

Antenna

YCGS007AA Datasheet

Antenna Services

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About the Document

Revision History

Version	Date	Author	Note
-	2021-11-04	Xiaodong YANG/ Kenny YIN	Creation of the document
1.0	2021-11-04	Xiaodong YANG/ Kenny YIN	First official release
1.1	2023-10-31	Toby WANG	<ol style="list-style-type: none">1. Added the storage temperature (Chapter 4).2. Updated coordinate system (Chapter 5.5).3. Updated the PCB footprint recommendation drawing (Chapter 7).

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1 Product Description

The antenna is designed for superior performance, and can be widely used for wireless applications.

We provide comprehensive antenna design support such as simulation, testing and manufacturing for custom antenna solutions to meet your specific application needs.

2 Product Features

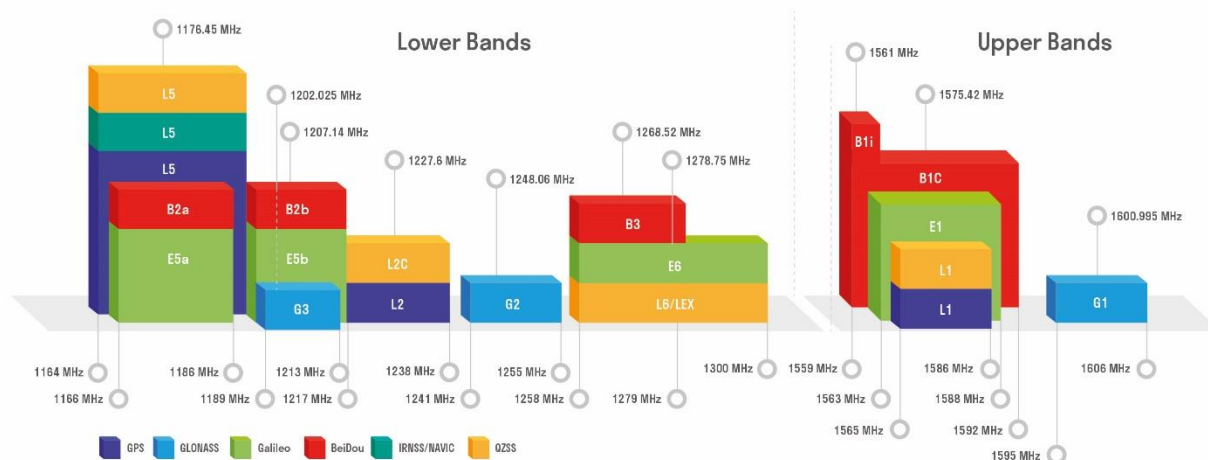
- Ceramic GNSS
- High efficiency
- Excellent performance



3 GNSS Frequency Band Checklist

GNSS Frequency Bands (MHz)					
GPS	L1 Centre 1575.42 (1565–1586)	L2 Centre 1227.6 (1217–1238)	L5 Centre 1176.45 (1164–1189)		
	●	-	-		
GLONASS	G1/L10C/L10F Centre 1601 (1595–1606)	G2/L20C/L20F Centre 1248.06 (1241–1255)	G3/L30C Centre 1202.025 (1189–1213)		
	●	-	-		
GALILEO	E1 Centre 1575.42 (1563–1588)	E5a Centre 1176.45 (1166–1187)	E5b Centre 1207.14 (1197–1218)	E6 Centre 1278.75 (1258–1300)	
	●	-	-	-	
BEIDOU	B1I Centre 1561.098 (1559–1564)	B1C (BeiDou-3) Centre 1575.42 (1559–1592)	B2a/B2I Centre 1176.45 (1166–1187)	B2b Centre 1207.14 (1197–1217)	B3 Centre 1268.52 (1258–1279)
	-	●	-	-	-
QZSS	L1 Centre 1575.42 (1573–1578)	L2C Centre 1227.6 (1226–1229)	L5 Centre 1176.45 (1166–1187)	L6 Centre 1278.75 (1257–1300)	
	●	-	-	-	
IRNSS	L5 Centre 1176.45 (1164–1189)				
	-				

GNSS Bands and Constellations



4 Product Specifications (Testing description)

- The antenna is tested on a 70 mm × 70 mm PCB.

Passive Electrical Specifications

Frequency Range	1575.42–1602 MHz (±1.5 MHz)
Input Impedance	50 Ω
VSWR	≤ 2.0
Gain	≥3.0 dBi (70 mm × 70 mm GND)
Polarization Type	RHCP

Mechanical Specifications

Antenna Size	25 mm × 25 mm × 2 mm
Working Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C

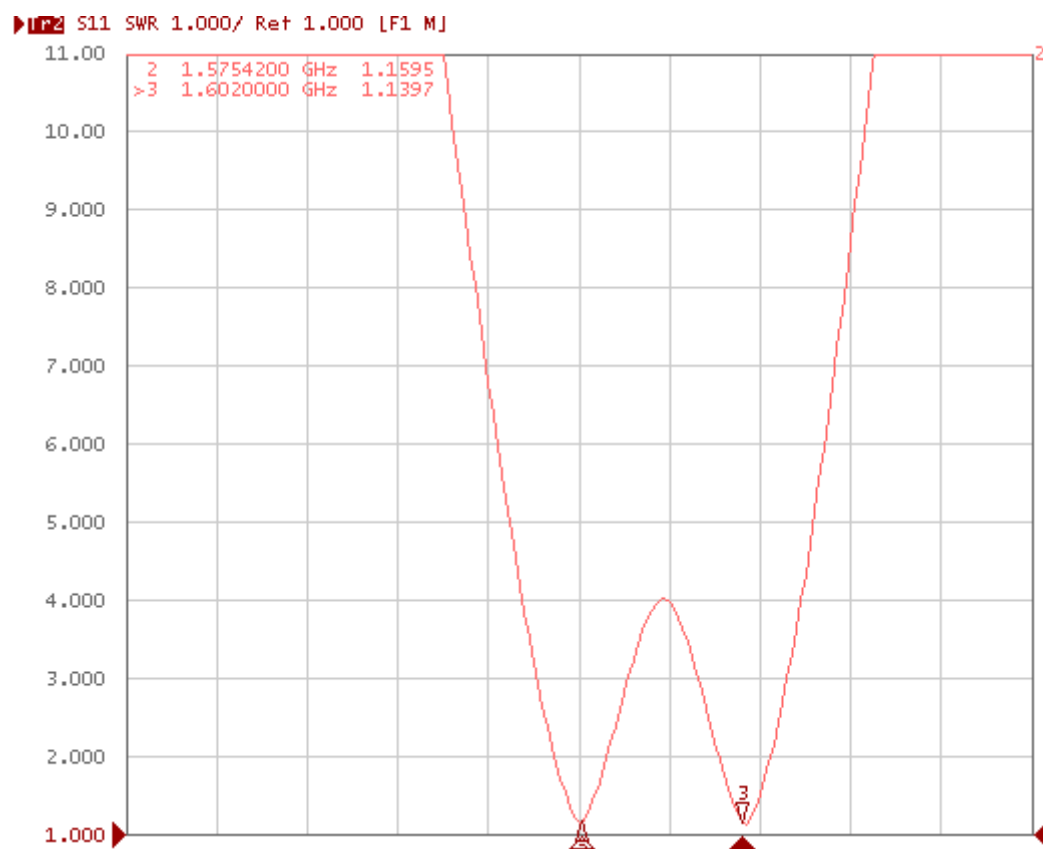
5 Overall Performance

5.1. Test Environment

- KEYSIGHT ENA Network Analyzer E5063A 100 kHz – 8.5 GHz
- RayZone® 2800 Chamber 5G (FR1) SISO/MIMO, 600 MHz – 8.5 GHz

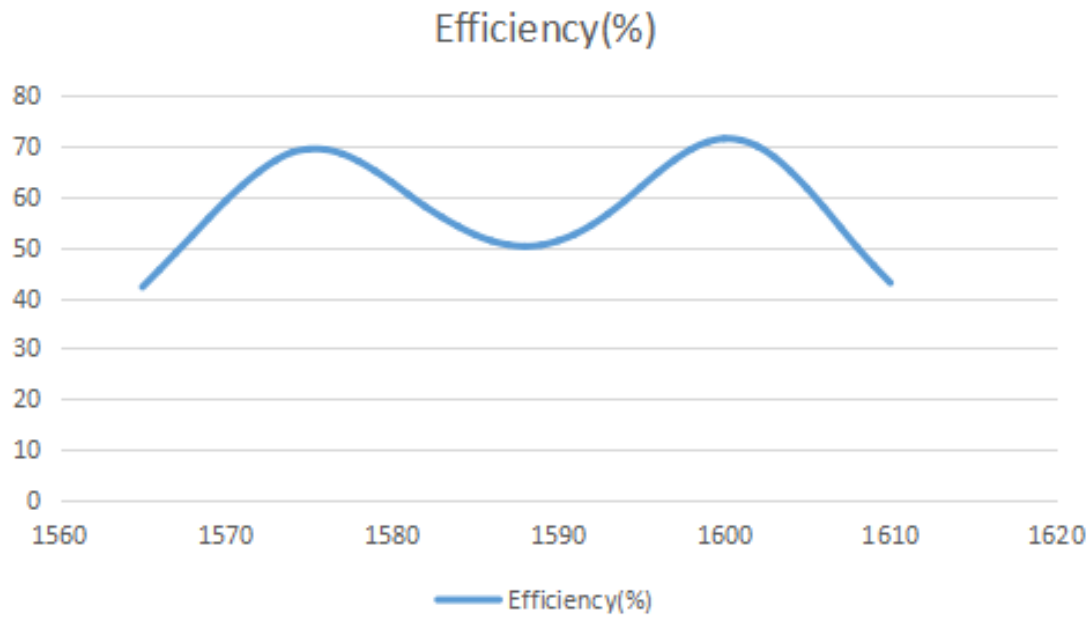


5.2. VSWR



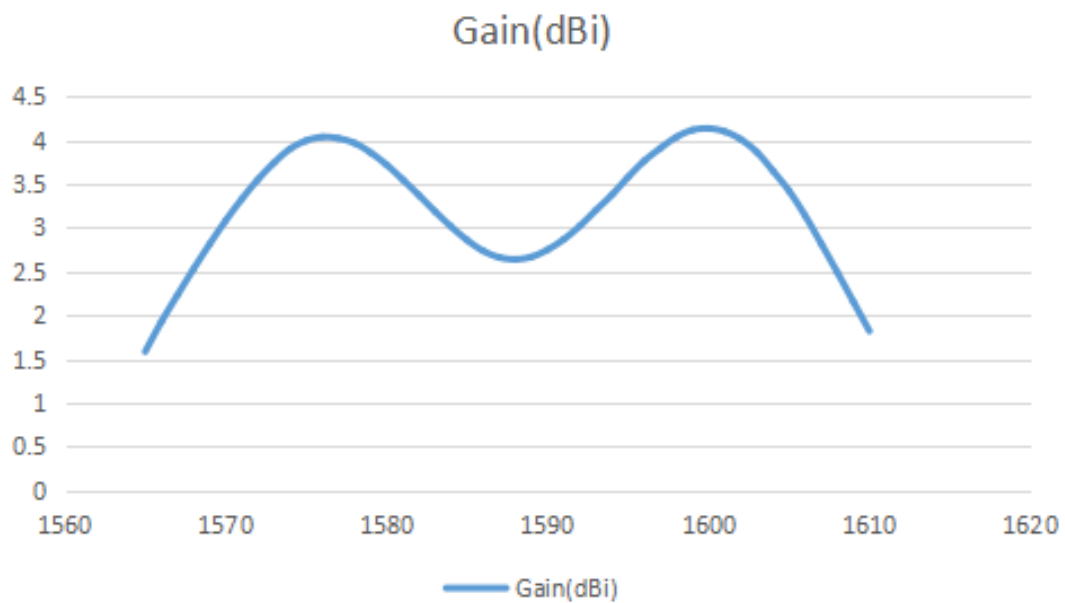
Frequency (MHz)	1575	1602
VSWR	1.1	1.1

5.3. Efficiency



Frequency (MHz)	1575	1602
Efficiency (%)	69.43	70.00

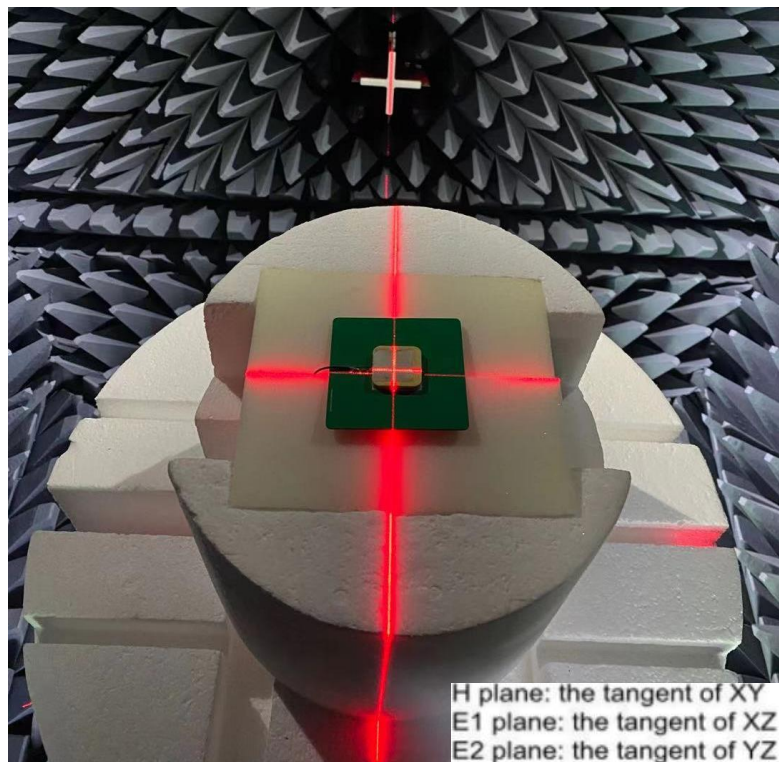
5.4. Gain



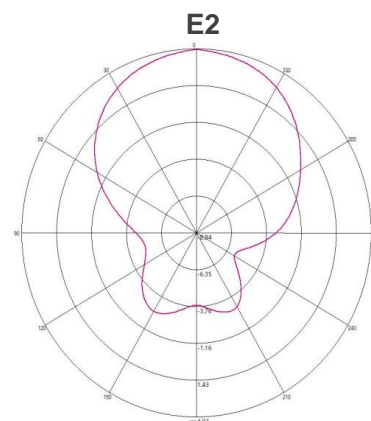
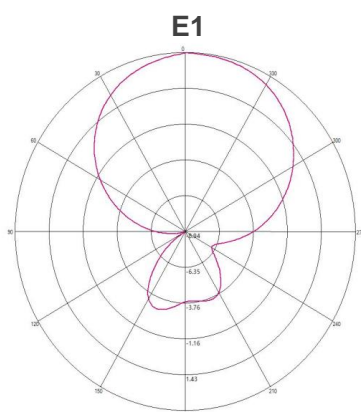
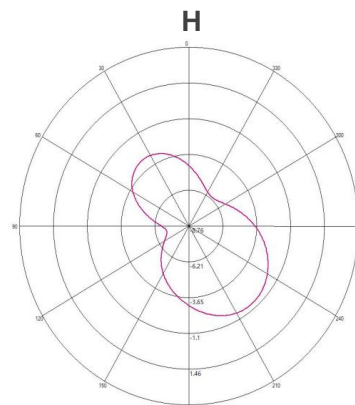
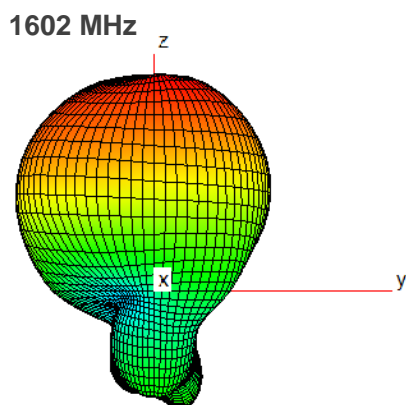
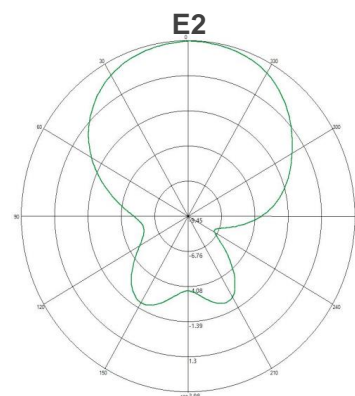
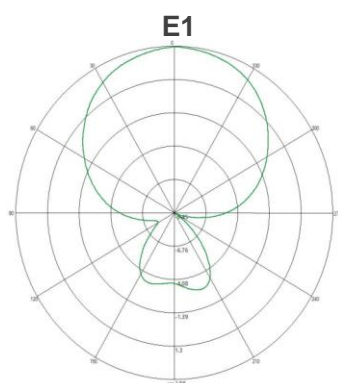
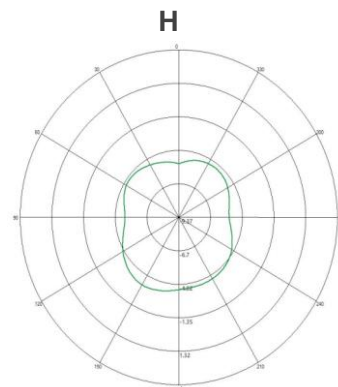
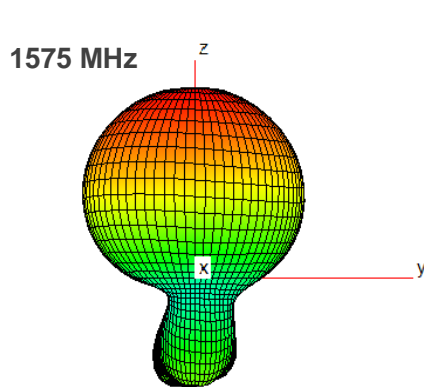
Frequency (MHz)	1575	1602
Gain (dBi)	3.9	4.0

5.5. Antenna Test in Chamber

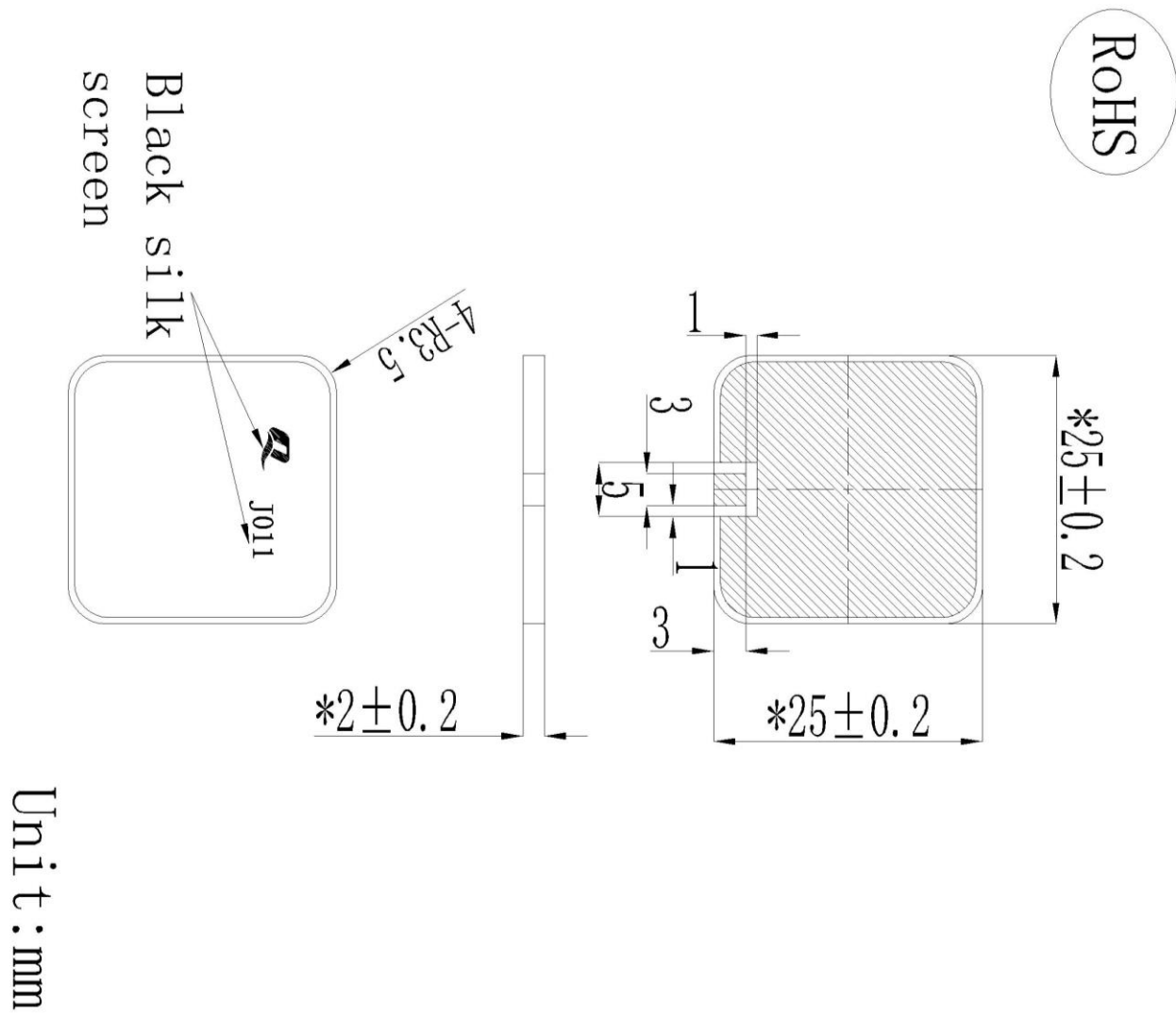
- Test condition: free space.



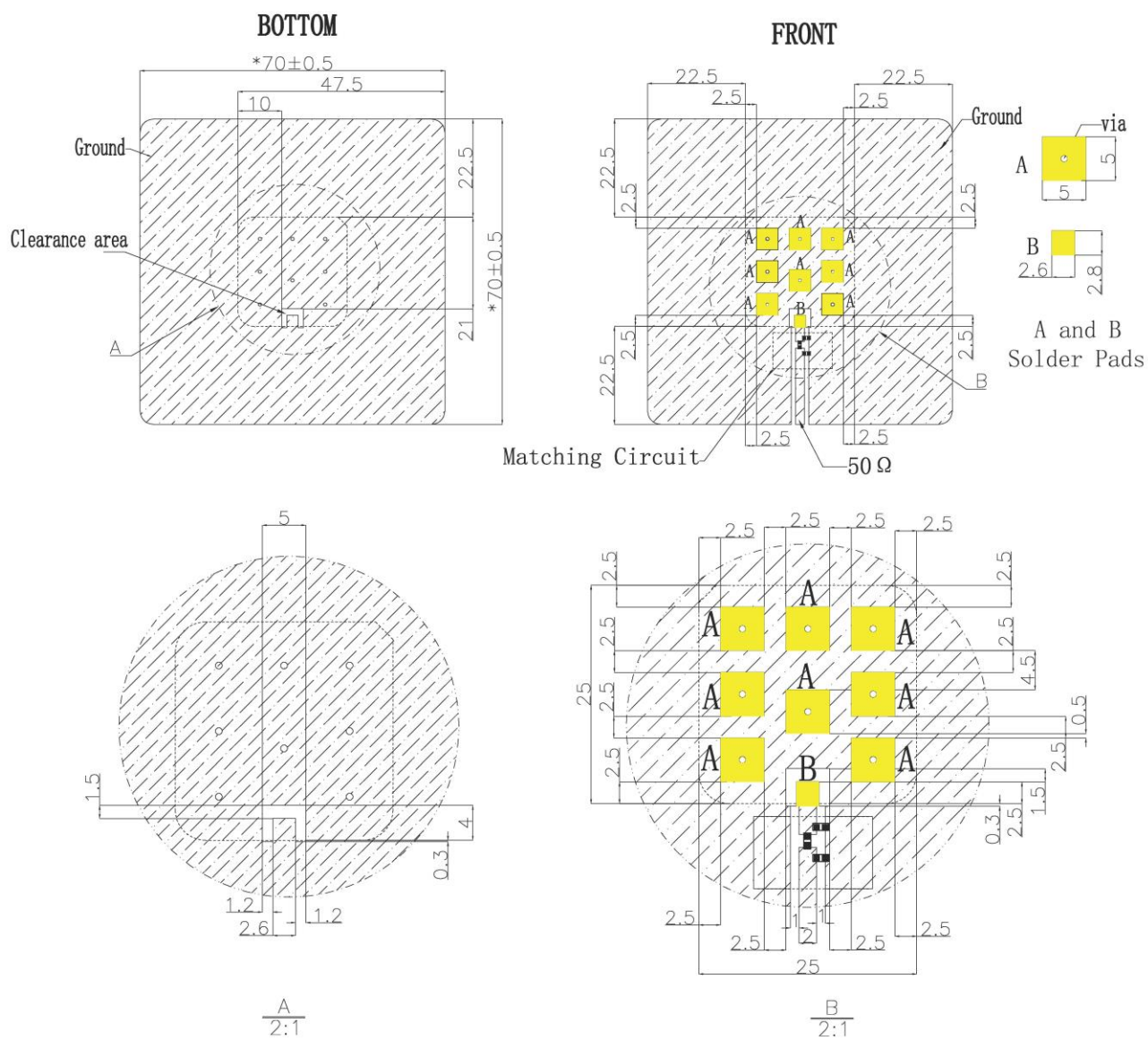
5.6. 2D&3D Radiation



6 Product Size

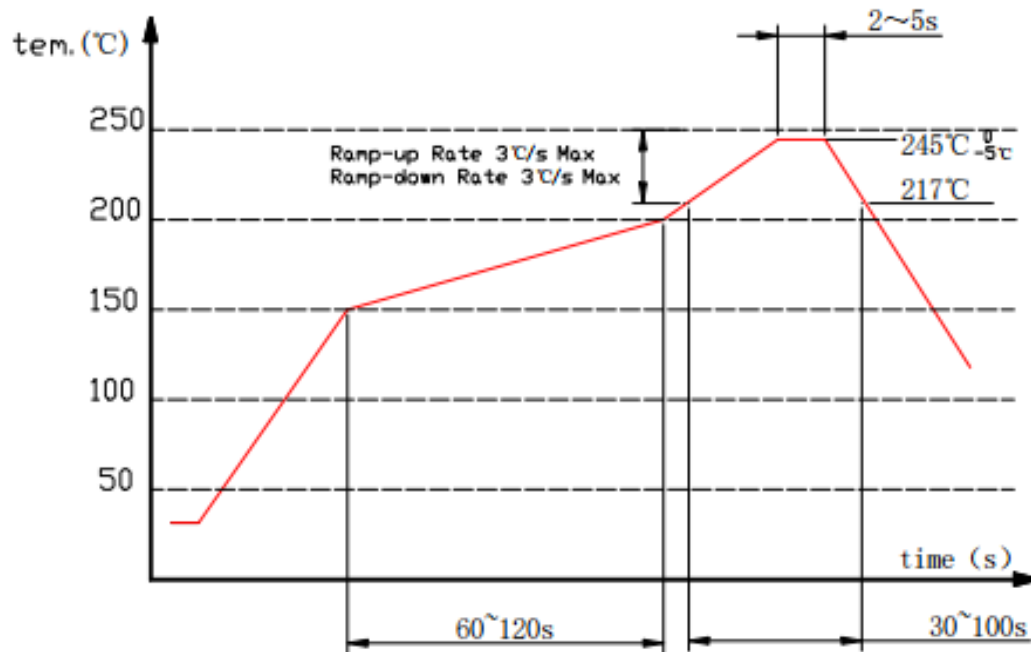


7 PCB Footprint Recommendation



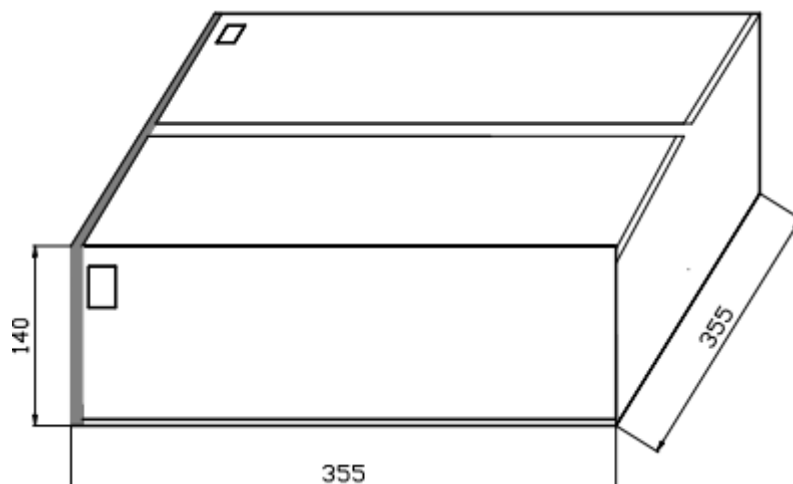
8 Recommended Reflow Soldering Profile

- Solder paste: Sn/Ag/Cu - 96.5/3.0/0.5.
- Recommended reflow condition:



9 Packaging

9.1 Dimensions and Mark



- Section of Package

Package is made of corrugated paper with thickness of 0.8 cm. Package has 2 inner boxes. Each box has 1 reel (each reel for plastic bag).

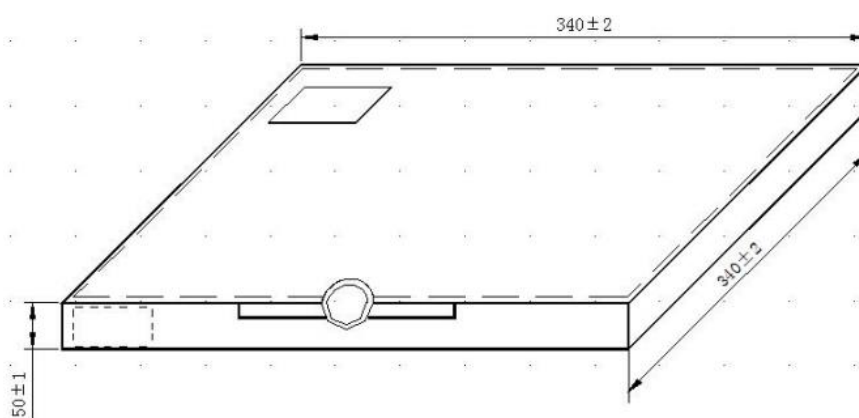
- Quantity of Package

Per plastic reel: 400 pcs.

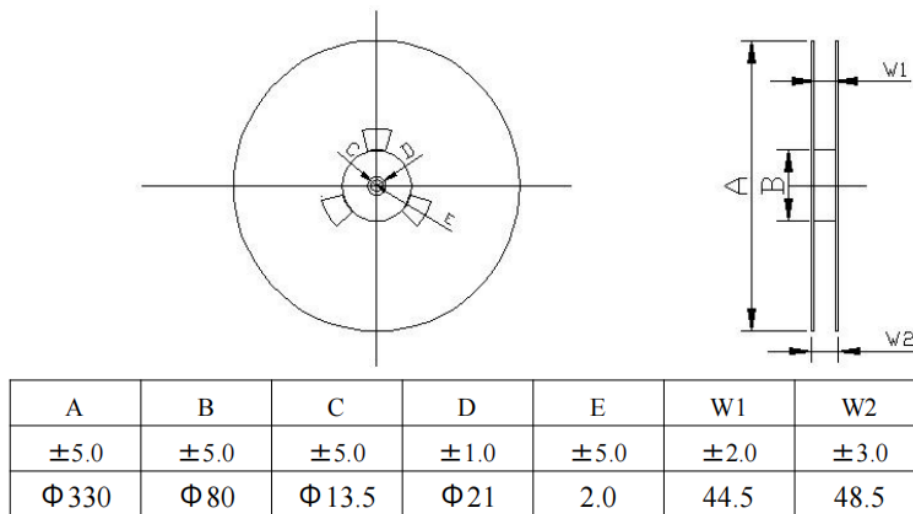
Per inner box: 1 reel.

Per package: 2 inner boxes (800 pcs of ceramic part).

- Inner Box Dimensions

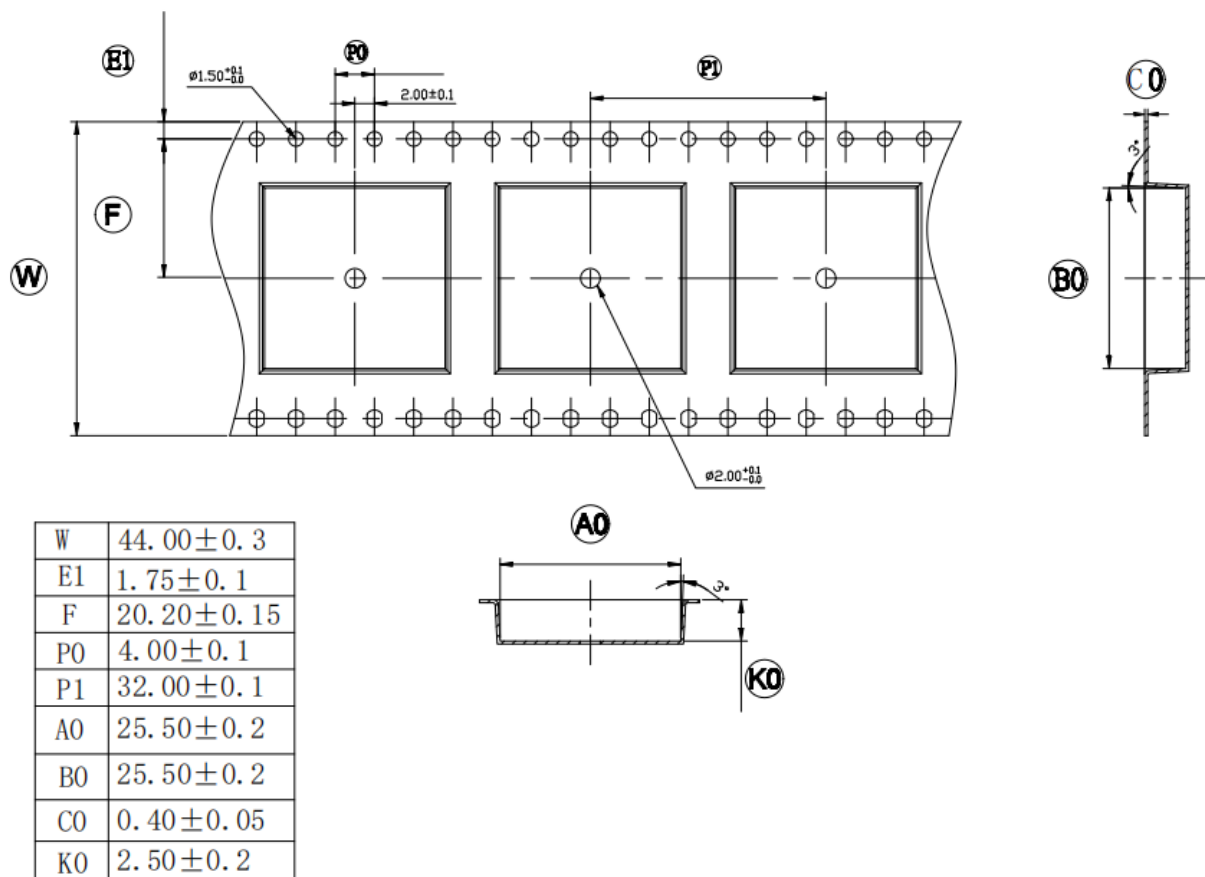


● Reel Dimensions



● Carrier Tape

Dimensions of Carrier Tape:



Unit: mm

- Test Condition of Peeling Strength

