

## 2JL60

### GNSS Ceramic Surface Mount

#### Key Features

2GPS/GLONASS/BeiDou/QZSS/Galileo

- 1561-1606 MHz

Surface Mount

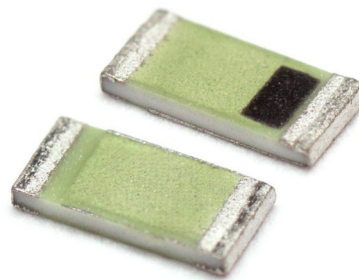
Easy to Integrate

Compact size

Ceramic Material

Ground Plane Dependent

Dimensions 3.2 x 1.6 x 0.5 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>	~-12.3	~-20.5	~-13.8
<b>VSWR</b>	~1.6:1	~1.2:1	~1.5:1
<b>Efficiency (%)</b>	~64.6	~67.2	~61.1
<b>Peak Gain (dBi)</b>	~1.7	~2.3	~1.8
<b>Average Gain (dB)</b>	~-1.9	~-1.7	~-2.1
<b>Impedance (Ohms)</b>		50	
<b>Radiation Pattern</b>		Omni-directional	
<b>Polarization</b>		Linear	

### Antenna Measurement Conditions:

Free Space

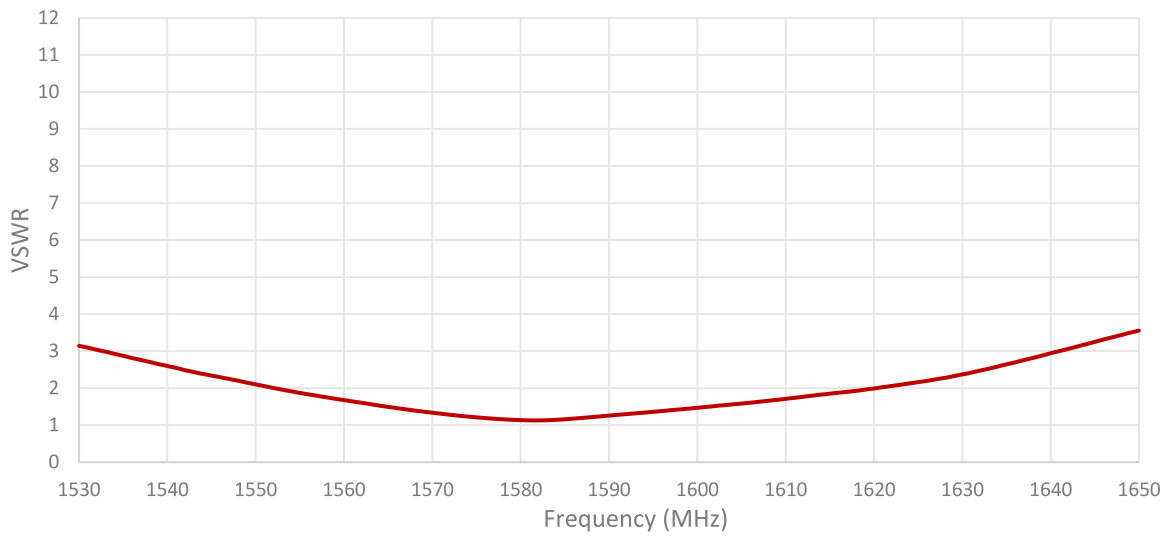
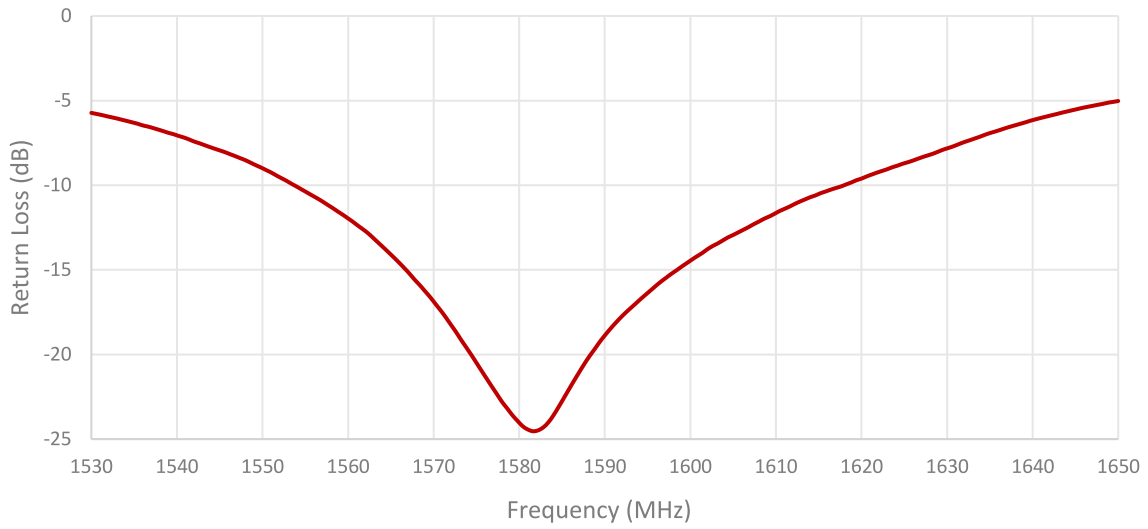
Mounted on Ground Plane of 80 x 40 mm

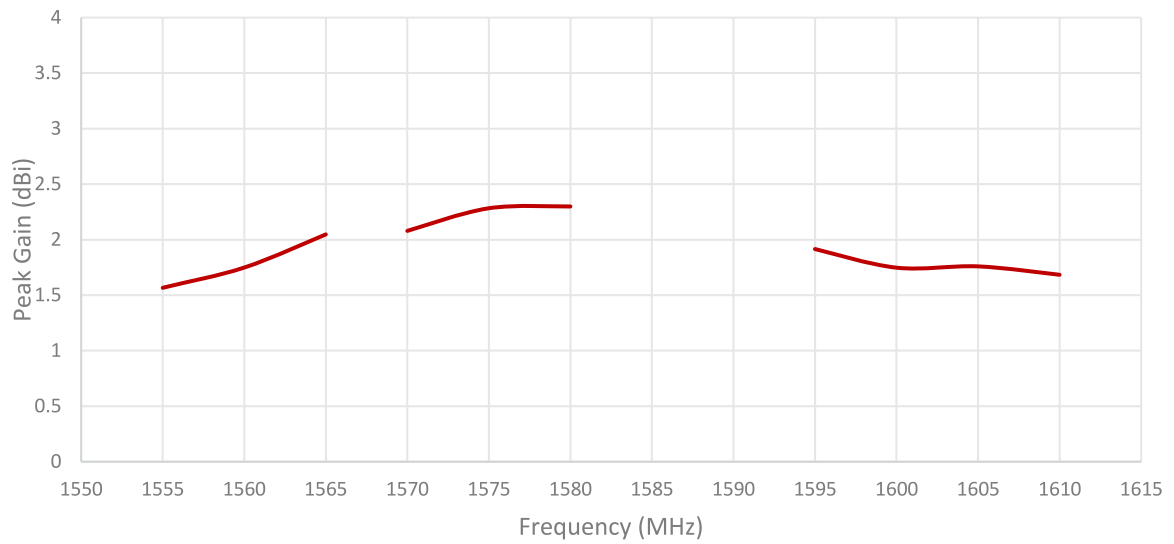
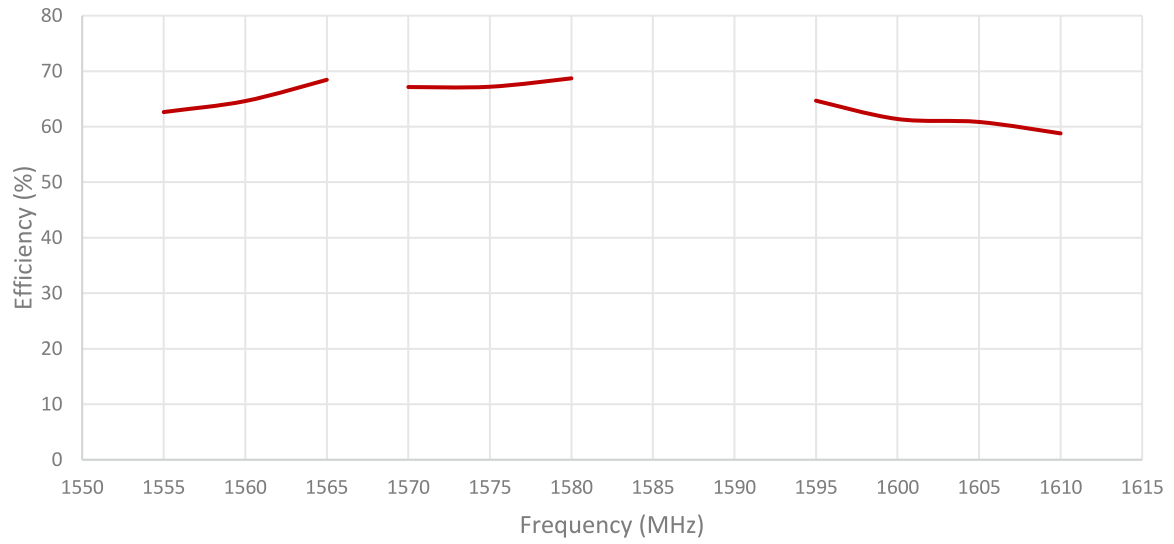
Measured in Certified CTIA 3D Anechoic Chamber

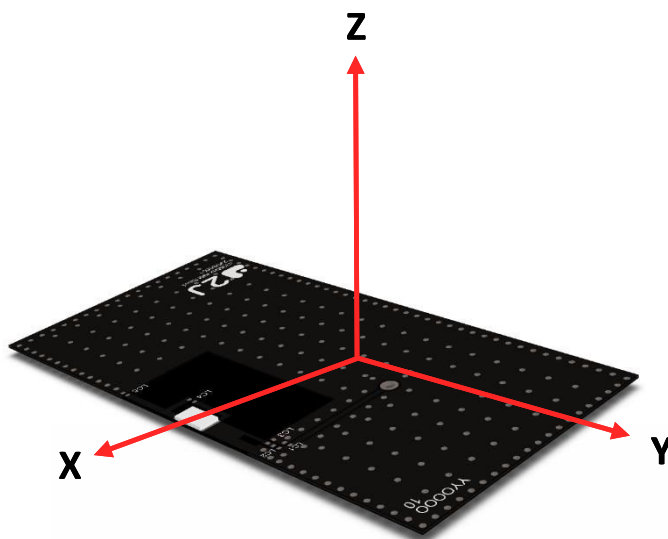
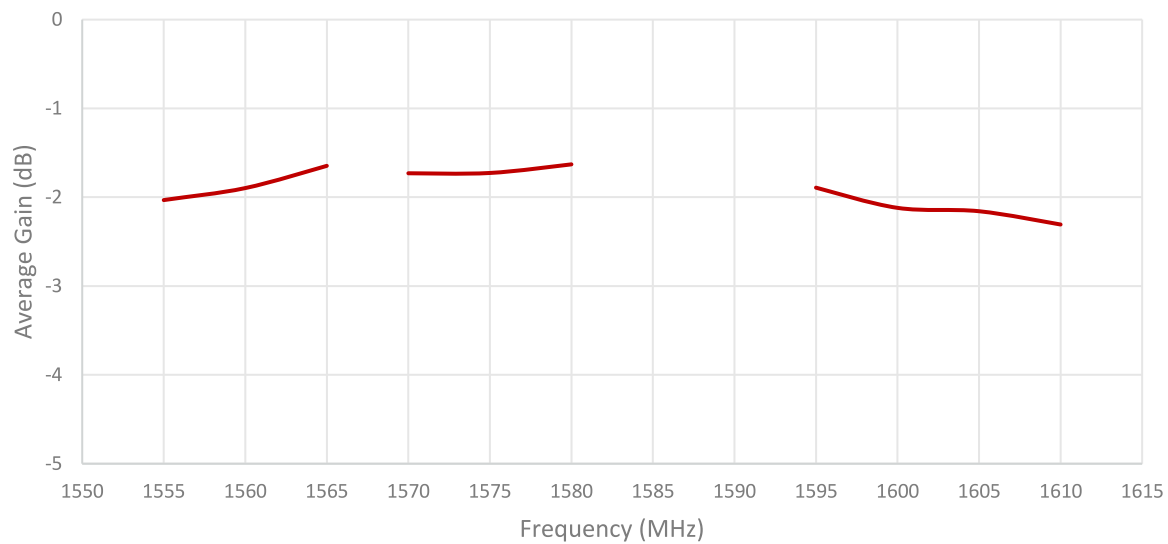
## 2. Mechanical and environmental specifications

Specifications	2JL60
<b>Mounting Type</b>	Surface Mount
<b>Dimensions (mm)</b>	3.2 x 1.6 x 0.5
<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

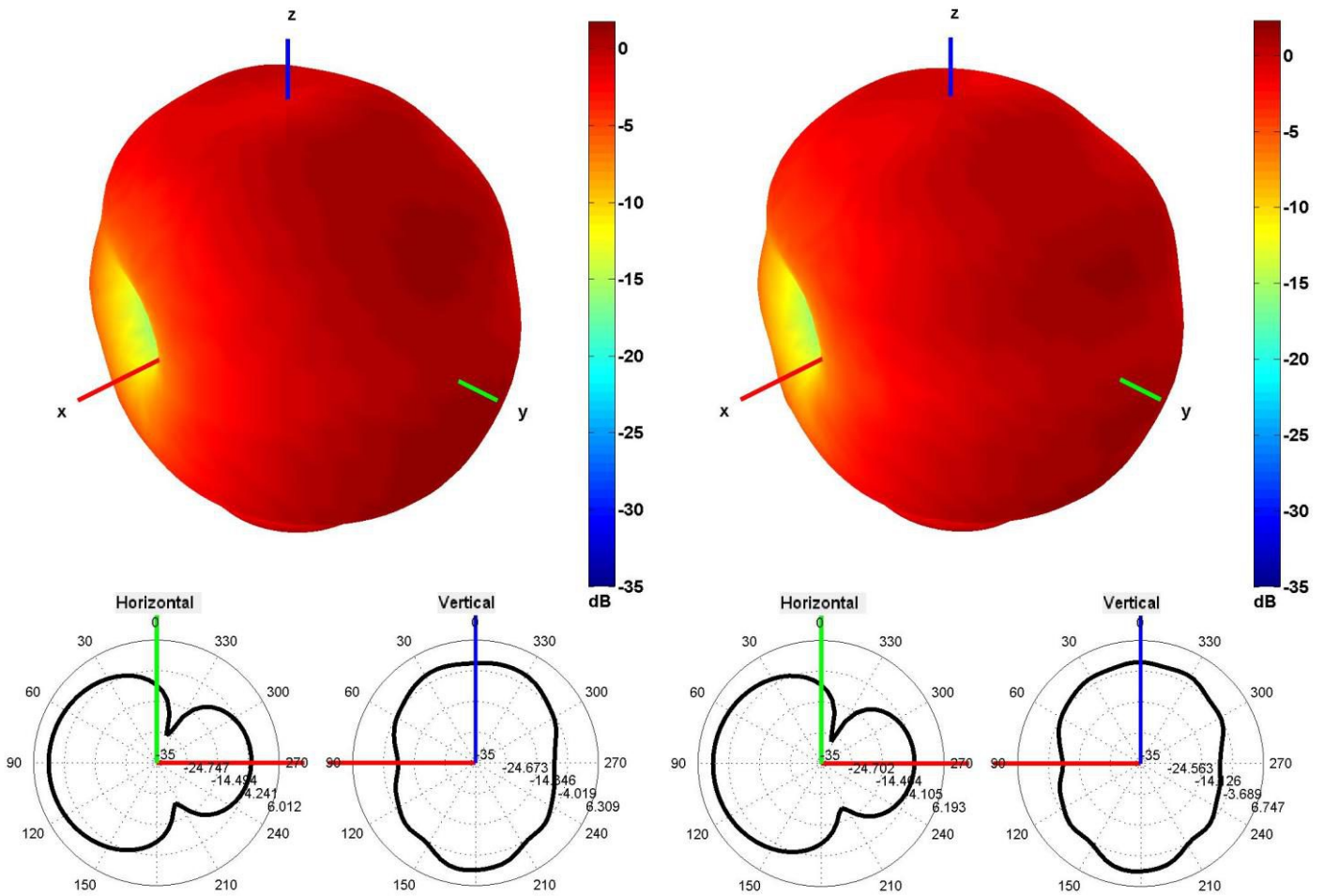
### 3. Antenna parameters



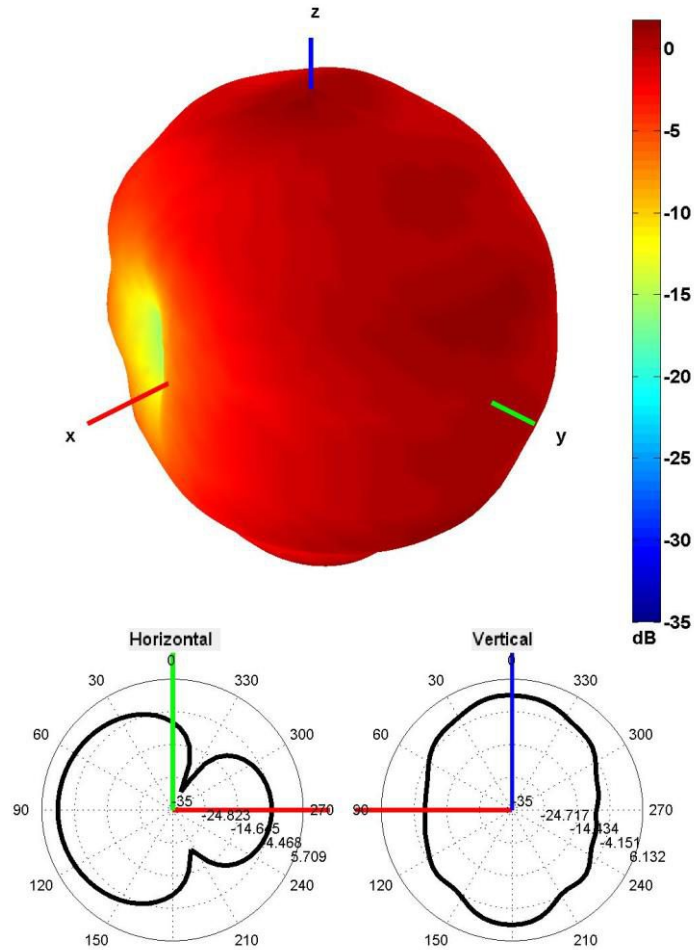




Radiation pattern reference

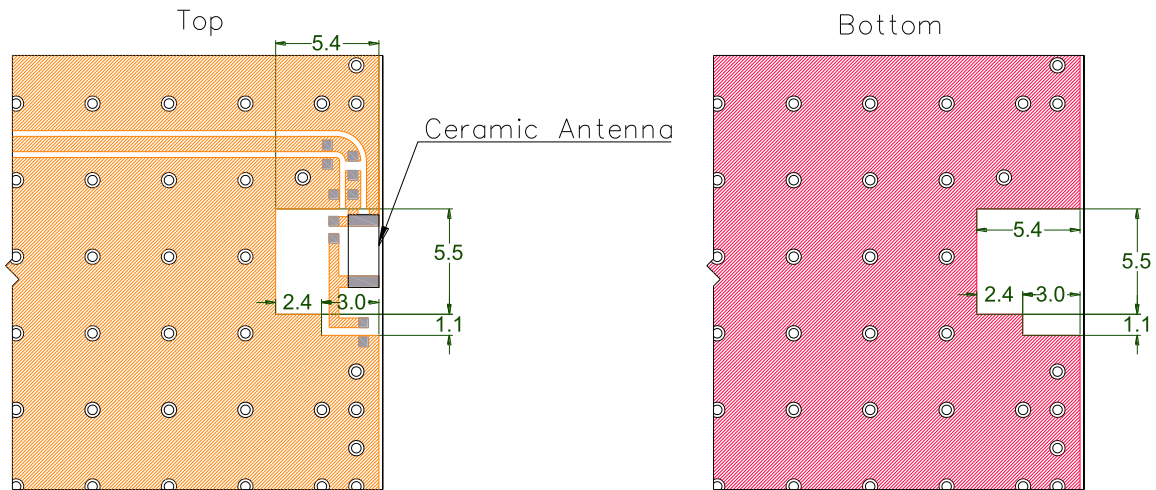






1561 AND 1575 MHz RADIATION PATTERN

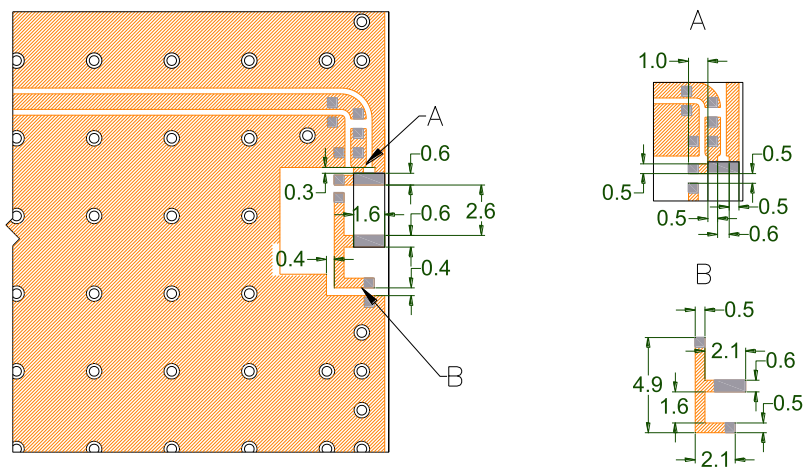





1602 MHz RADIATION PATTERN

## 4. PCB Layout



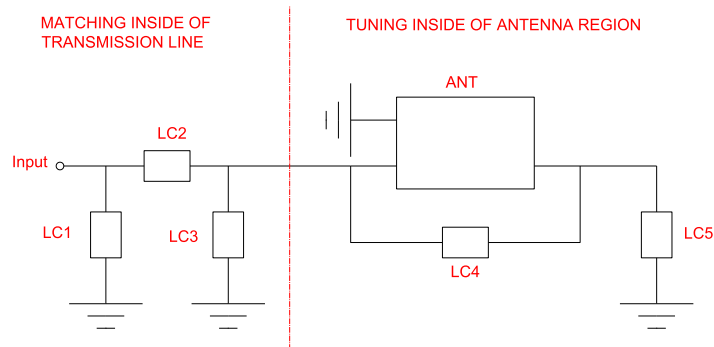
-  Solder Region
  -  Top Copper Region
  -  Bottom Copper Region
  -  Copper-Free Region
- Minimum area required for antenna integration**



-  Solder Region
  -  Top Copper Region
  -  Copper-Free Region
- Layout dimensions for antenna integration (mm)**

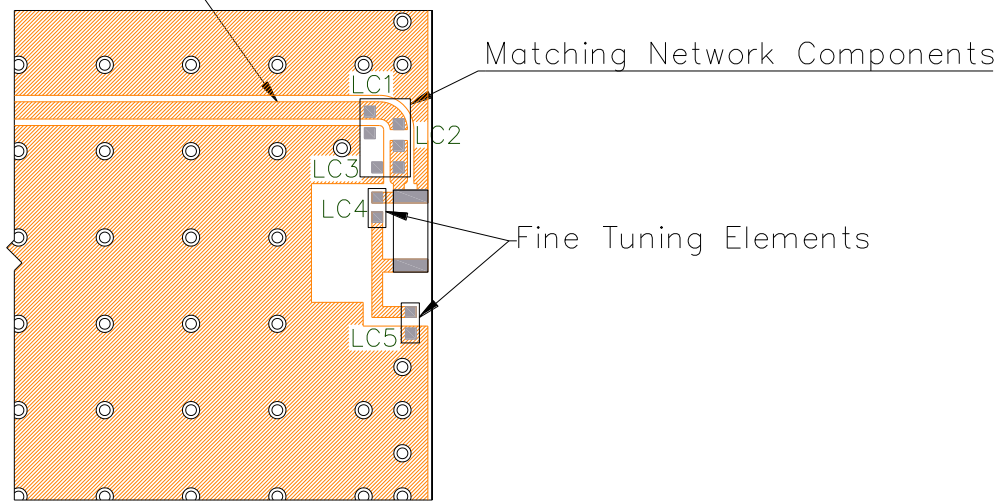





## 5. Matching Components



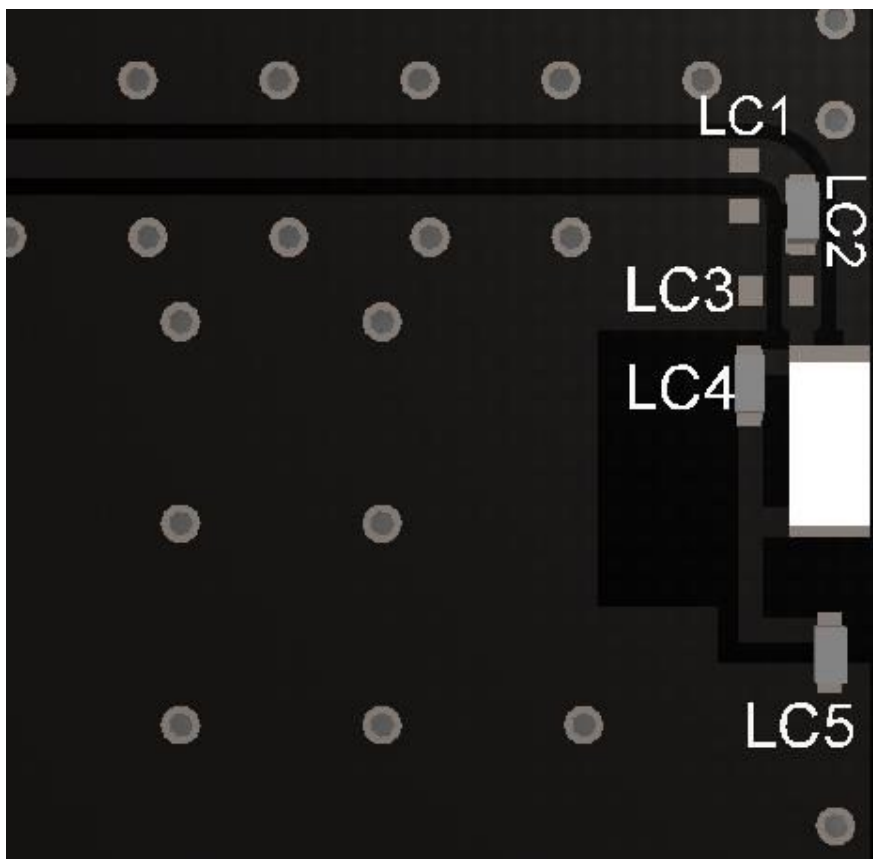
Matching Network Schematic

Transmission Line (50Ω)



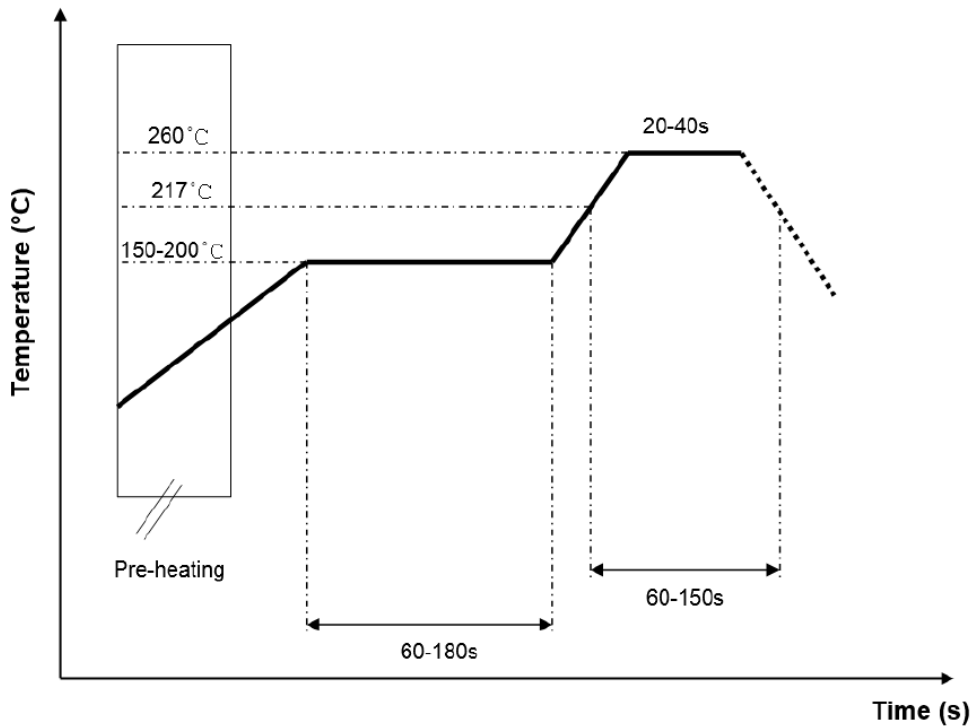
-  Solder Region
-  Top Copper Region
-  Copper-Free Region

Matching network drawing (LC1=OPEN, LC2=2.2nH ±0.1nH , LC3=OPEN, LC4=1.0pF ±0.05pF, LC5=2.2pF ±0.05pF)



3D View of matching components and recommended values

**REFLOW TEMPERATURE PROFILE**



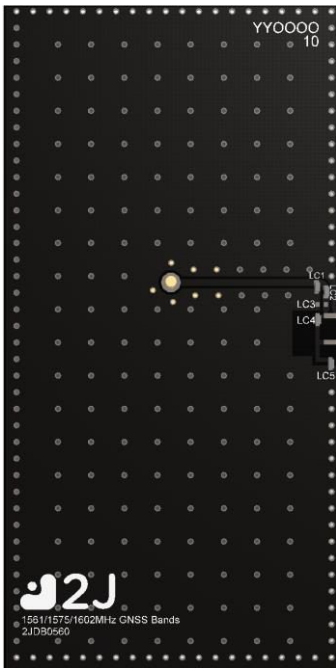
**6. Evaluation Board**

80mm x 40mm

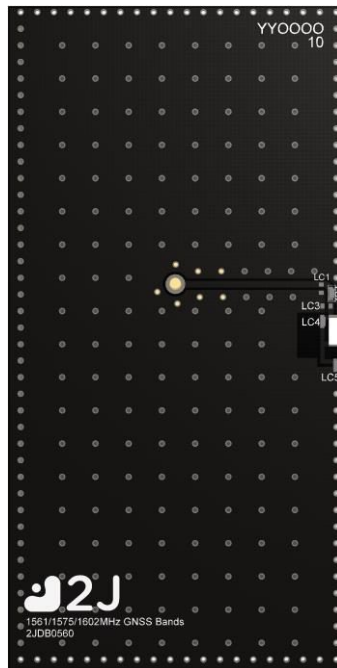
80mm x 40mm

80mm x 40mm

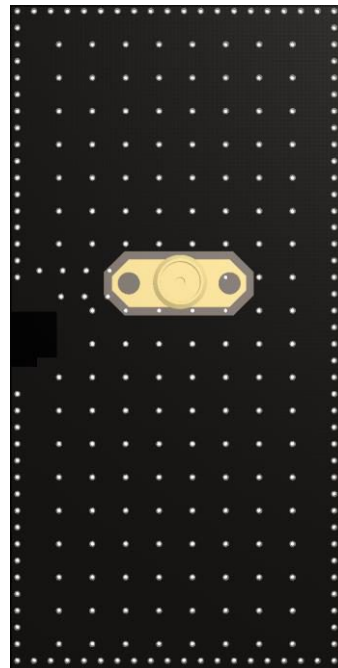
80mm x 10.8mm  
(PCB: 0.8mm, Antenna: 0.5mm,  
Connector: 9.5mm)



Front View without Antenna



Front View with Antenna



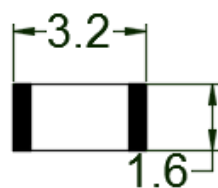
Back View



Side View

## 7. Antenna drawings

Bottom

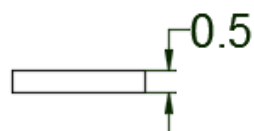


Top

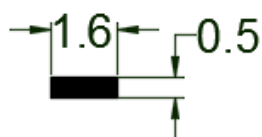


Feed Point

Front

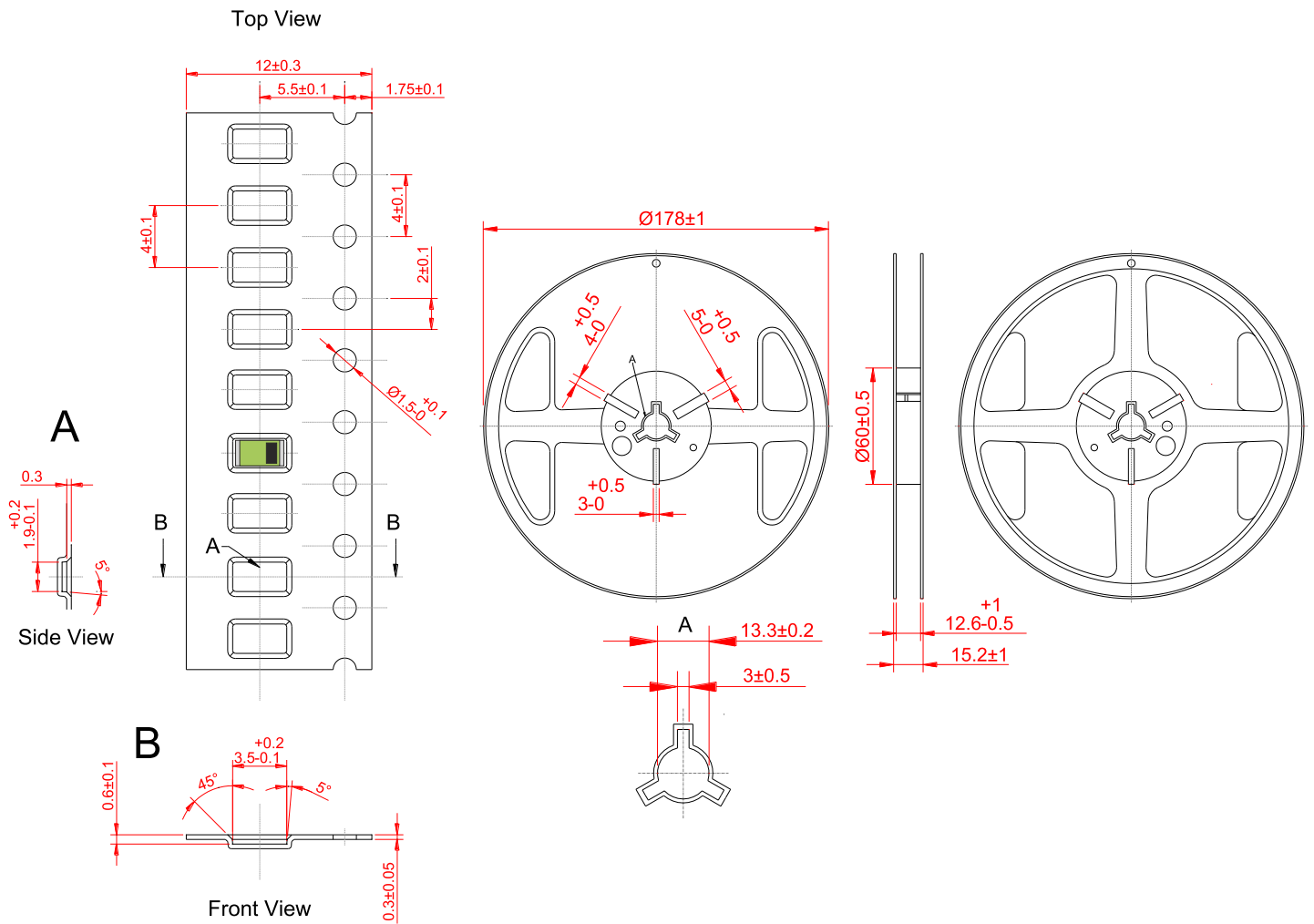


Right



Dimensions for ceramic antenna 3.2 x 1.6 x 0.5 mm

## 8. Tape and Reel Information



Tape and Reel Specifications

## 9. Packaging

### PACKAGING SPECIFICATION

<b>Antenna</b>	2JL60
<b>REEL</b>	
<b>Max Quantity per Reel</b>	6000
<b>REEL BOX</b>	
<b>Reels per Box</b>	2
<b>Max Quantity per Box</b>	12000
<b>Reel Box Dimensions (cm)</b>	18 x 18 x 3.6
<b>Reel Box Weight (Kg)</b>	0.7
<b>CARTON</b>	
<b>Reels per Carton</b>	2
<b>Max Quantity per Carton</b>	120,000
<b>Reel Carton Dimensions (cm)</b>	40.5 x 24.7 x 22.5
<b>Reel Carton Weight (Kg)</b>	7

### Storage Conditions:

- Storage Temperature Range: -40 °C to +85 °C
- Oxidizable material. Store for 12 months in vacuum sealed bag.
- Repack material after use by re-sealing package.

## 5. Antenna Images

