

# 2JL61

## GNSS Ceramic Surface Mount

### Key Features

GPS/GLONASS/BeiDou/QZSS/Galileo

- 1561-1606 MHz

Surface Mount

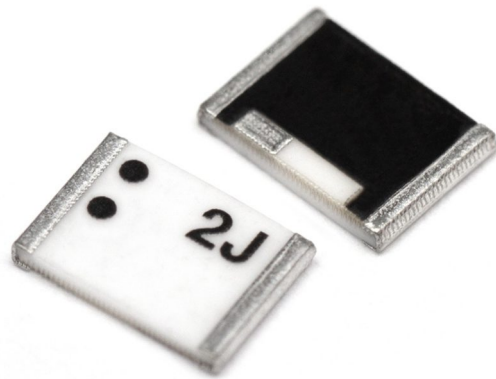
Easy to Integrate

Compact size

Ceramic Material

Ground Plane Dependent

Dimensions 5.2 x 3.7 x 0.7 mm



## 1. Antenna and electrical specifications

| Parameters               | GNSS Ceramic Surface Mount Antenna |                  |           |
|--------------------------|------------------------------------|------------------|-----------|
|                          | BeiDou                             | GPS/QZSS/Galileo | GLONASS   |
| <b>Standards</b>         |                                    |                  |           |
| <b>Bands (MHz)</b>       | 1561                               | 1575             | 1602      |
| <b>Frequency (MHz)</b>   | 1561.098                           | 1575.42          | 1598-1606 |
| <b>Return Loss (dB)</b>  | ~-13.6                             | ~-16.7           | ~-14.0    |
| <b>VSWR</b>              | ~1.5:1                             | ~1.3:1           | ~1.5:1    |
| <b>Efficiency (%)</b>    | ~71.8                              | ~70.0            | ~68.0     |
| <b>Peak Gain (dBi)</b>   | ~-2.2                              | ~-2.3            | ~-2.3     |
| <b>Average Gain (dB)</b> | ~-1.4                              | ~-1.6            | ~-1.7     |
| <b>Impedance (Ohms)</b>  |                                    | 50               |           |
| <b>Radiation Pattern</b> |                                    | Omni-directional |           |
| <b>Polarization</b>      |                                    | Linear           |           |

### Antenna Measurement Conditions:

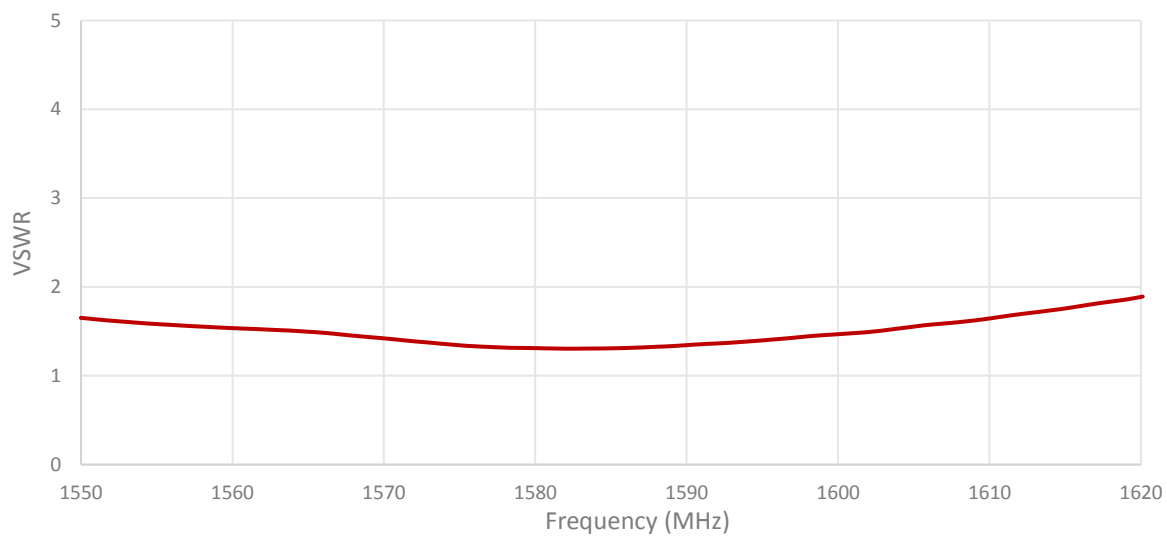
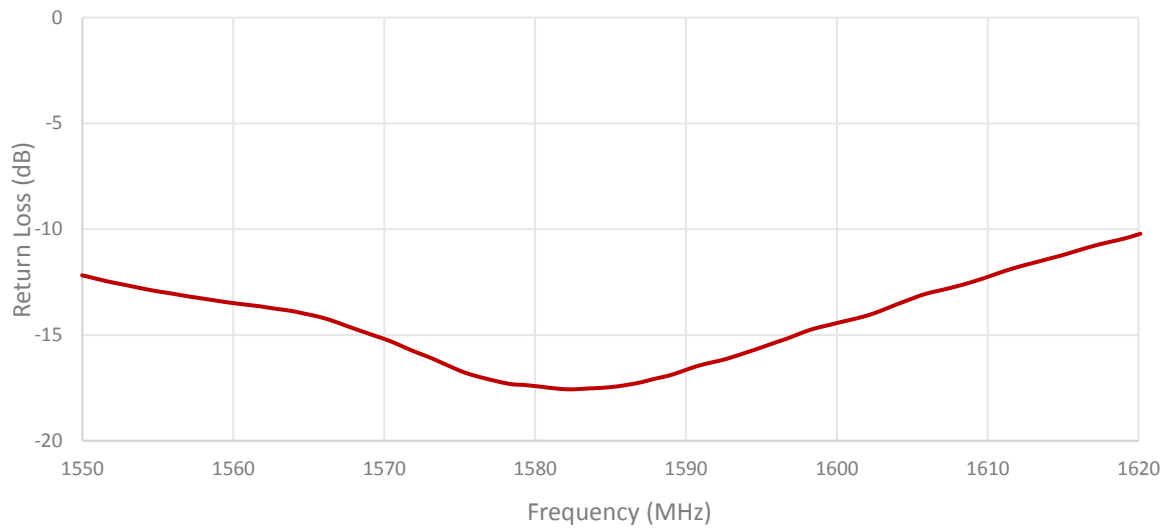
Mounted on Ground Plane of 80 x 40 mm

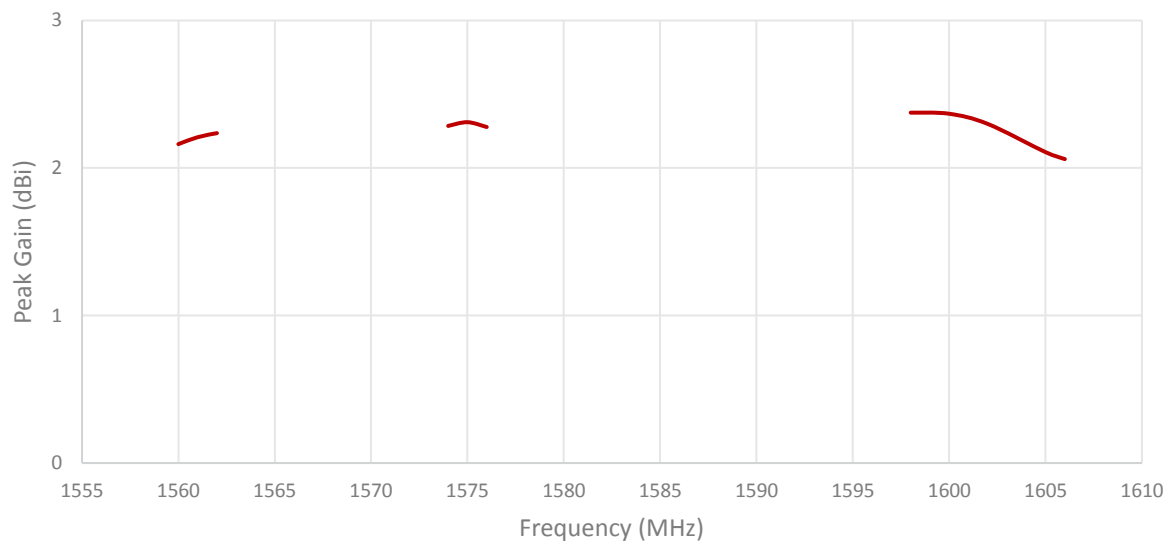
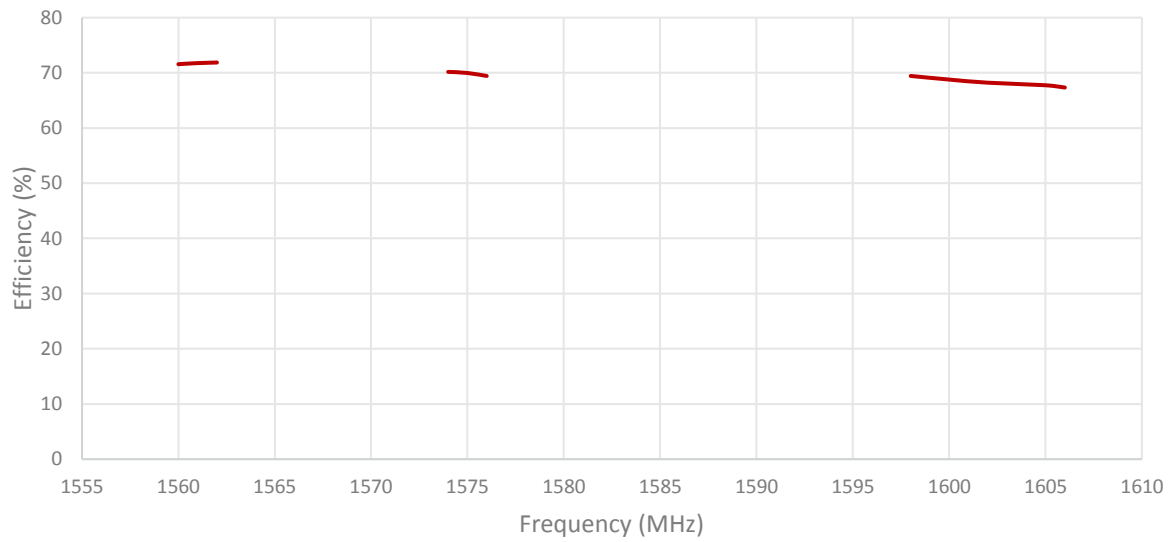
Measured in Certified CTIA 3D Anechoic Chamber

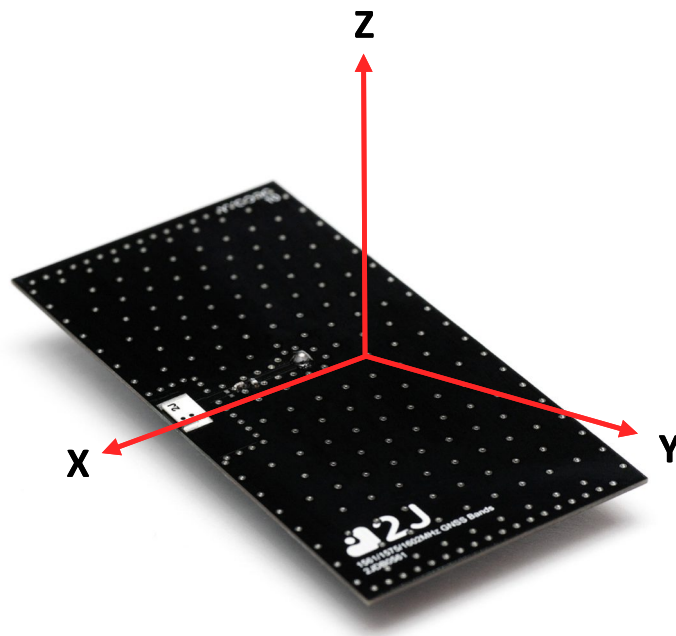
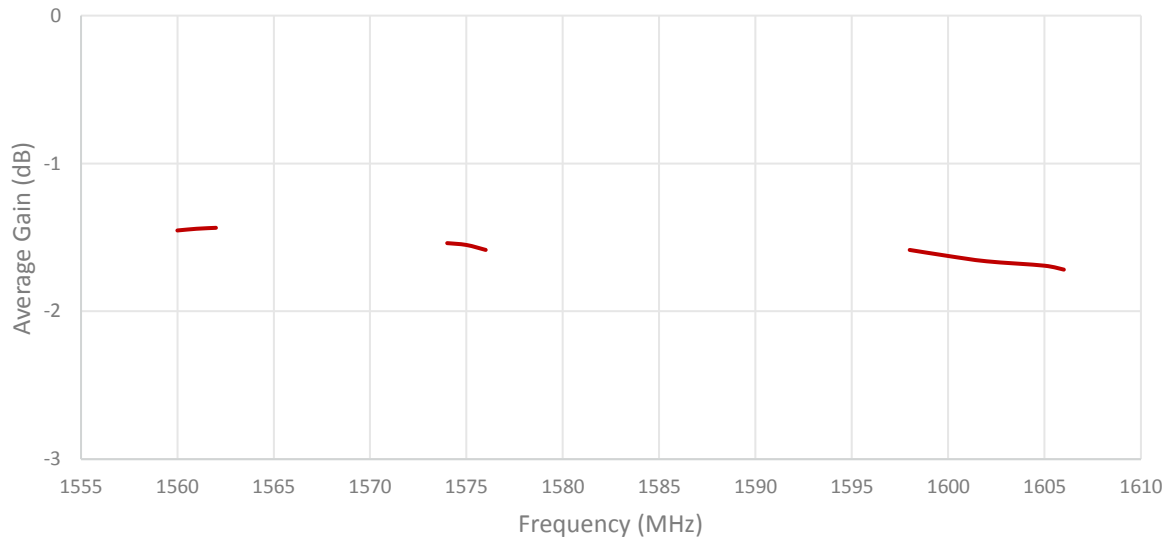
## 2. Mechanical and environmental specifications

| Specifications                   | 2JL61           |
|----------------------------------|-----------------|
| <b>Mounting Type</b>             | Surface Mount   |
| <b>Dimensions (mm)</b>           | 5.2 x 3.7 x 0.7 |
| <b>Material</b>                  | Ceramic         |
| <b>Operating Temperature (C)</b> | -40 to +85      |
| <b>Storage Temperature (C)</b>   | -40 to +85      |
| <b>Substance Compliance</b>      | RoHS            |

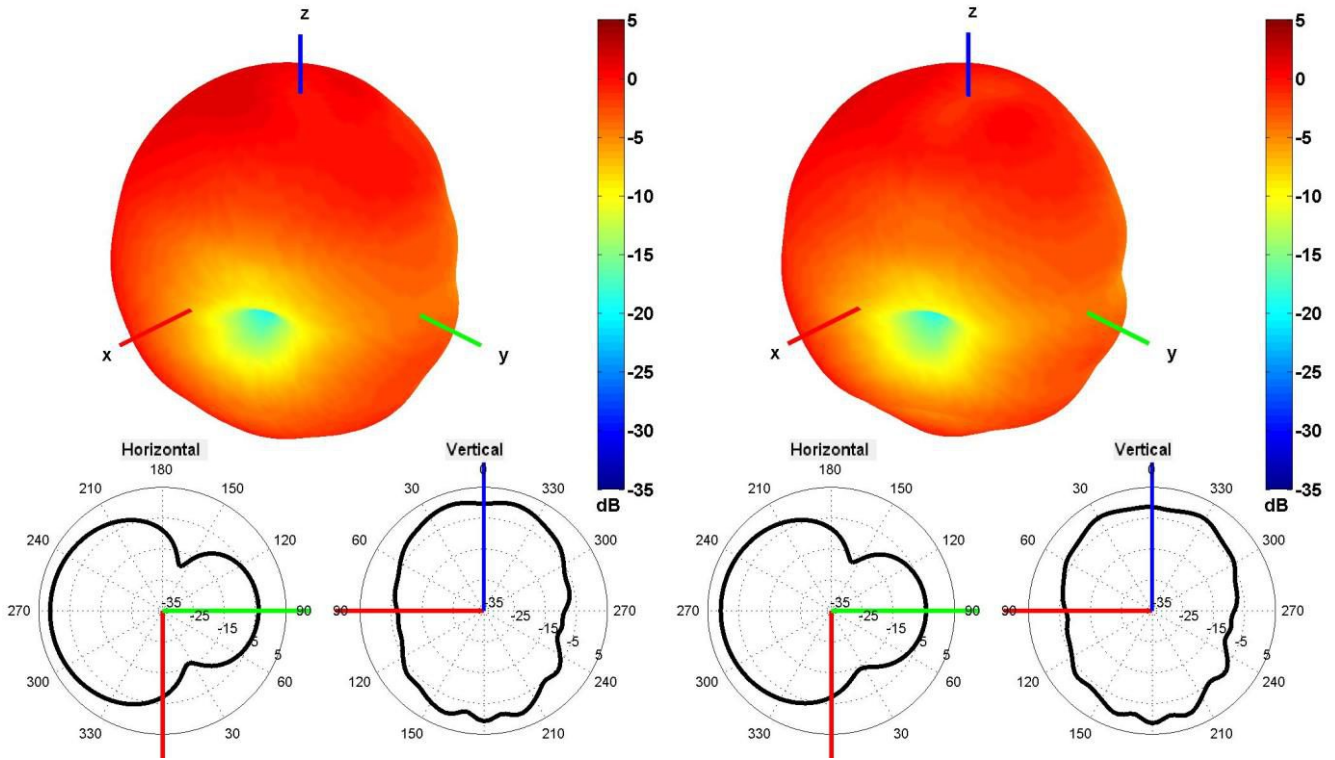
## 3. Antenna parameters



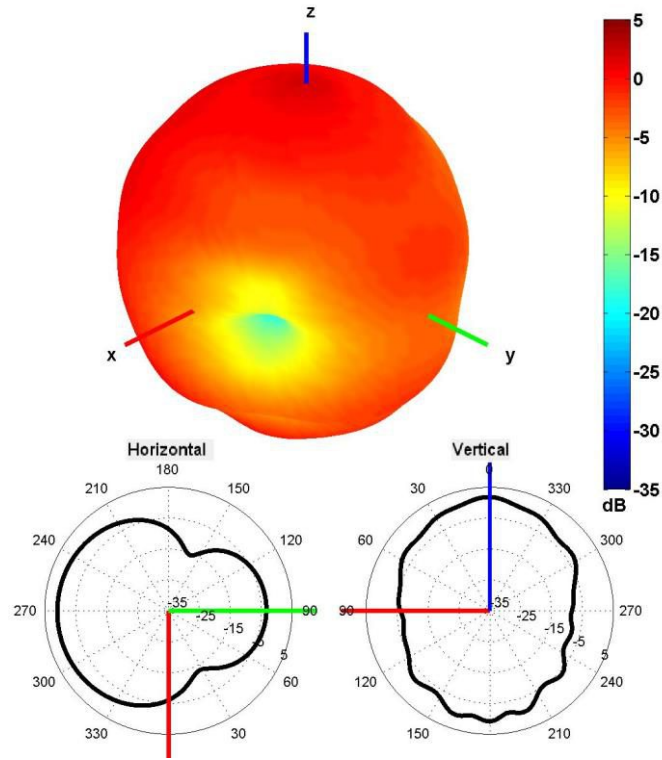




Radiation pattern reference

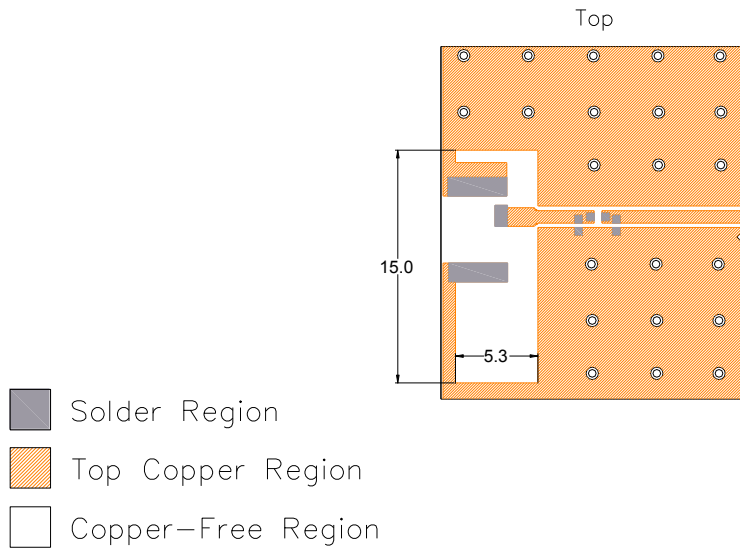


1561 MHz and 1575 MHz Radiation pattern

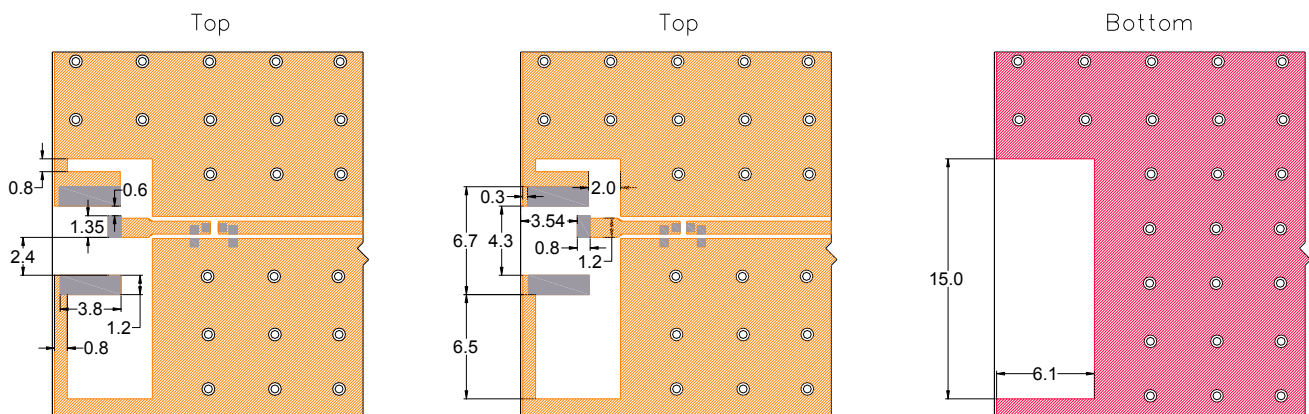


1602 MHz Radiation pattern

## 4. PCB Layout



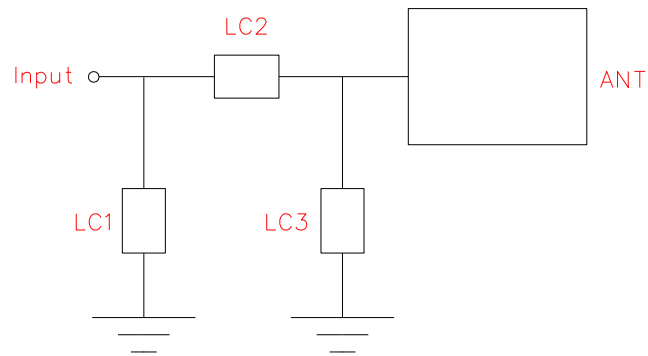
Minimum area required for antenna integration



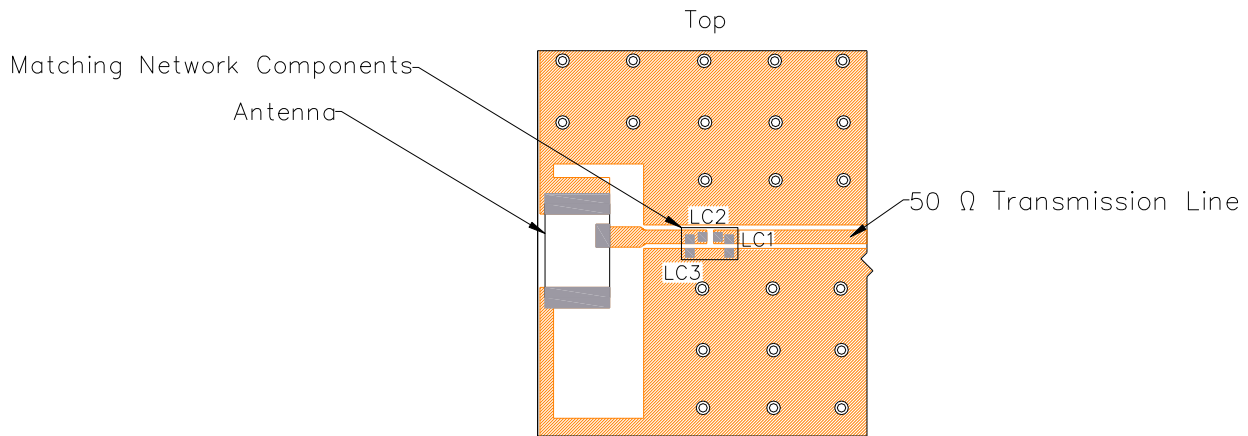
Layout dimensions for antenna integration (mm)






## 5. Matching Components

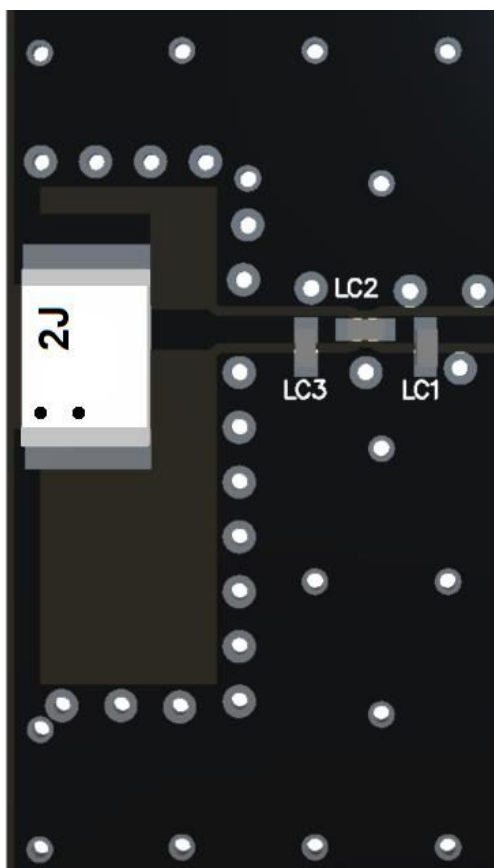


Matching Network Schematic



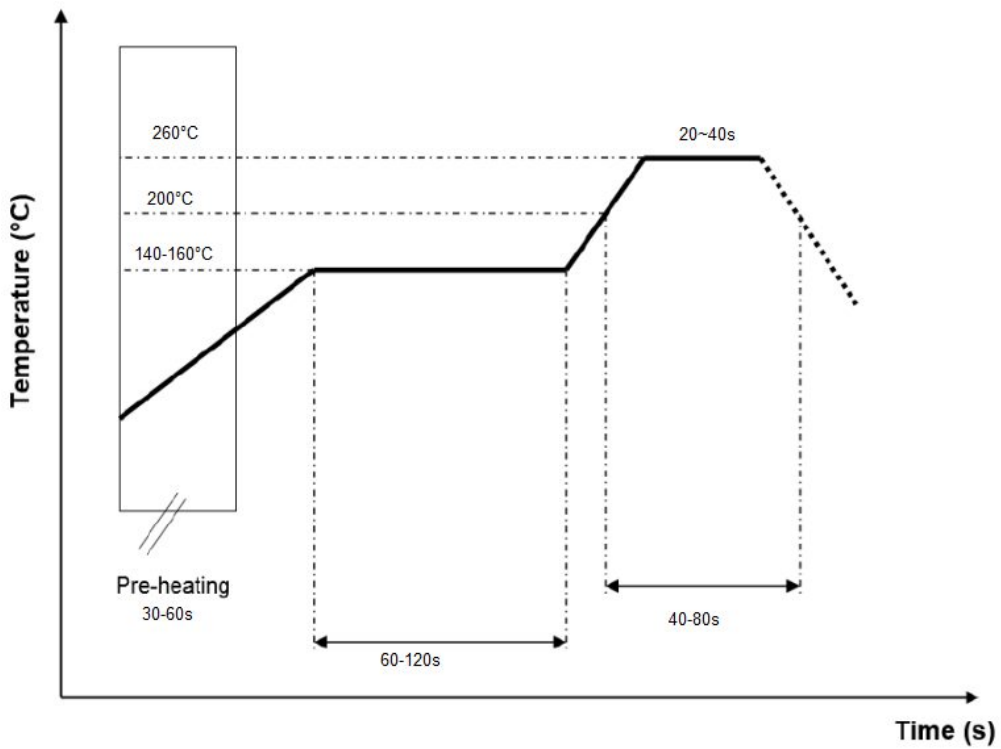
-  Solder Region
-  Top Copper Region
-  Copper-Free Region

Matching network drawing (LC1=4.7nH±0.1, LC2=2.0pF ±0.1nH , LC3=OPEN)



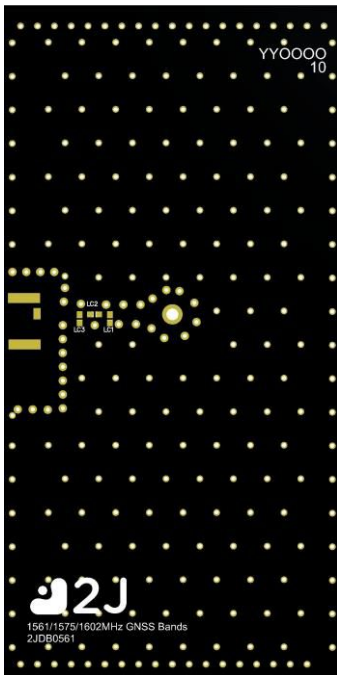
3D View of matching components and recommended values  
(LC1=4.7±0.1nH, LC2=2.0 ±0.1pF , LC3=OPEN)

## REFLOW TEMPERATURE PROFILE



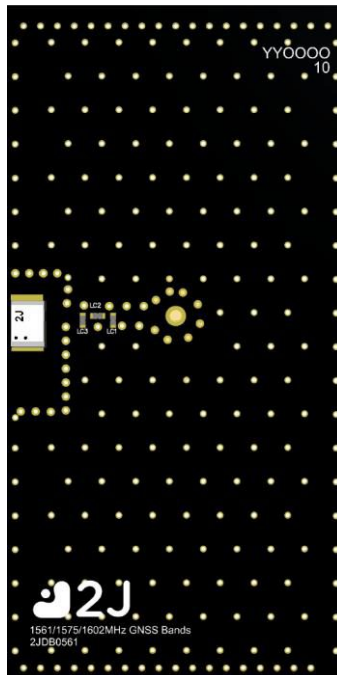
## 6. Evaluation Board

80mm x 40mm



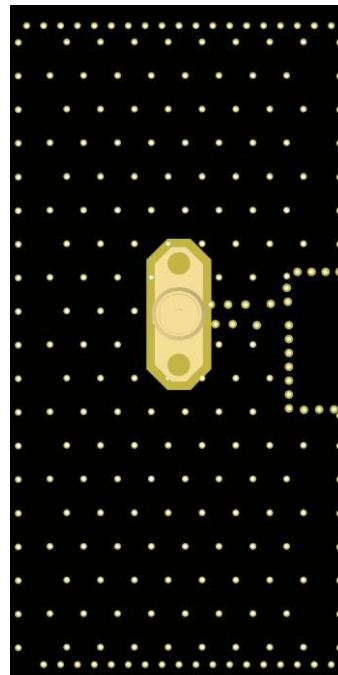
Front View without Antenna

80mm x 40mm



Front View with Antenna

80mm x 40mm



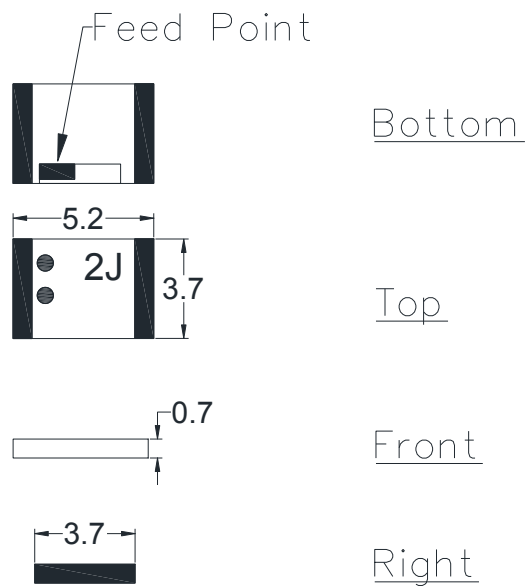
Back View

80mm x 11mm  
(PCB: 0.8mm, Antenna: 0.7mm,  
Connector: 9.5mm)



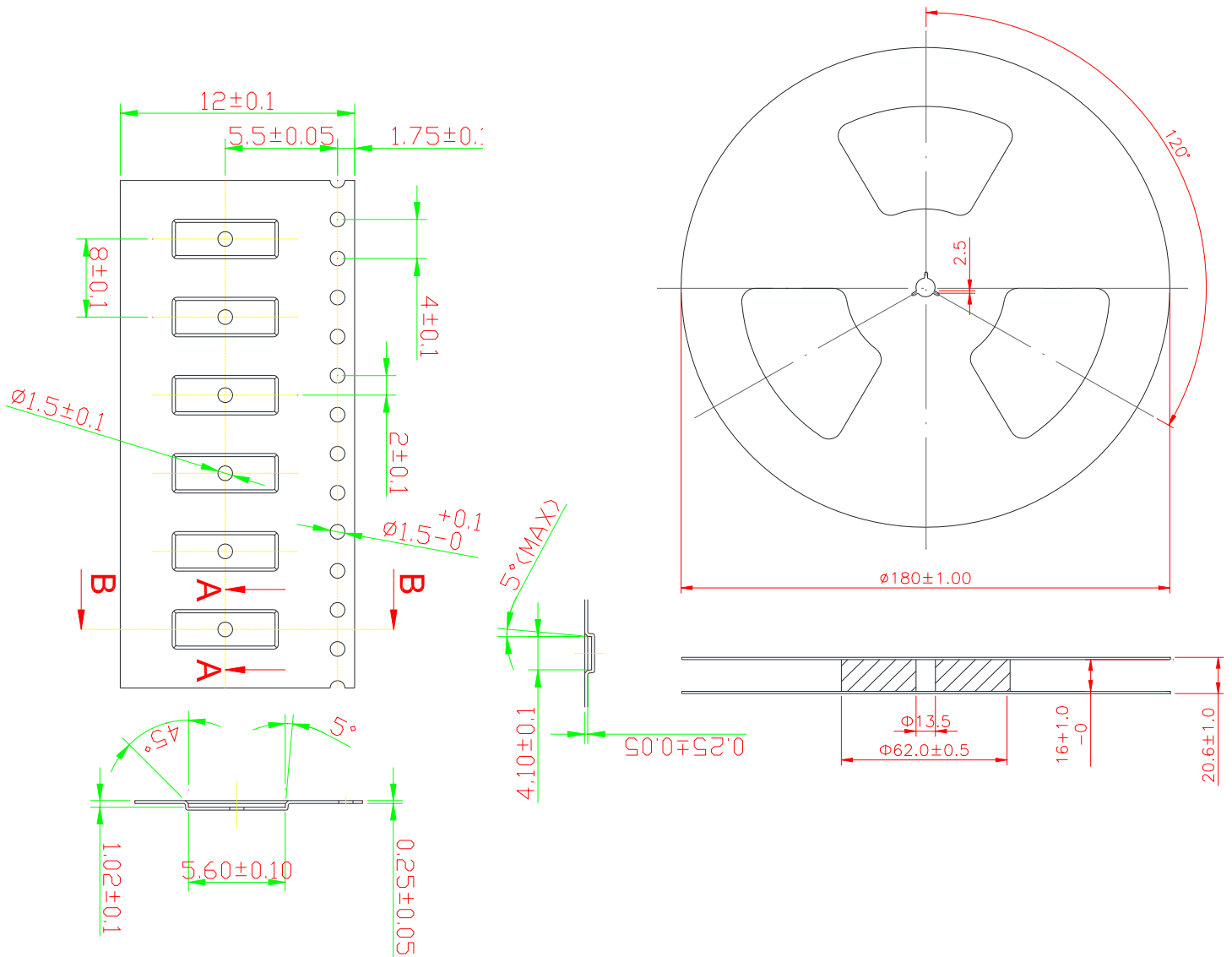
Side View

## 7. Antenna drawings



Dimensions for ceramic antenna 5.2 x 3.7 x 0.7 mm

## 8. Tape and Reel Information



Tape and Reel Specifications

## 9. Packaging

### PACKAGING SPECIFICATION

|                                    |                  |
|------------------------------------|------------------|
| <b>Antenna</b>                     | 2JL61            |
| <b>REEL</b>                        |                  |
| <b>Max Quantity per Reel</b>       | 2000             |
| <b>REEL BOX</b>                    |                  |
| <b>Reels per Box</b>               | 1                |
| <b>Max Quantity per Box</b>        | 2000             |
| <b>Reel Box Dimensions (cm)</b>    | 35.5 x 33.5 x 4  |
| <b>Reel Box Weight (Kg)</b>        | 0.68             |
| <b>CARTON</b>                      |                  |
| <b>Reels per Carton</b>            | 4                |
| <b>Max Quantity per Carton</b>     | 8,000            |
| <b>Reel Carton Dimensions (cm)</b> | 38.5 x 36.5 x 21 |
| <b>Reel Carton Weight (Kg)</b>     | 2.72             |

### Storage Conditions:

#### (a) 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 delivery.

#### (b) On board:

The temperature should be within -40 ~ 85°C and humidity should be less than 85% RH

## 5. Antenna Images

