

## 2JL50

5.0 GHz ISM Surface Mount

Open Loop™ Antenna

### Key Features

#### 5.0 GHz ISM

- 4920-5925 MHz

Surface Mount

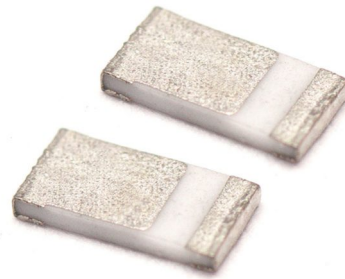
Easy to Integrate

Compact Size

Ceramic Material

Ground Plane Dependent

Dimensions 3.2 x 1.6 x 0.5 mm



## 1. Antenna and electrical specifications

Parameters	5.0 GHz ISM Antenna
<b>Standards</b>	WiFi, ISM,
<b>Band (MHz)</b>	5000
<b>Frequency (MHz)</b>	4920-5925
<b>Return Loss (dB)</b>	~-12.0
<b>VSWR</b>	~2.0:1
<b>Efficiency (%)</b>	~54.7
<b>Peak Gain (dBi)</b>	~-0.9
<b>Average Gain (dB)</b>	~-2.8
<b>Impedance (Ohm)</b>	50
<b>Polarisation</b>	Linear
<b>Radiation Pattern</b>	Omni-Directional
<b>Max. Input Power (W)</b>	10

### Antenna Measurement Conditions:

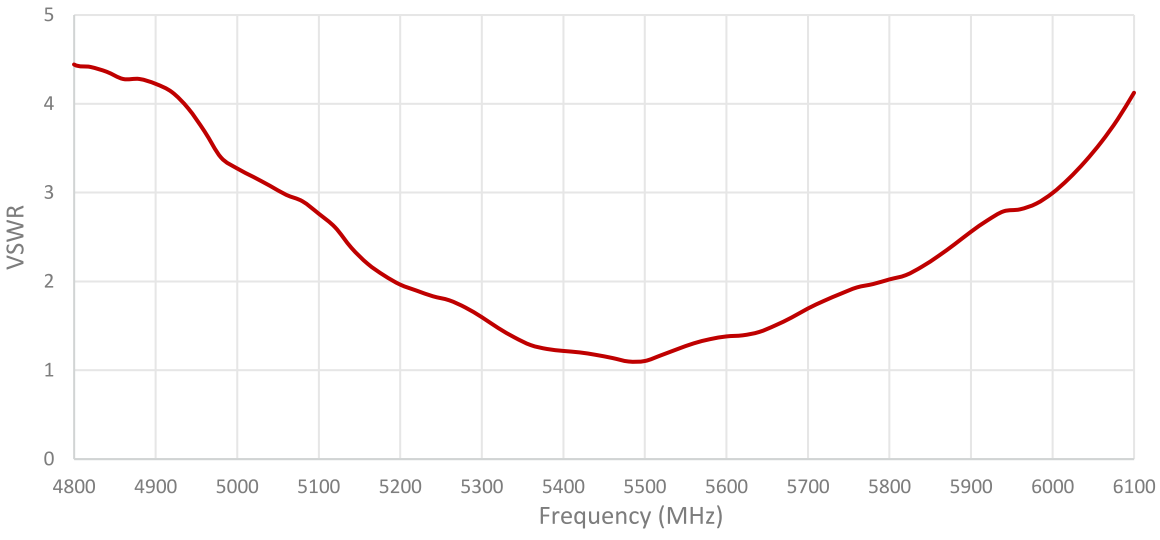
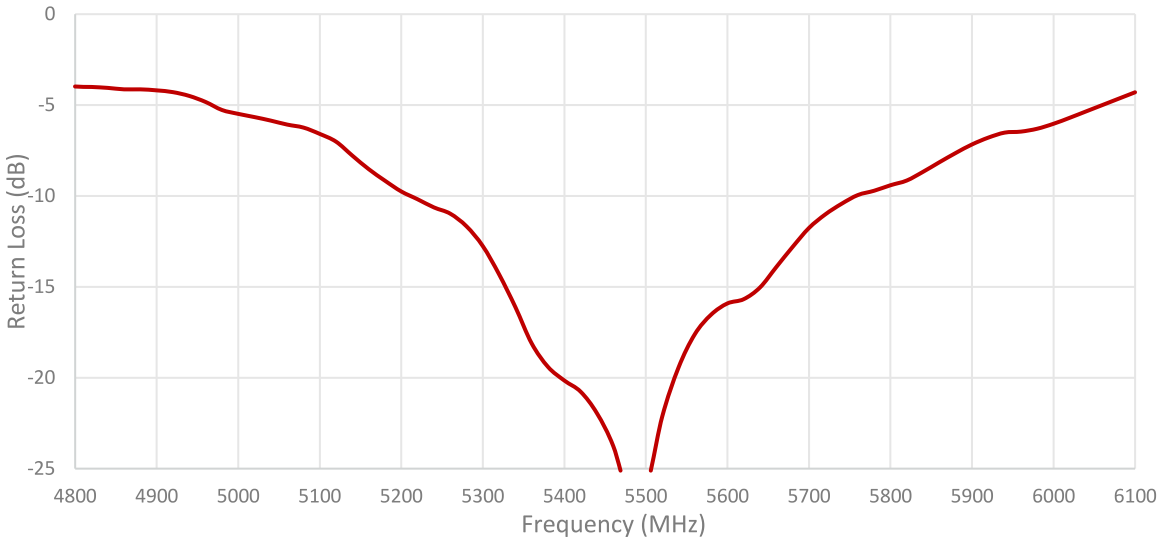
Mounted on ground plane of 80 x 40 mm

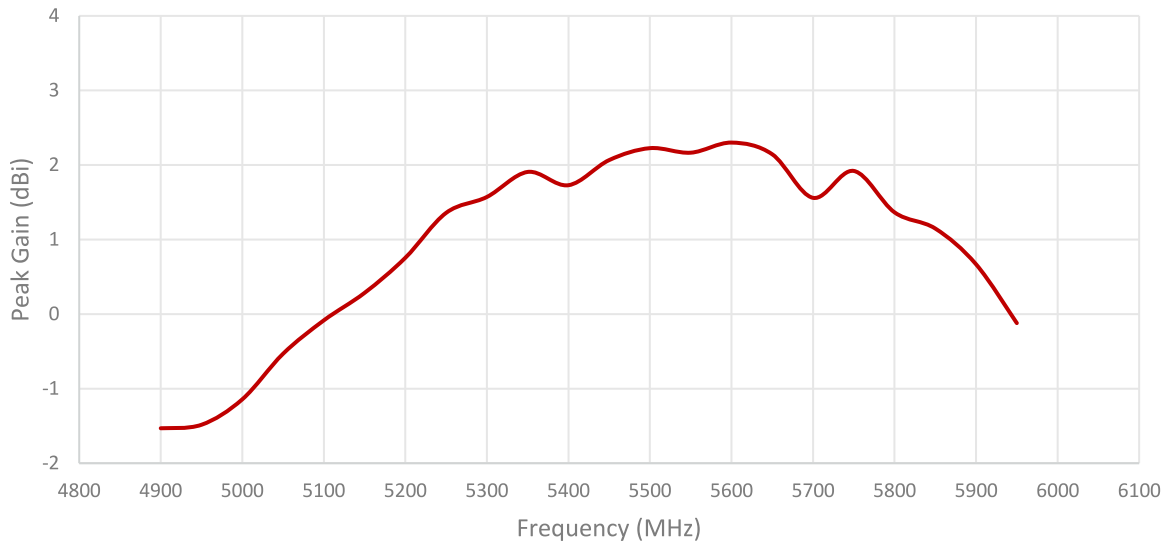
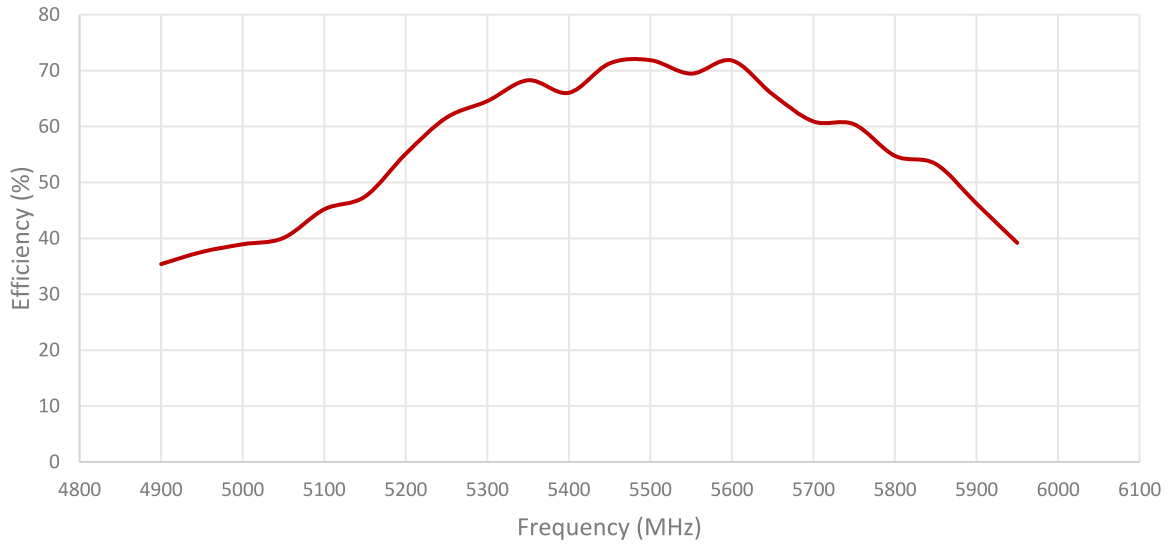
Measured in Certified CTIA 3D Anechoic Chamber

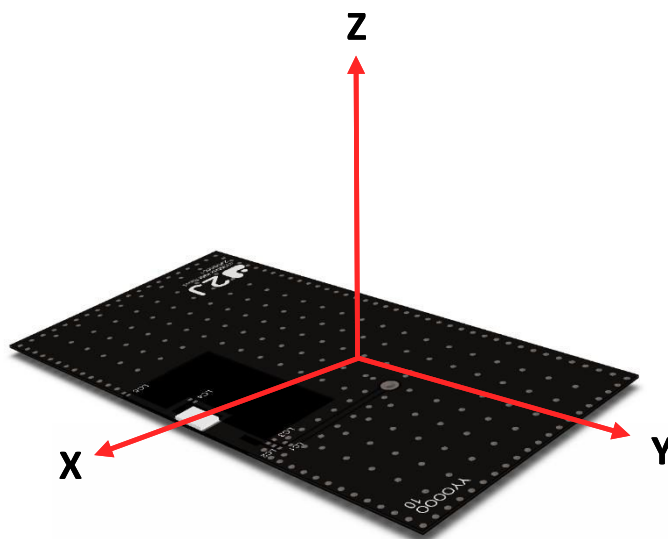
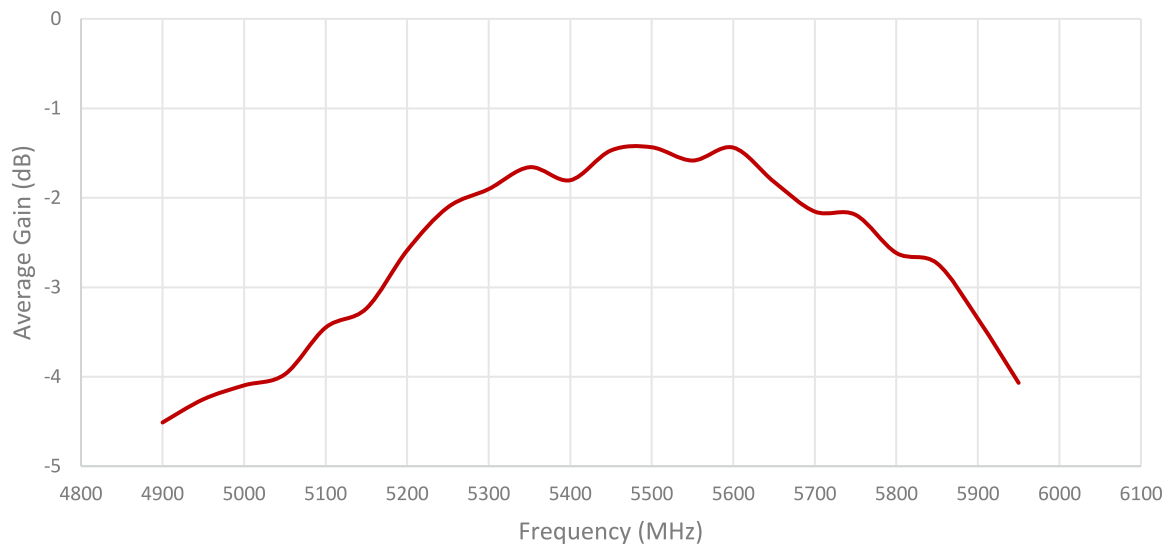
## 2. Mechanical and environmental specifications

Specifications	2JL50
<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

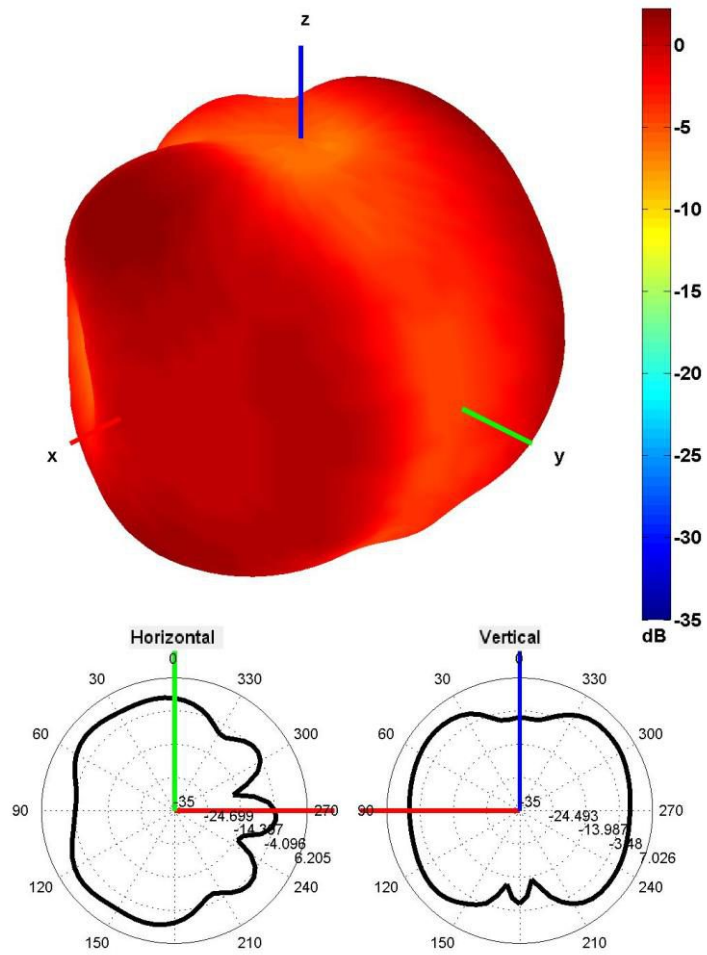
### 3. Antenna parameters





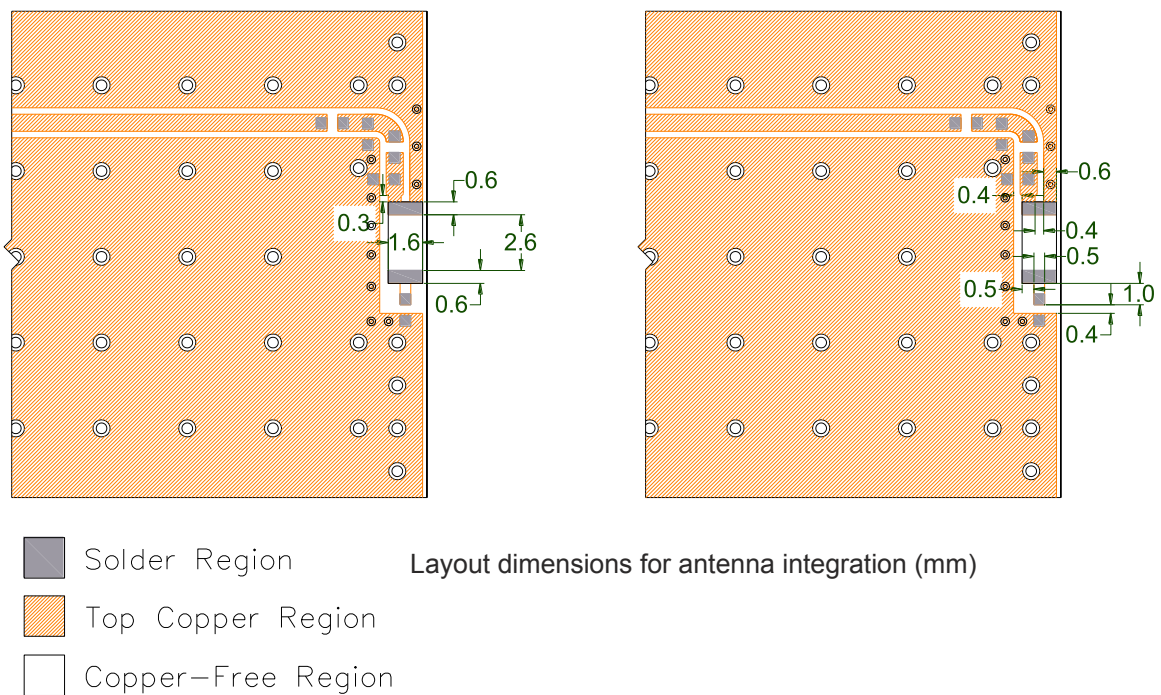
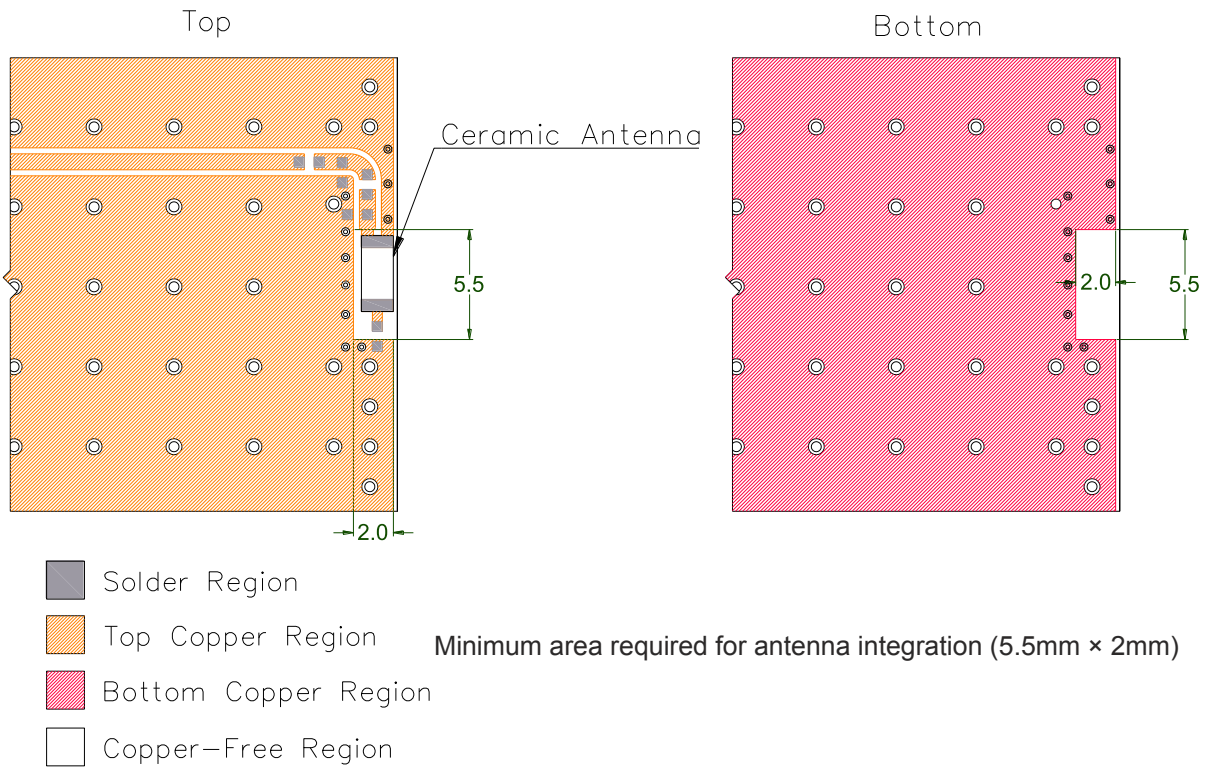


Radiation pattern reference

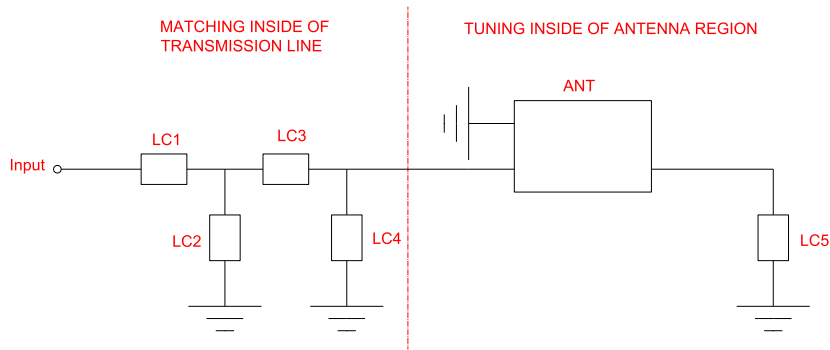


5500 MHz Radiation pattern

## 4. PCB Layout

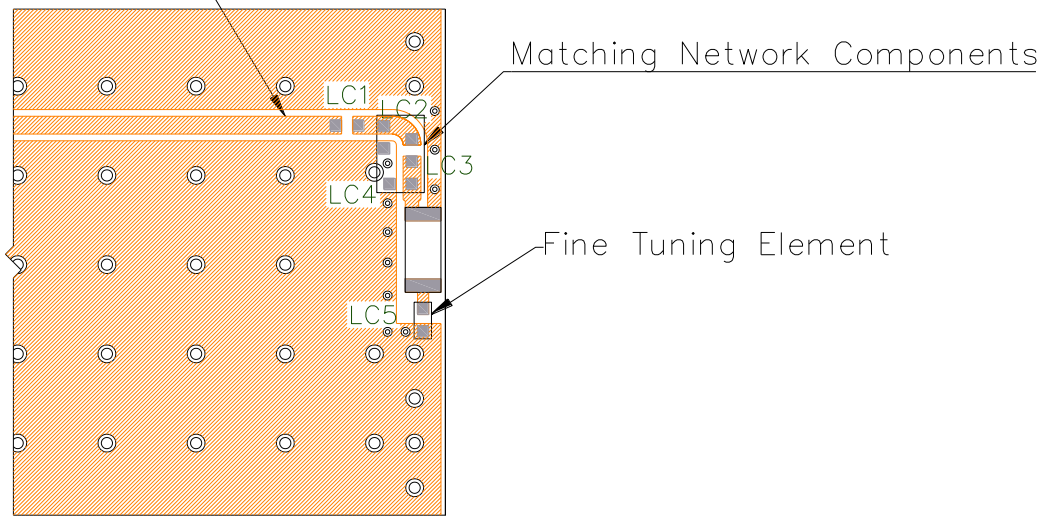





## 5. Matching Components



Matching Network Schematic

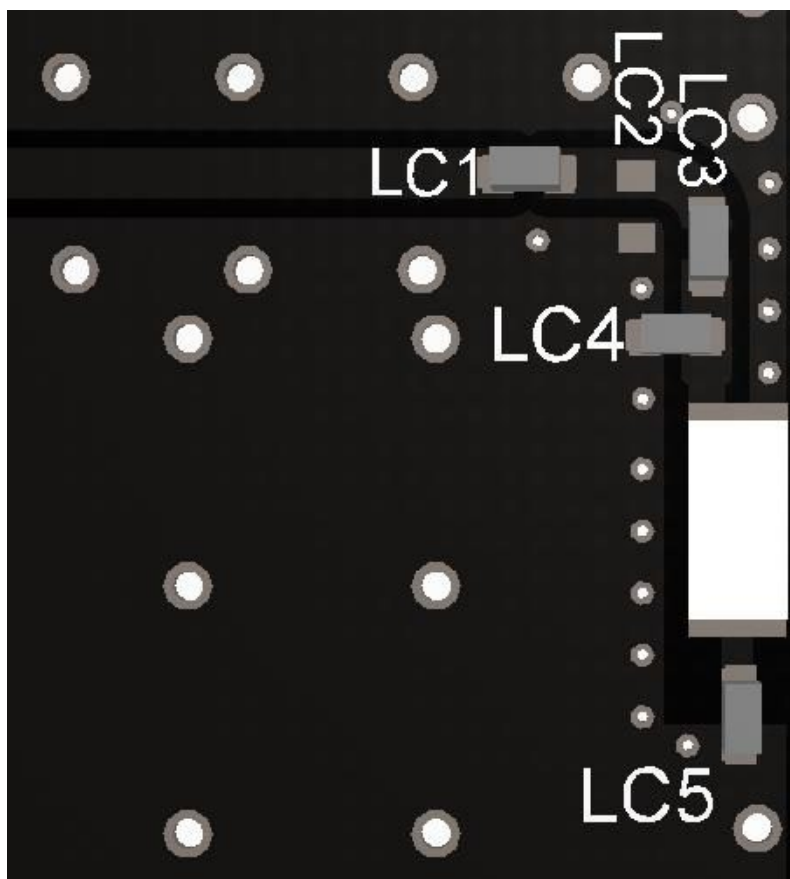
Transmission Line (50Ω)



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

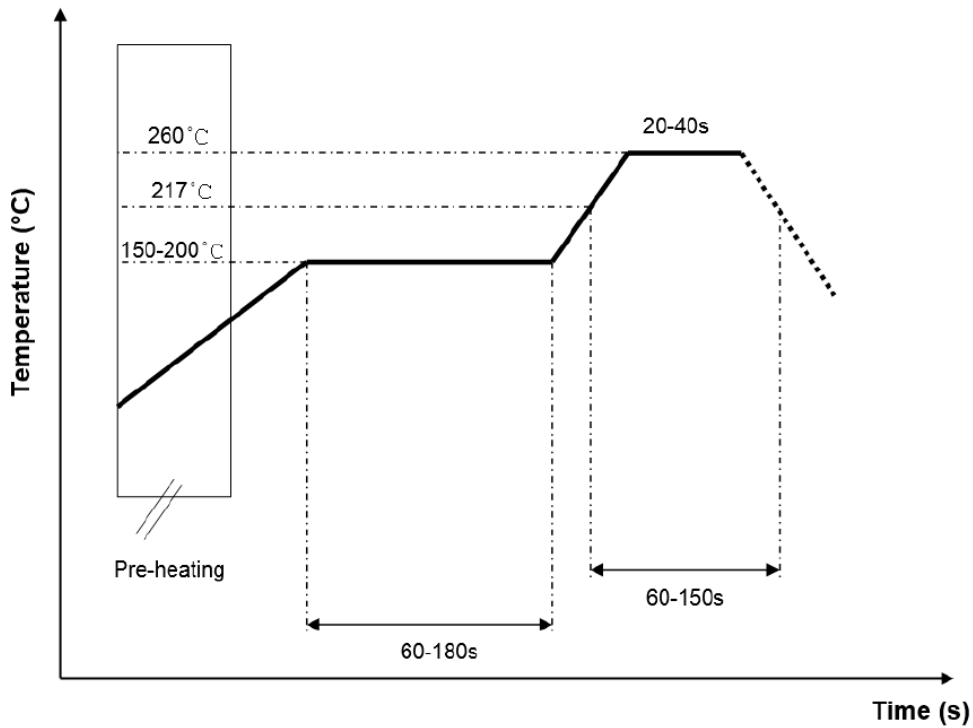
Matching network drawing (LC1=22pF±5%, LC2=OPEN, LC3=0.5pF±0.05pF, LC4=2.2nH±0.1nH, LC5=0.2pF±0.05pF)





3D View of matching components and recommended values

**REFLOW TEMPERATURE PROFILE**



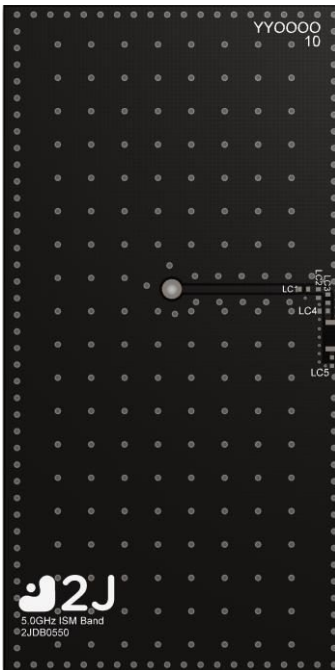
**6. Evaluation Board**

80mm x 40mm

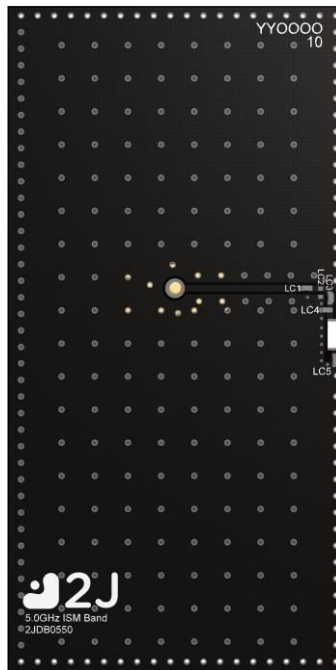
80mm x 40mm

80mm x 40mm

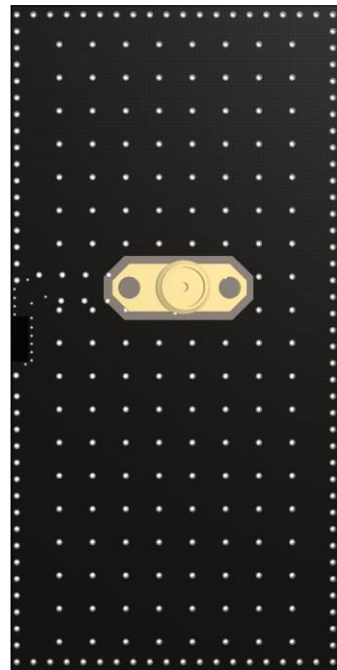
80mm x 10.8mm  
(PCB: 0.8mm, Antenna: 0.5mm,  
Connector: 9.5mm)



Front View without Antenna



Front View with Antenna

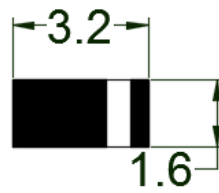


Back View



Side View

## 7. Antenna drawings

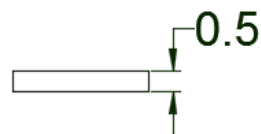


Bottom

Feed Point



Top



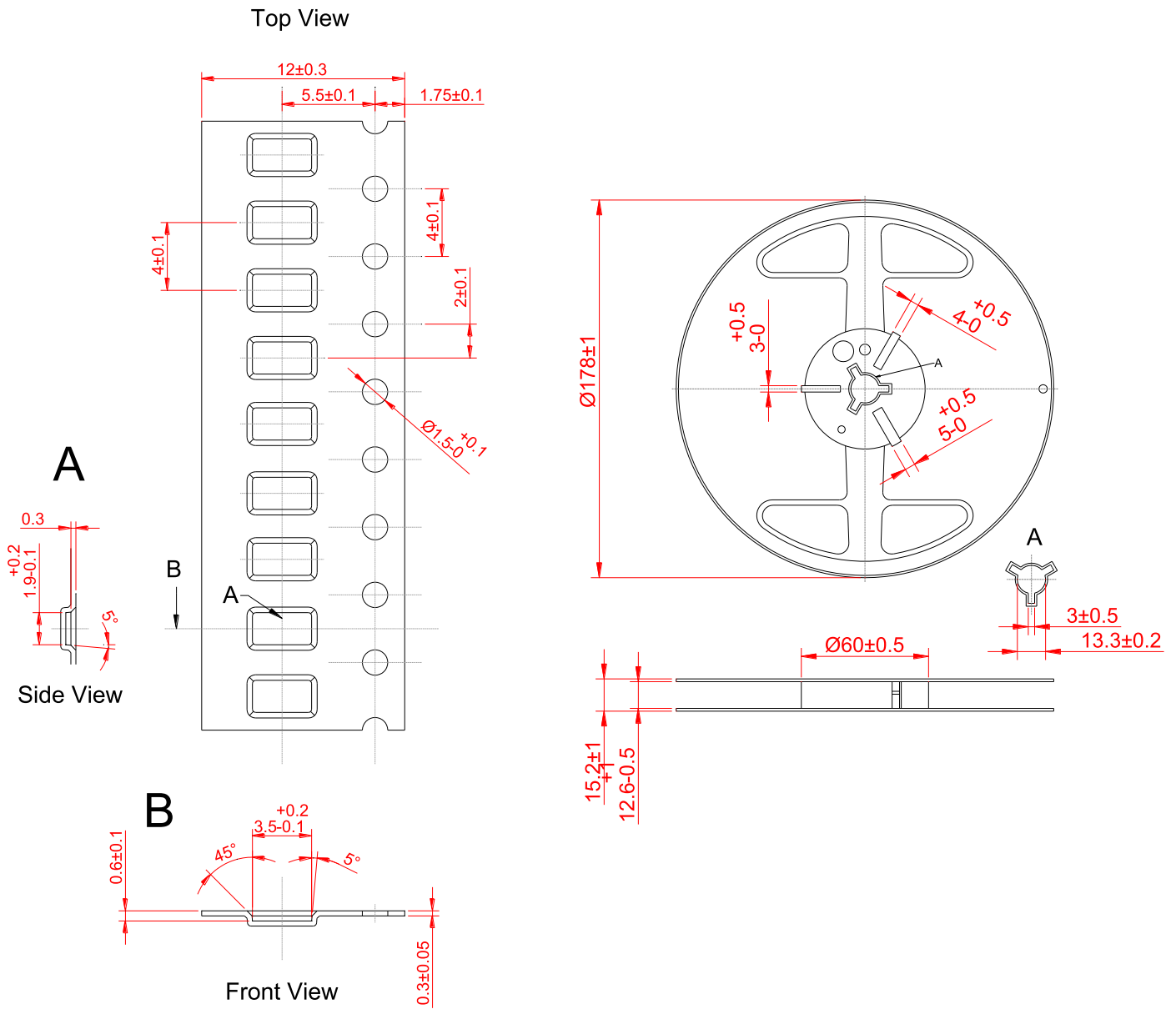
Front



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>	2JL50
<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>	120000
<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.

## 10. Antenna Images

