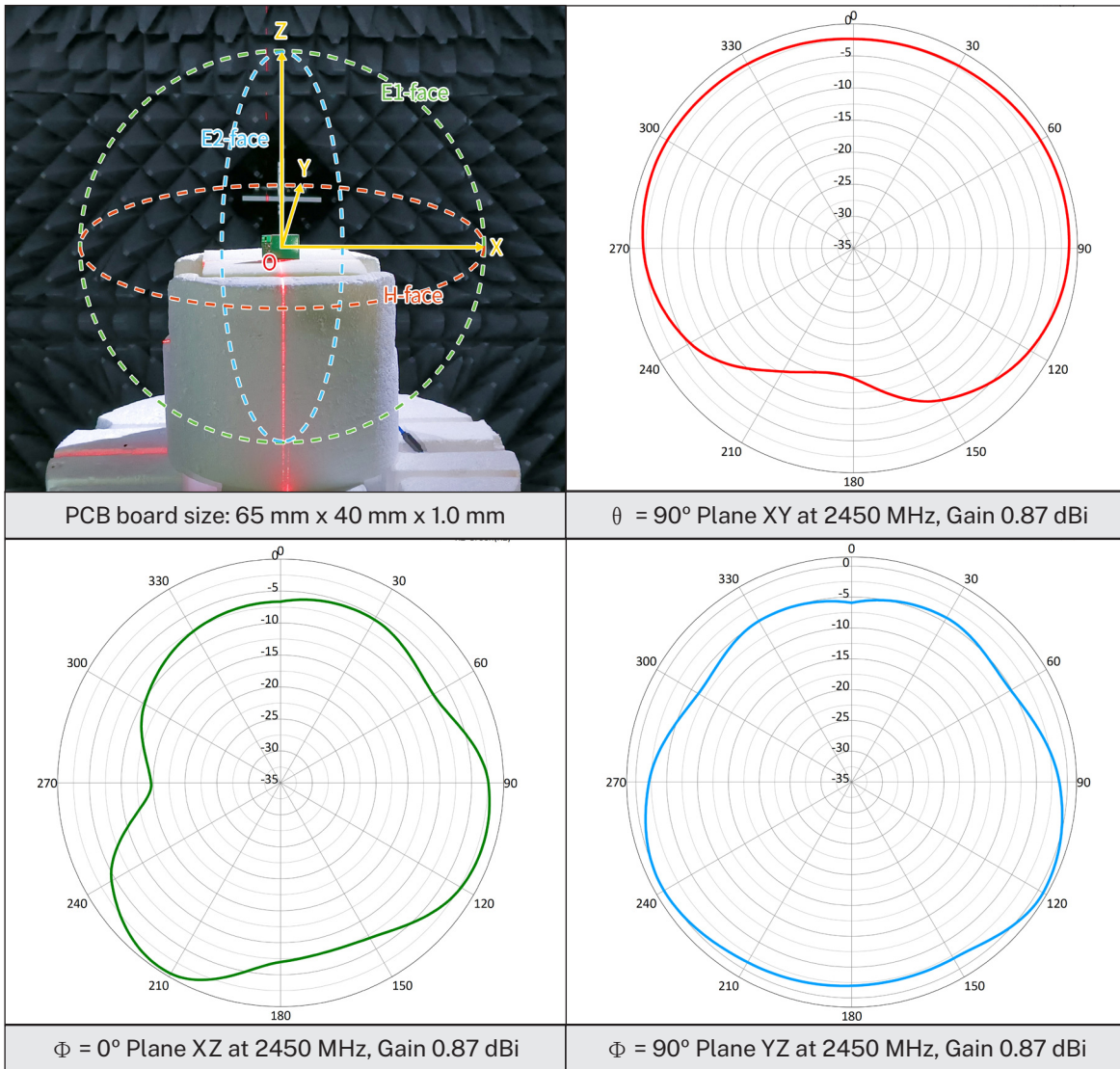


## 8.2 Gain (dBi) and Total Efficiency (%)



| Frequency (MHz) | Gain (dBi) | Efficiency (%) |
|-----------------|------------|----------------|
| 2400            | -0.42      | 36.42          |
| 2410            | -0.06      | 38.09          |
| 2420            | 0.35       | 40.73          |
| 2430            | 0.58       | 42.8           |
| 2440            | 0.7        | 44.6           |
| 2450            | 0.87       | 46.57          |
| 2460            | 0.63       | 45.71          |
| 2470            | 0.4        | 44.92          |
| 2480            | 0.21       | 44.12          |
| 2490            | -0.12      | 42.35          |
| 2500            | -0.33      | 40.05          |

### 8.3 Radiation Patterns (2.4-2.5 GHz)

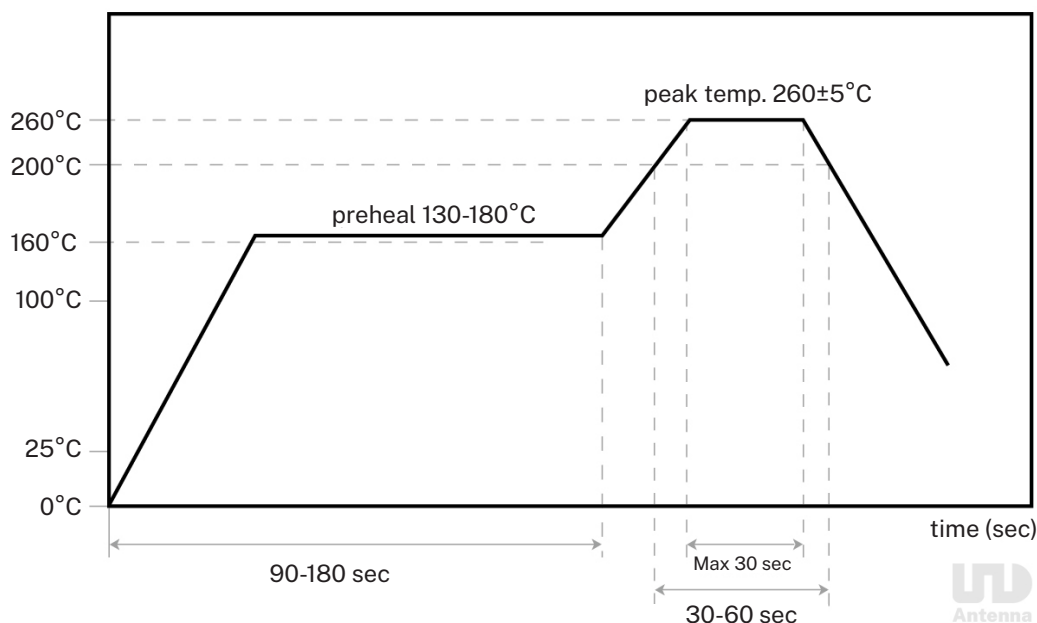


## 9 SOLDERING CONDITIONS

This antenna is suitable for lead free soldering.

The reflow duration should be adjusted to create good solder joints without raising the antenna temperature beyond the allowed maximum of 260°C.

The figure below shows the temperature profile for soldering.



## 10 PACKAGING

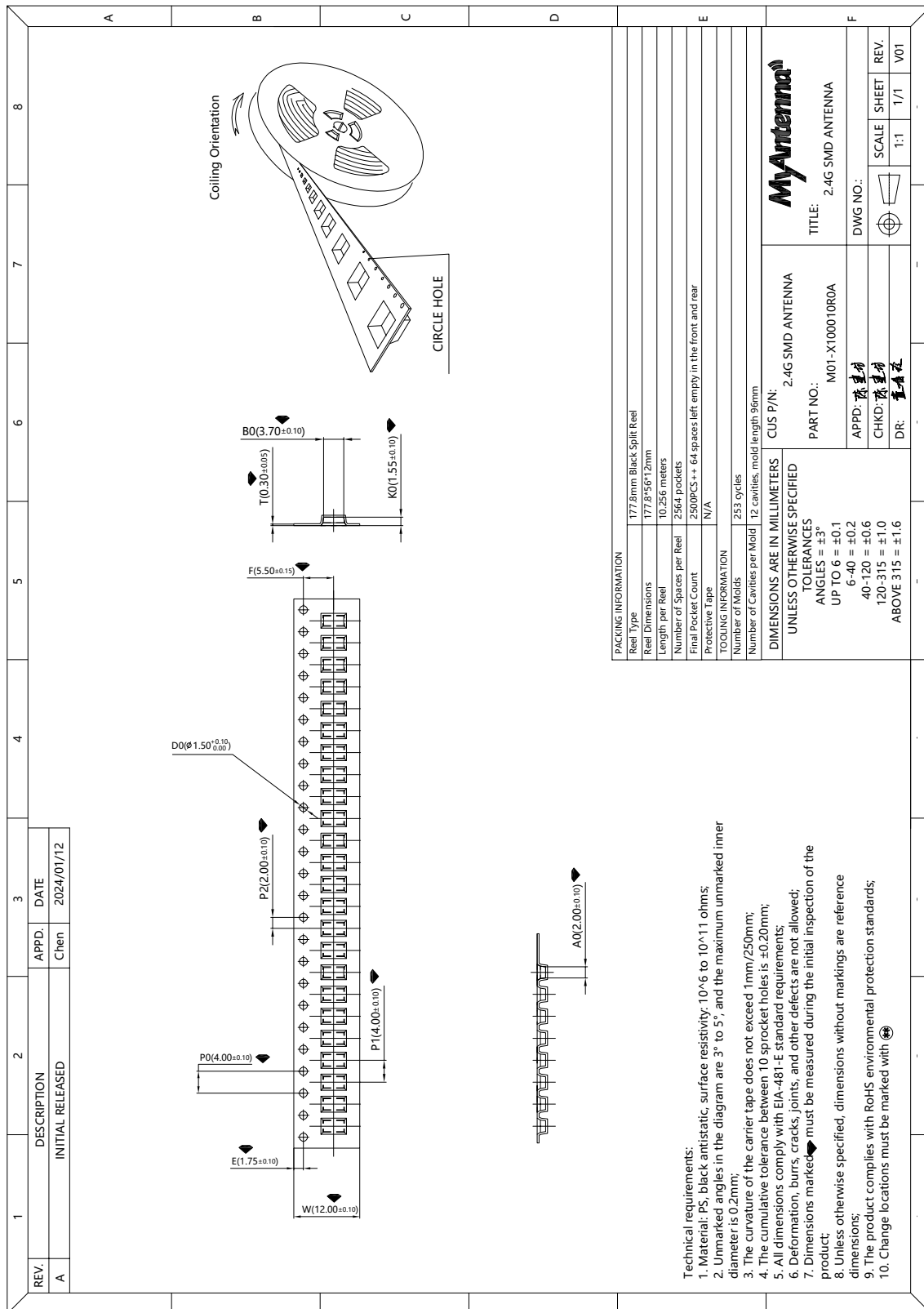
### 10.1 Optimal Storage Conditions for Packaged Reels

|               |                                                                             |
|---------------|-----------------------------------------------------------------------------|
| Temperature   | -5°C to 40°C                                                                |
| Humidity      | Less than 70% RH                                                            |
| Shelf life    | 18 months                                                                   |
| Storage place | Away from corrosive gas and direct sunlight                                 |
| Packaging     | Reels should be stored in unopened sealed manufacturer's plastic packaging. |

#### © Note

Storage of open reels of antennas is not recommended due to possible oxidization of pads on antennas. If short-term storage is necessary, then it is highly recommended that the bag containing the antenna reel is re-sealed and stored in like storage conditions as in the above table.

## 10.2 Packagings and Dimensions (Unit: mm)





## 11 ANTENNA CERTIFICATION

|                                                                                                                                         |                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| RoHS Approval                                                                                                                           | Compliant [2011/65/EU&2015/863]     |
| REACH Approval                                                                                                                          | Conform or declared [(EC)1907/2006] |
| Hazardous material regulation conformance: A certificate of conformance is available upon request. Feel free to consult us for details. |                                     |



## 12 WELCOME ALL ANTENNA OEM/ODM PROJECTS

### About ABOOSTY



10+ years in antenna R&D, production, and OEM/ODM



House of Aboosty: 1M+ units annual output capacity



Factory directly competitive price



Industry-leading quality levels



Professional team-work & support



Quick price and lead time estimation

### Why Choose ABOOSTY



Innovative and patented design solutions



Full terminal devices anechoic chamber test



Co-location with its custom



Competitive price



Strict inspection



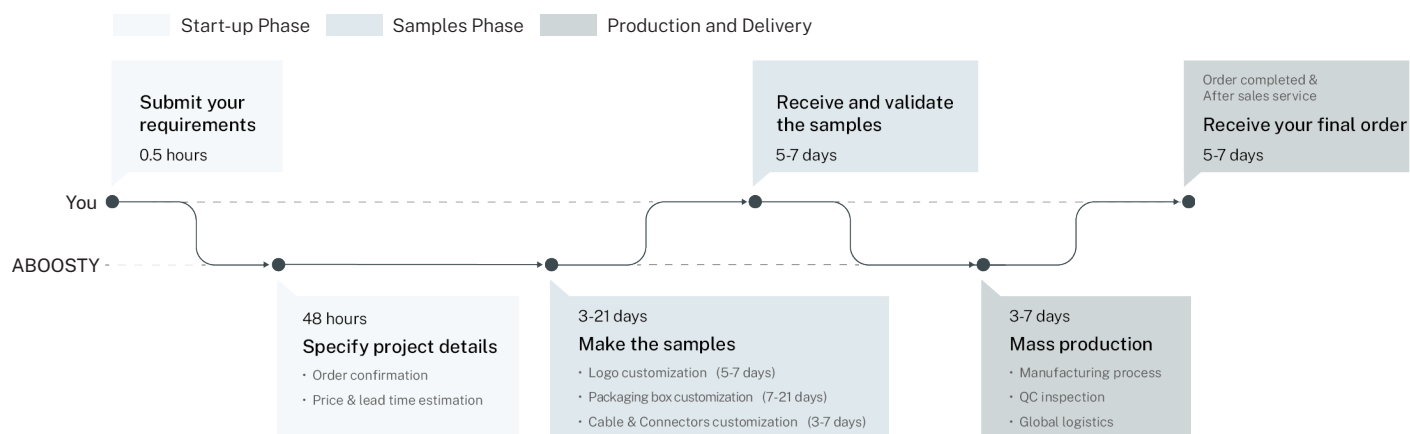
Prompt reply within 24h

### What We Provide

| OEM/ODM Services                                                                                           |                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Light Customization                                                                                        | Deep Customization                                                                                                                                                                                                   |
| <ul style="list-style-type: none"><li>• Logo</li><li>• Packaging</li><li>• Cables&amp;Connectors</li></ul> | <ul style="list-style-type: none"><li>• In-depth tailoring for specific applications</li><li>• Functional enhancements</li><li>• Environmental adaptations</li><li>• Vertical certifications</li><li>• ...</li></ul> |

### Custom Process

#### Light Customization Process



## Deep Customization Process

