antenna conceptor

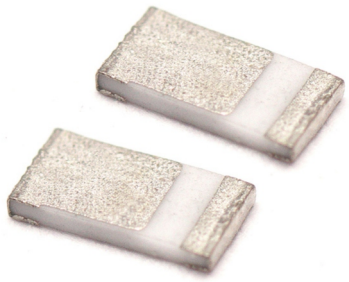
Product Datasheet

# 2JL50

## 5.0 GHz ISM Surface Mount

## 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 |
|---|---|
| Standards | WiFi, ISM, |
| Band (MHz) | 5000 |
| Frequency (MHz) | 4920-5925 |
| Return Loss (dB) | ~-12.0 |
| VSWR | ~2.0:1 |
| Efficiency (%) | ~54.7 |
| Peak Gain (dBi) | ~0.9 |
| Average Gain (dB) | ~-2.8 |
| Impendance (Ohm) | 50 |
| Polarisation | Linear |
| Radiation Pattern | Omni-Directional |
| Max. Input Power (W) | 10 |

**Antenna Measurement Conditions:**

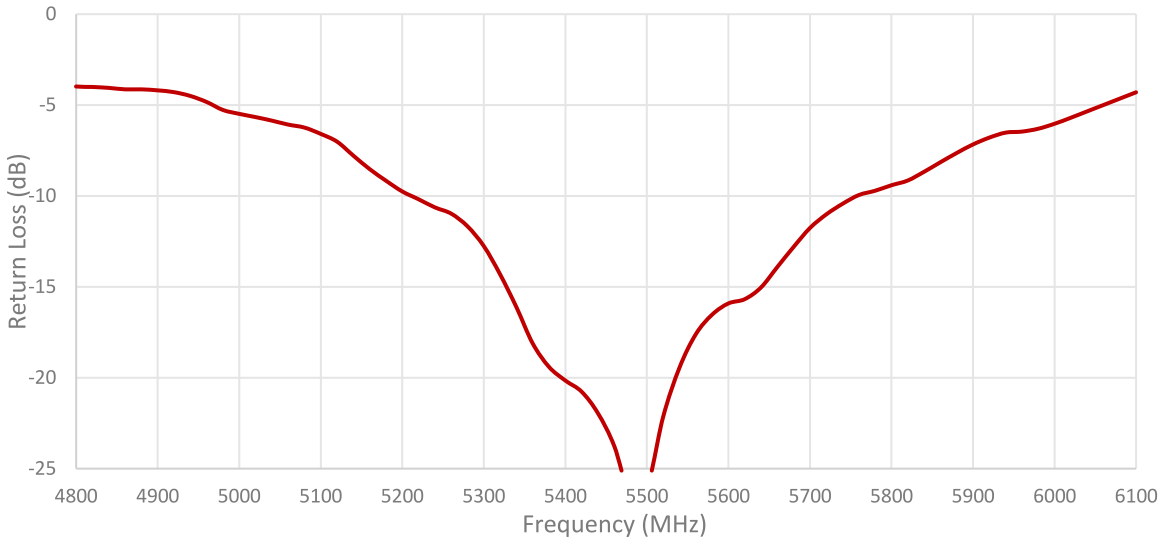
Mounted on ground plane of 80 x 40 mm

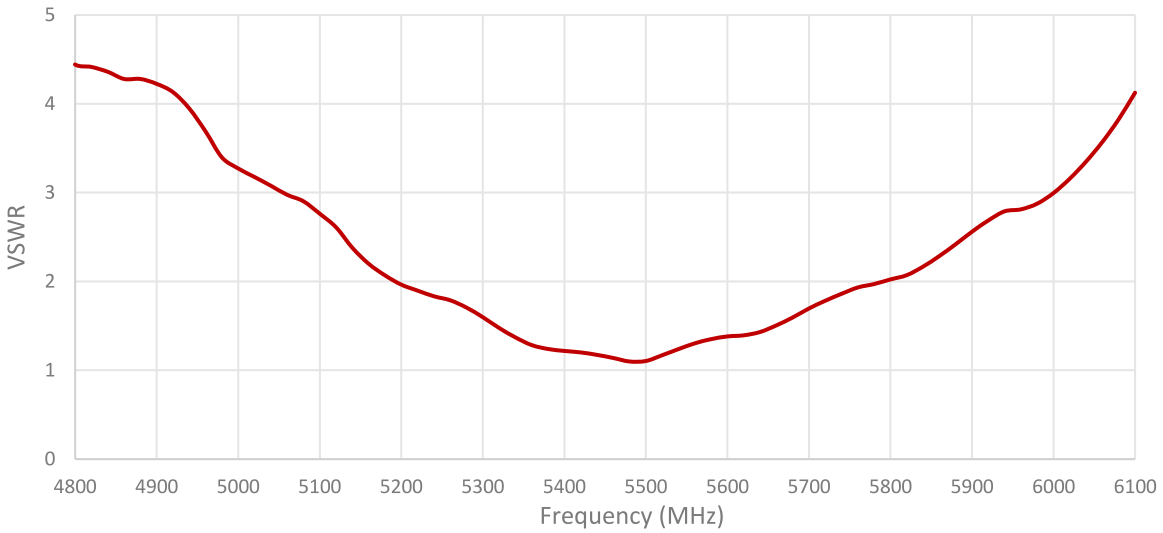
Measured in Certified CTIA 3D Anechoic Chamber

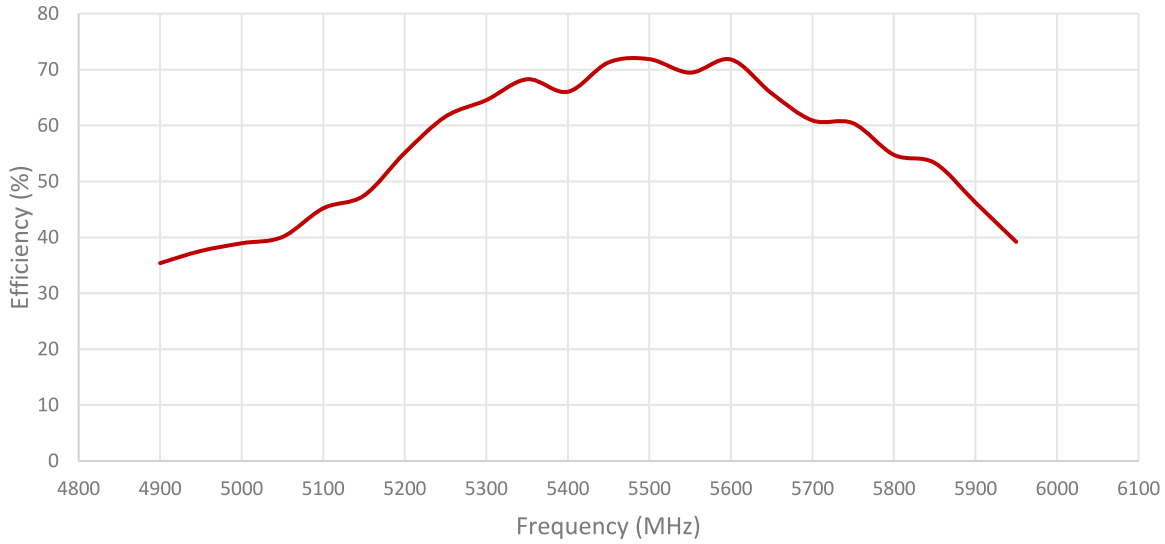
## 2. Mechanical and environmental specifications

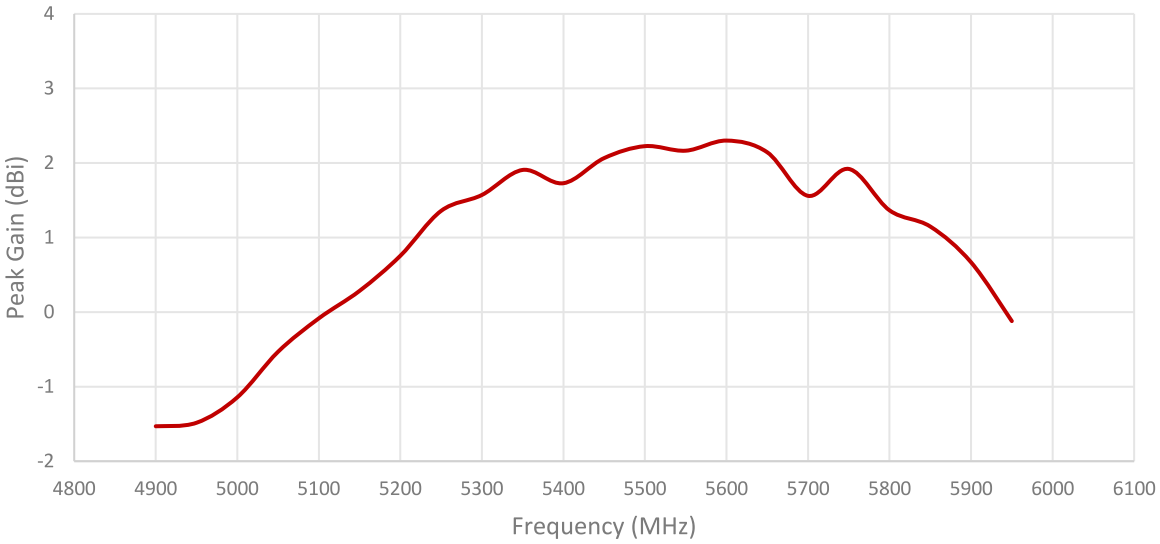
| Specifications | 2JL50 |
|---|---|
| Mounting Type | Surface Mount |
| Dimensions (mm) | 3.2 x 1.6 x 0.5 |
| Material | Ceramic |
| Operating Temperature (C) | -40 to +85 |
| Storage Temperature (C) | -40 to +85 |
| Substance Compliance | RoHS |

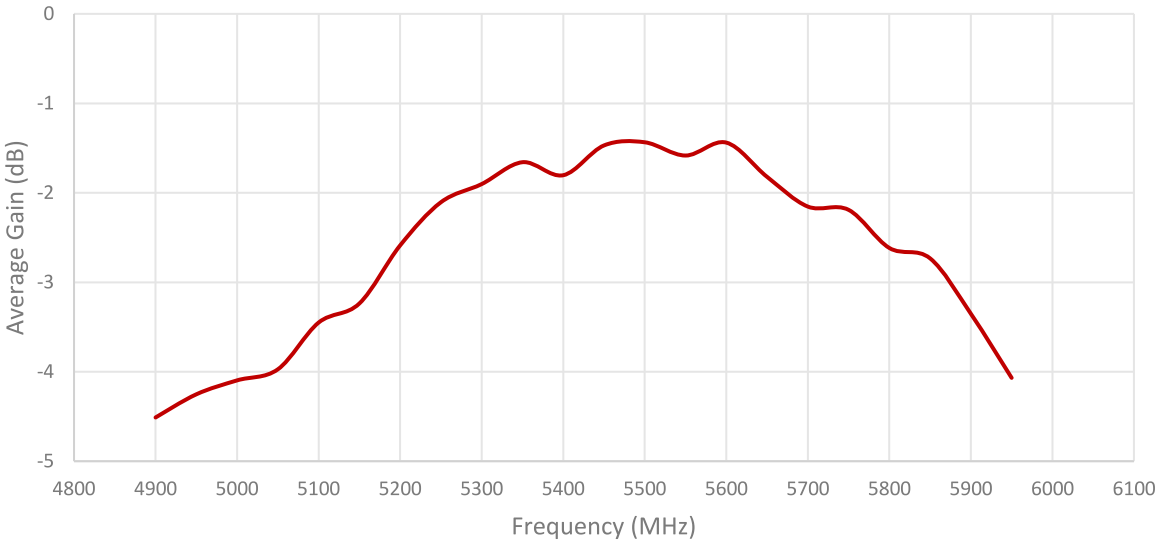
## 3. Antenna parameters

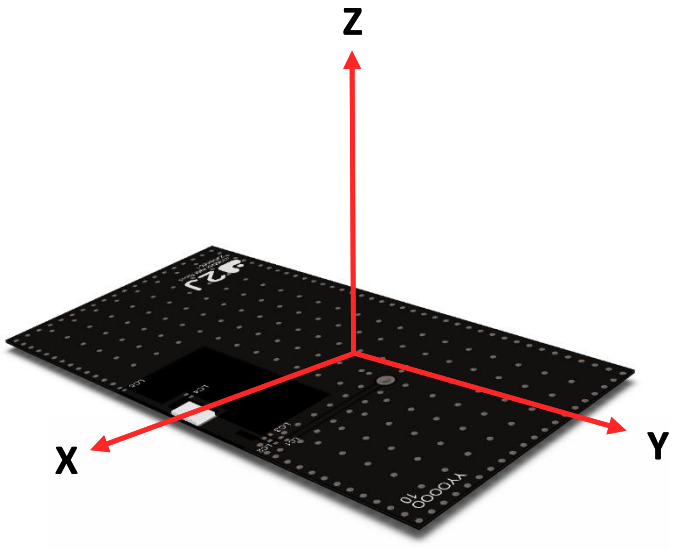


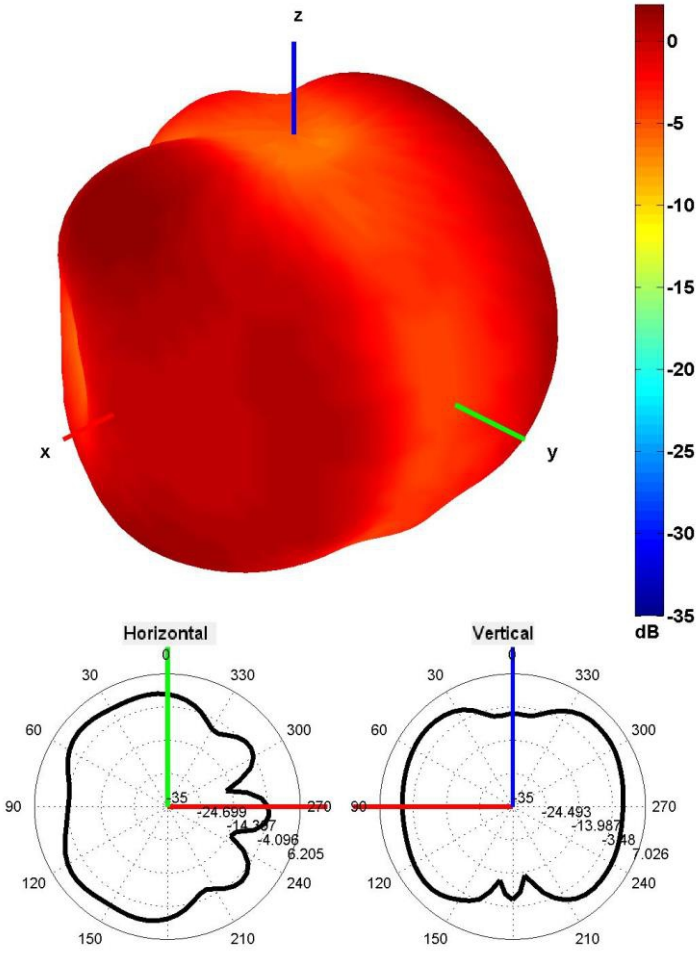

80
70
60
50
40
30
20
10
0
Efficiency (%)
4800
4900
5000
5100
5200
5300
5400
5500
5600
5700
5800
5900
6000
6100
Frequency (MHz)


4
3
2
1
0
-1
-2
Peak Gain (dBi)
4800
4900
5000
5100
5200
5300
5400
5500
5600
5700
5800
5900
6000
6100
Frequency (MHz)



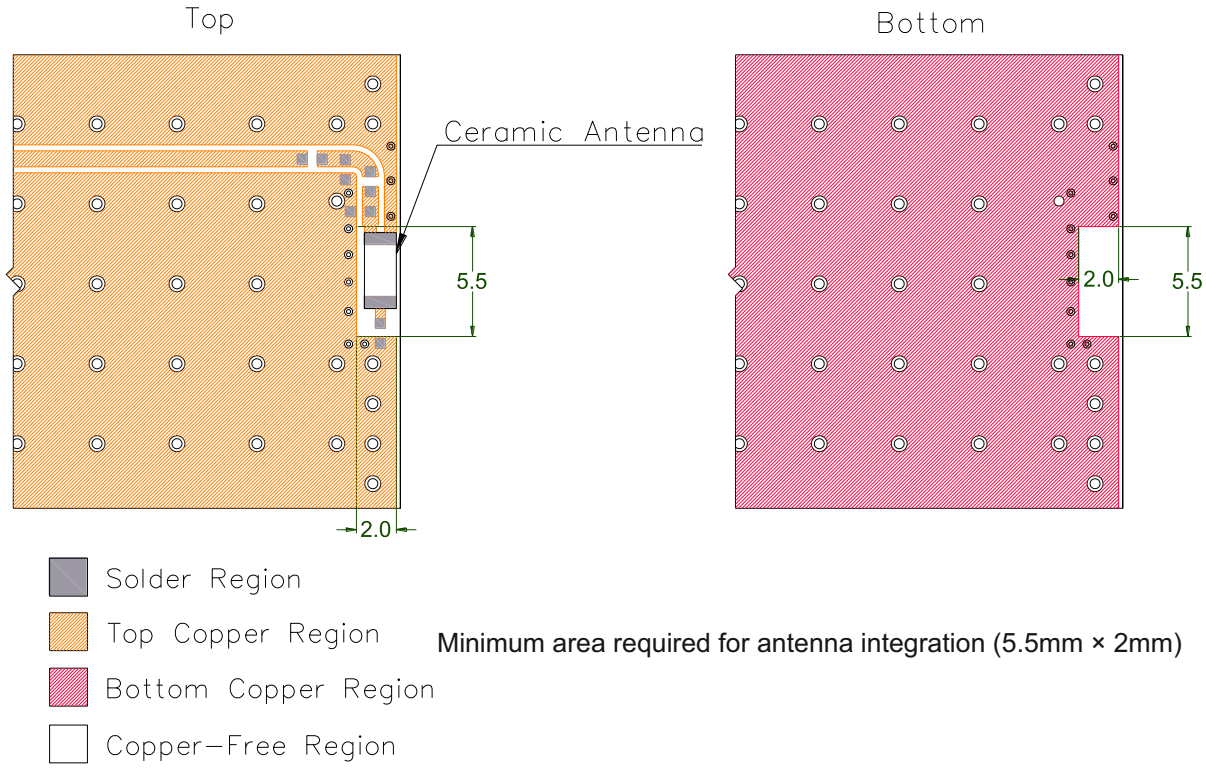




Radiation pattern reference

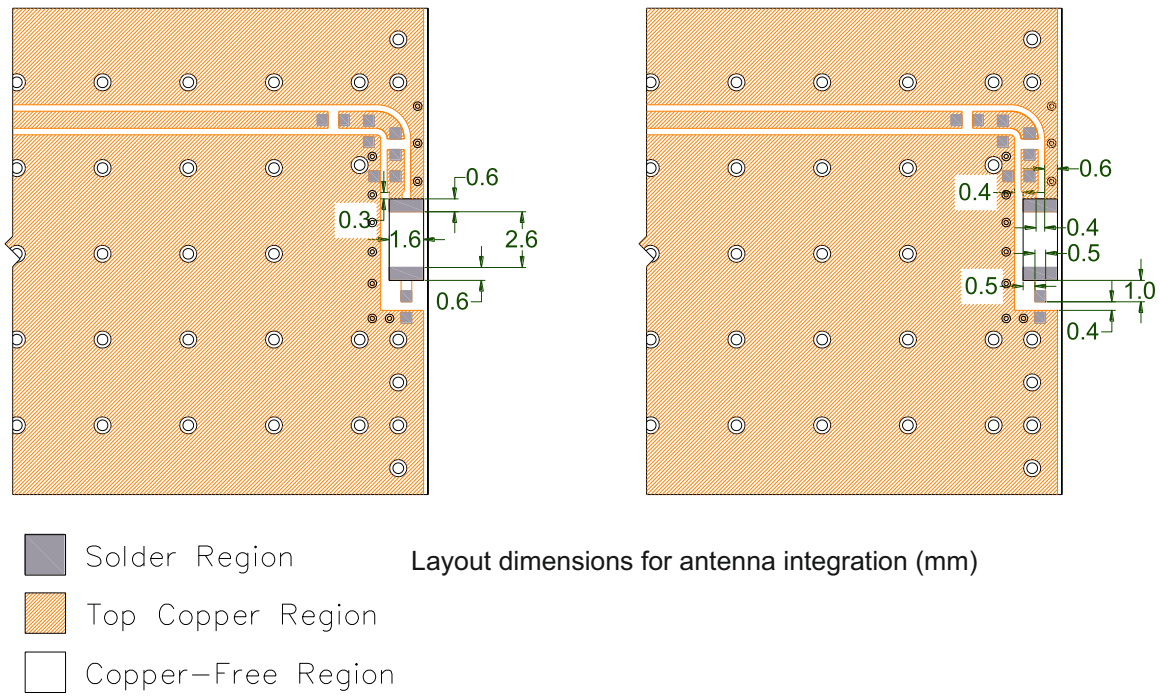



5500 MHz Radiation pattern

## 4. PCB Layout

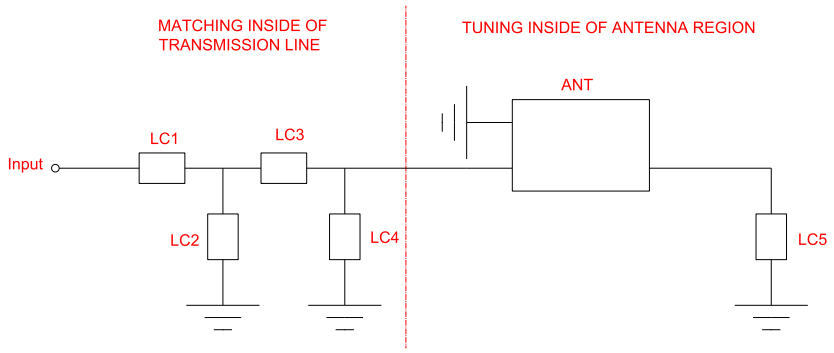



Minimum area required for antenna integration (5.5mm × 2mm)

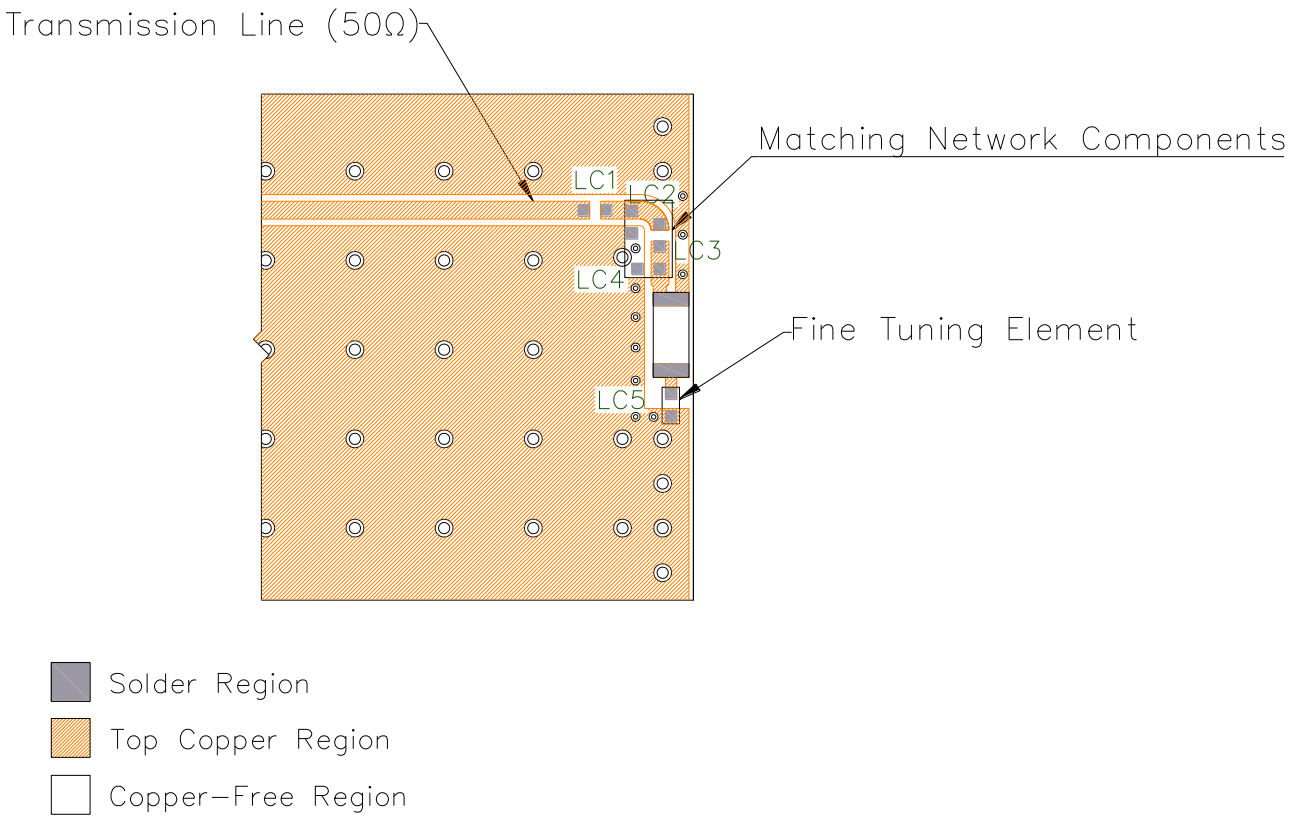



Layout dimensions for antenna integration (mm)

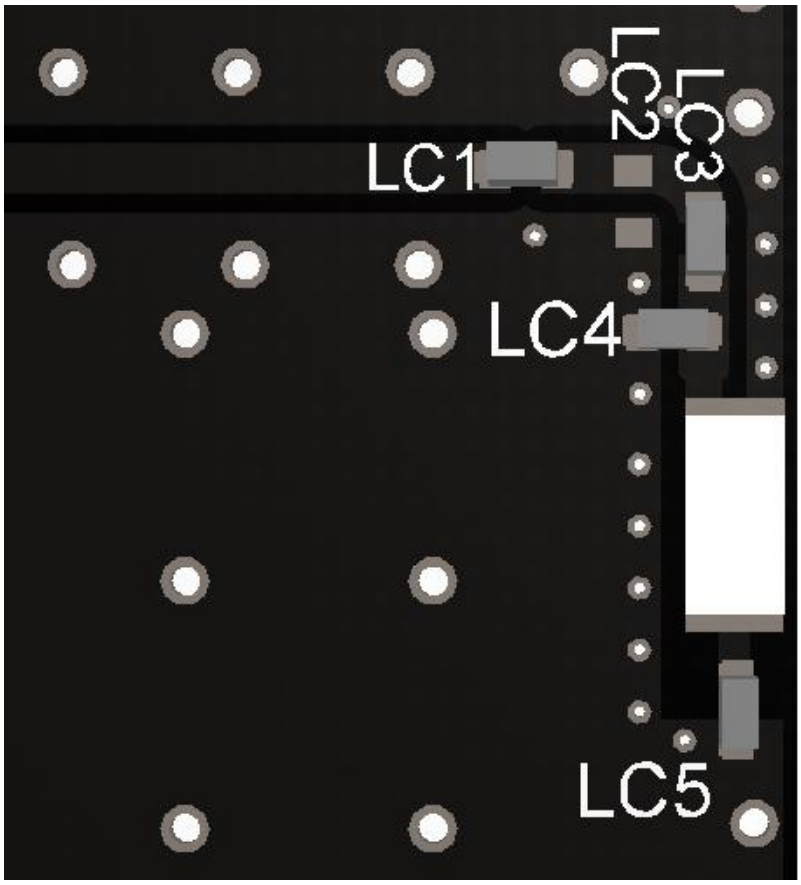
## 5. Matching Components




**Matching Network Schematic**

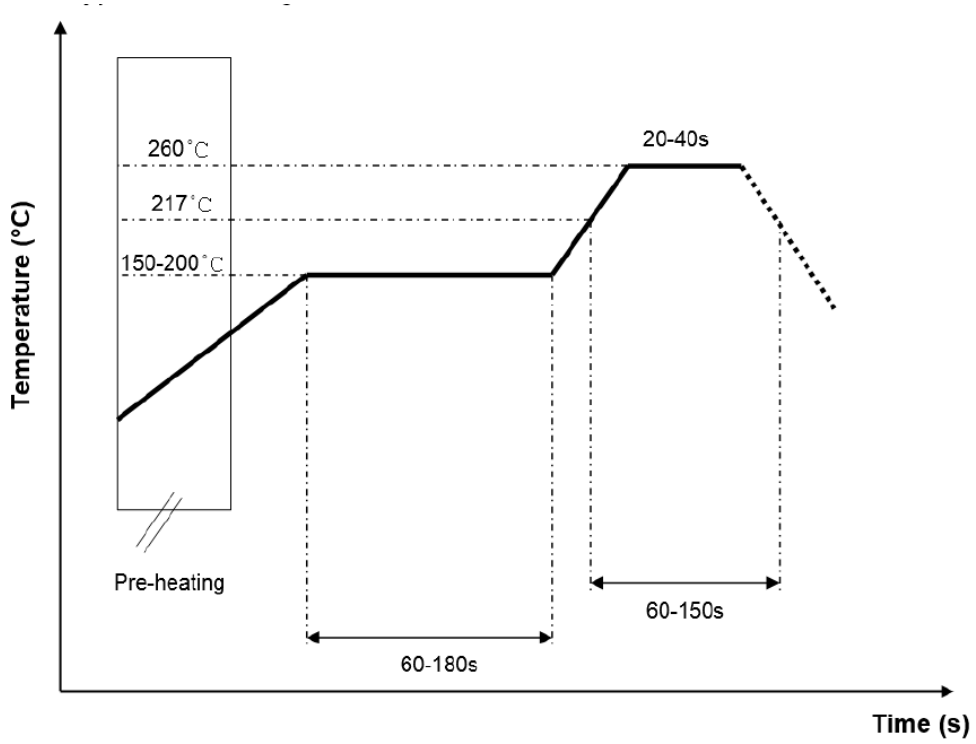



Matching network drawing (LC1=22pF±5%, LC2=OPEN, LC3=0.5pF±0.05pF, LC4=2.2nH±0.1nH, LC5=0.2pF±0.05pF)

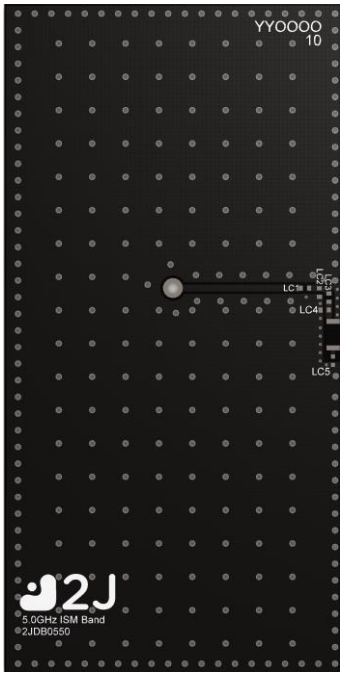
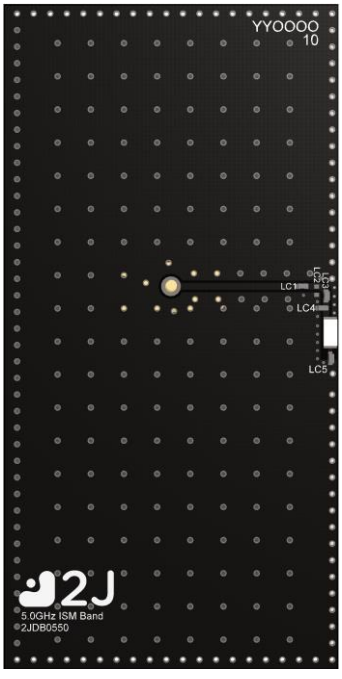
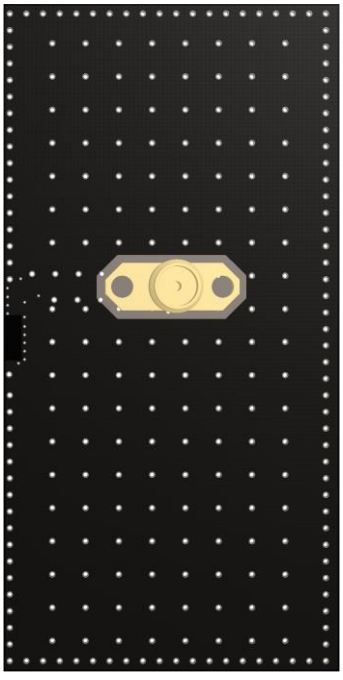
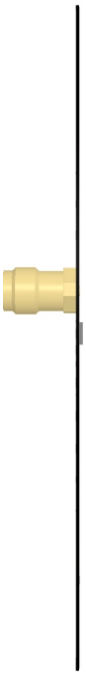



3D View of matching components and recommended values

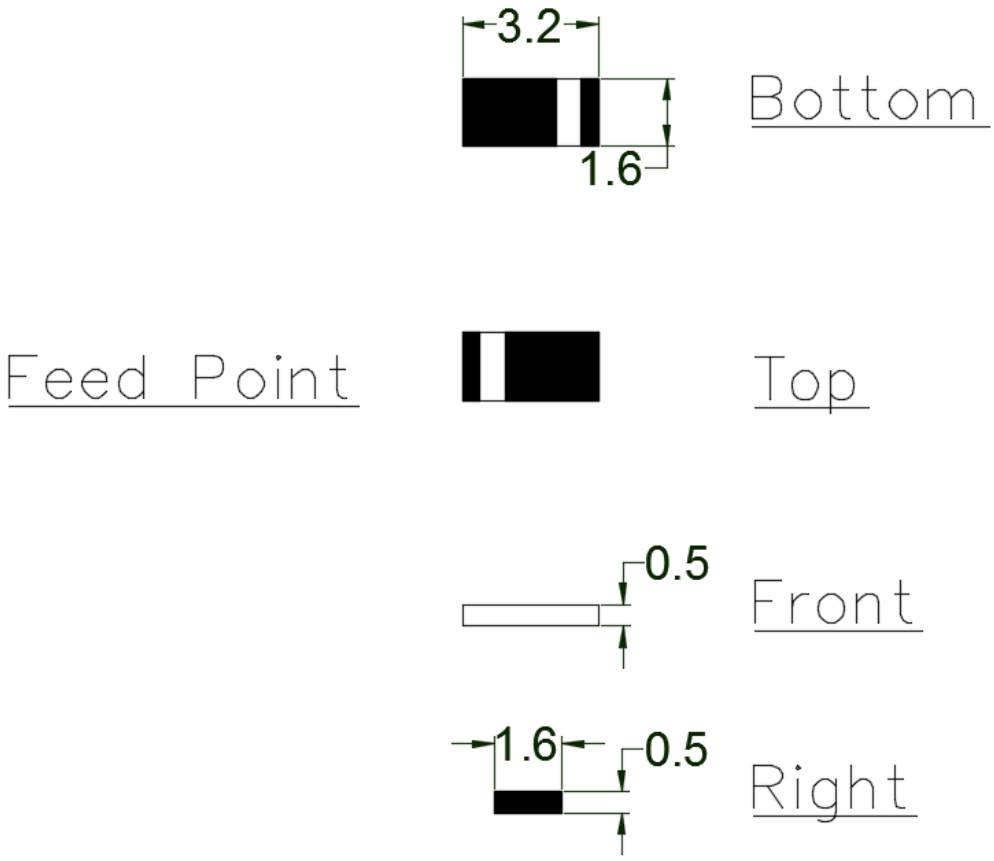
**REFLOW TEMPERATURE PROFILE**




## 6. Evaluation Board

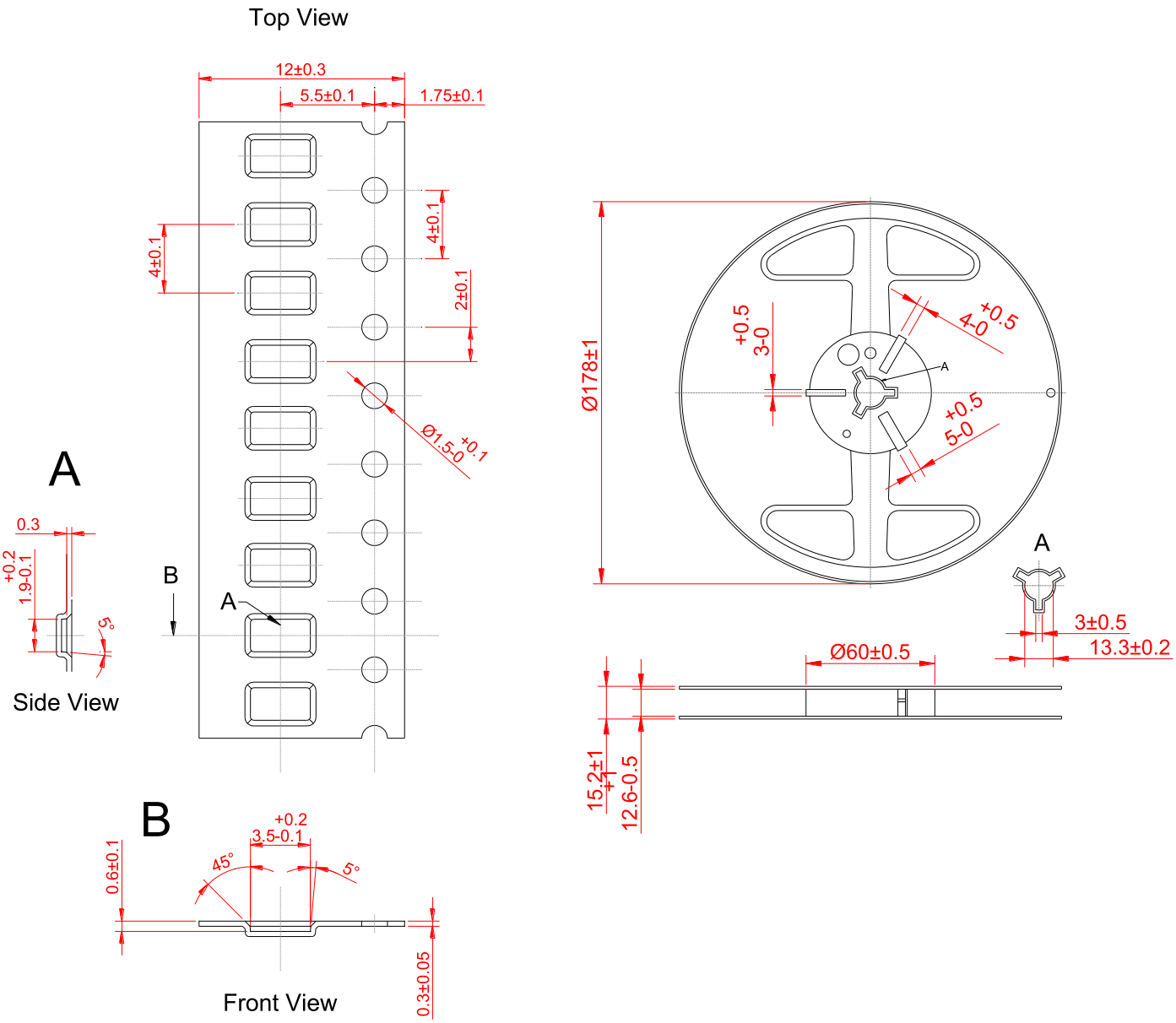
| 80mm x 40mm | 80mm x 40mm | 80mm x 40mm | 80mm x 10.8mm (PCB: 0.8mm, Antenna: 0.5mm, Connector: 9.5mm) |
|---|---|---|---|
|  |  |  |  |
| **Front View without Antenna** | **Front View with Antenna** | **Back View** | **Side View** |

## 7. Antenna drawings




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 | |
|---|---|
| Antenna | 2JL50 |
| REEL | |
| Max Quantity per Reel | 6000 |
| REEL BOX | |
| Reels per Box | 2 |
| Max Quantity per Box | 12000 |
| Reel Box Dimensions (cm) | 18 x 18 x 3.6 |
| Reel Box Weight (Kg) | 0.7 |
| CARTON | |
| Reels per Carton | 2 |
| Max Quantity per Carton | 120000 |
| Reel Carton Dimensions (cm) | 40.5 x 24.7 x 22.5 |
| Reel Carton Weight (Kg) | 7 |

**Storage Conditions:**

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

## 10. Antenna Images

