

# 2JL31

## 2.4 GHz ISM Surface Mount

### Key Features

#### 2.4 GHz ISM

- 2410-2490 MHz

Surface Mount

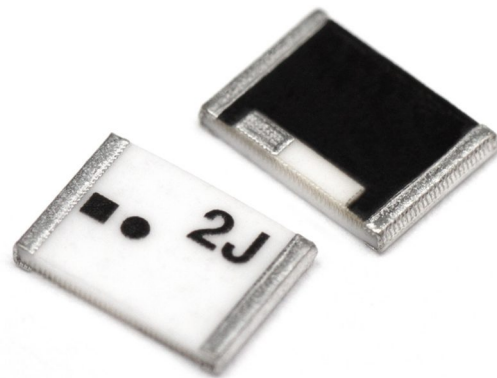
Easy to Integrate

Compact Size

Ceramic Material

Ground Plane Dependent

Dimensions 5.2 x 3.7 x 0.7 mm



## 1. Antenna and electrical specifications

Parameters	2.4 GHz ISM Antenna
<b>Standards</b>	WiFi, BT, ZigBee, ISM,
<b>Band (MHz)</b>	2400
<b>Frequency (MHz)</b>	2410-2490
<b>Return Loss (dB)</b>	~-16.7
<b>VSWR</b>	~1.4:1
<b>Efficiency (%)</b>	~63.4
<b>Peak Gain (dBi)</b>	~1.0
<b>Average Gain (dB)</b>	~-2.0
<b>Impedance (Ohm)</b>	50
<b>Polarisation</b>	Linear
<b>Radiation Pattern</b>	Omni-Directional

### Antenna Measurement Conditions:

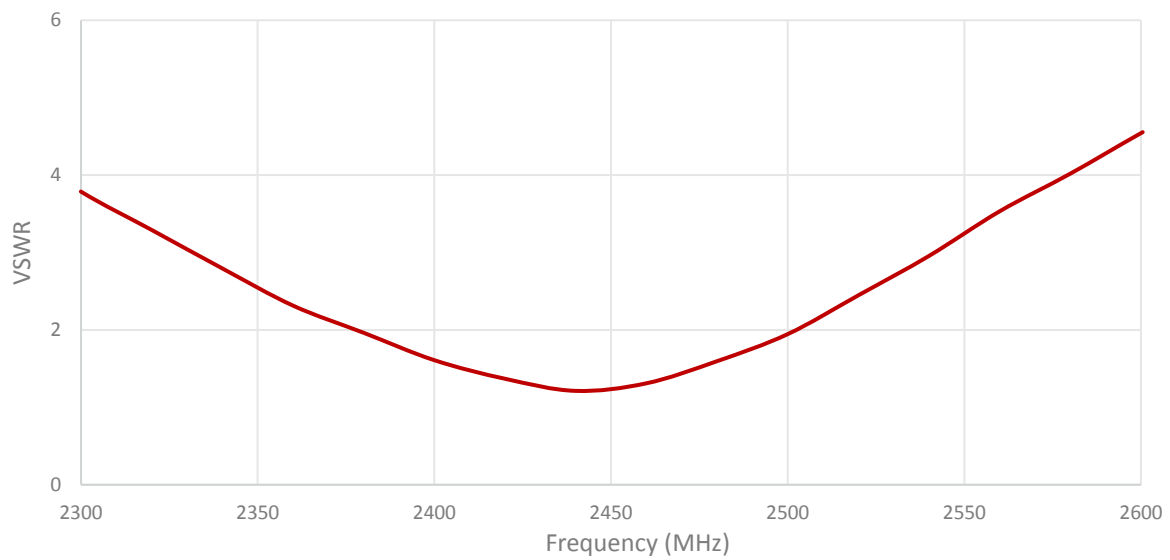
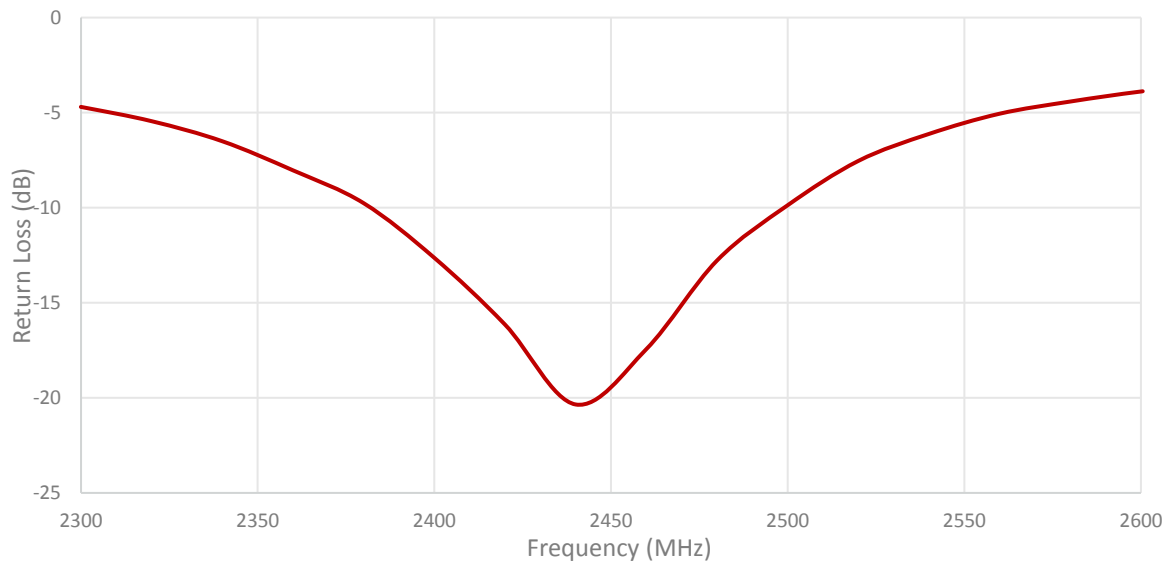
Mounted on ground plane of 80 x 40 mm

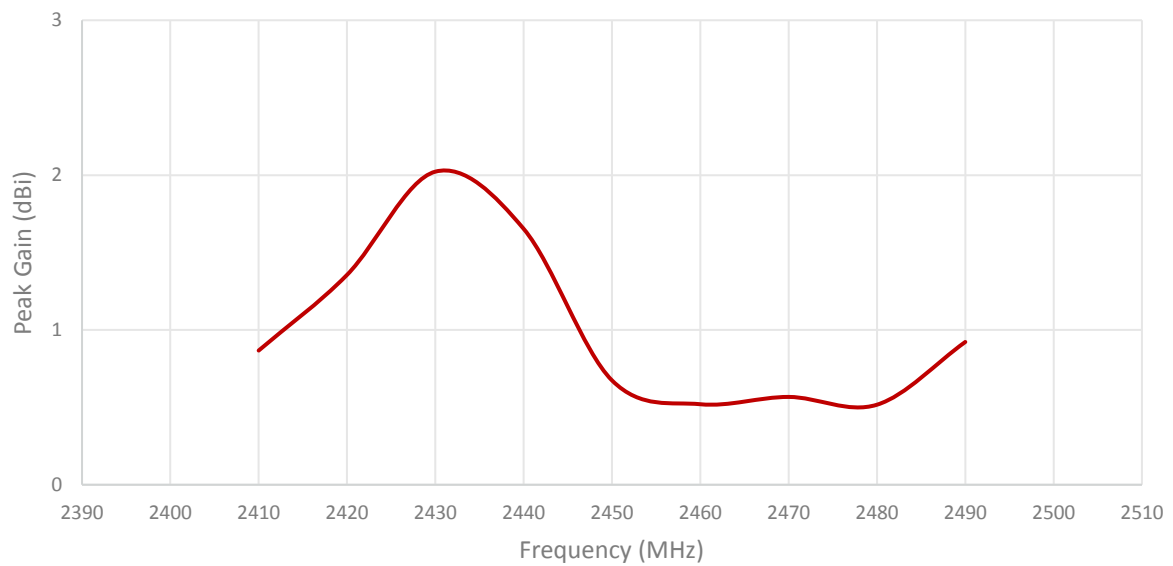
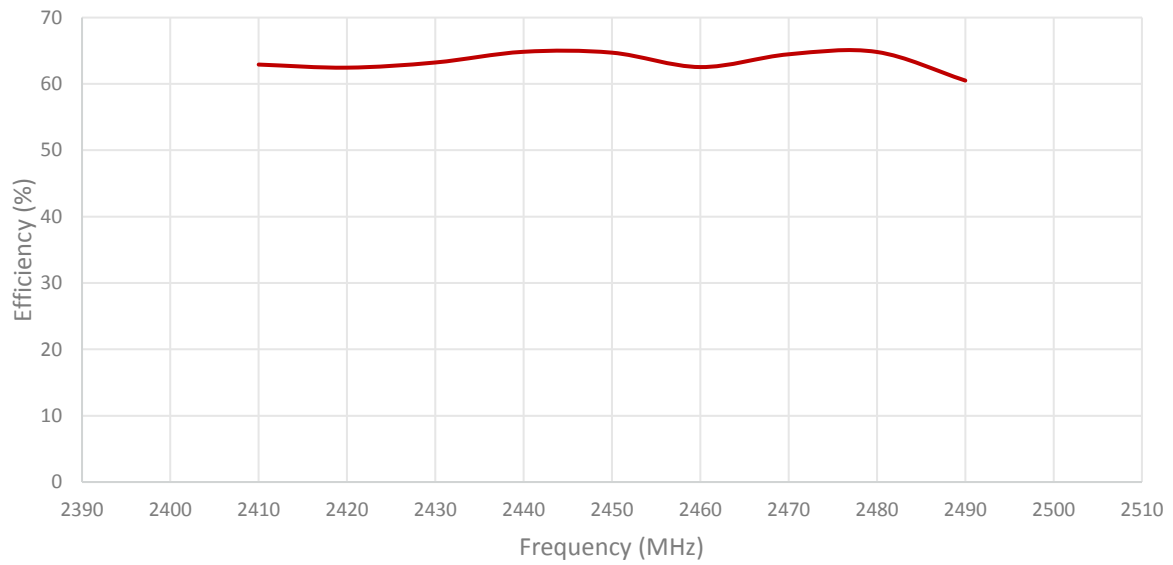
Measured in Certified CTIA 3D Anechoic Chamber

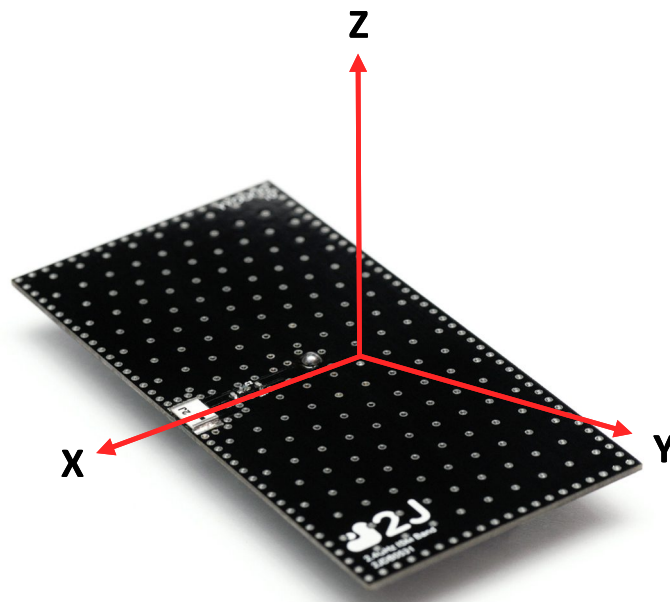
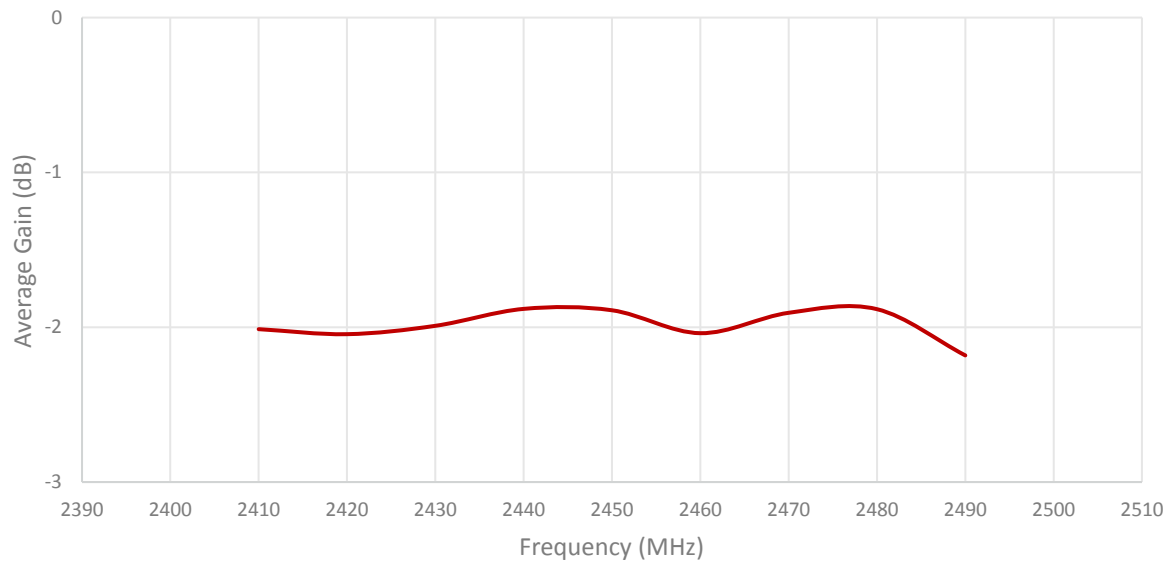
## 2. Mechanical and environmental specifications

Specifications	2JL31
<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

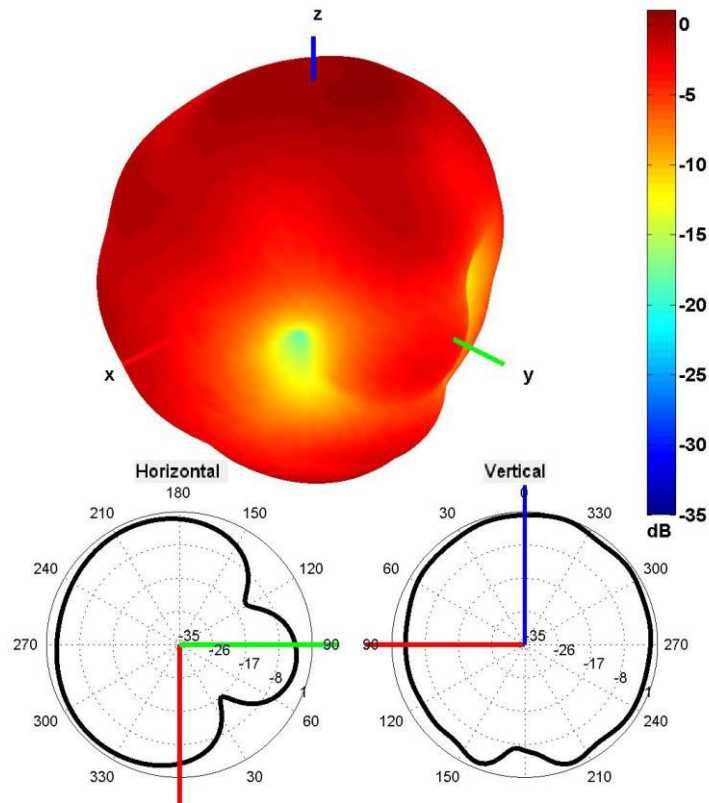
## 3. Antenna parameters





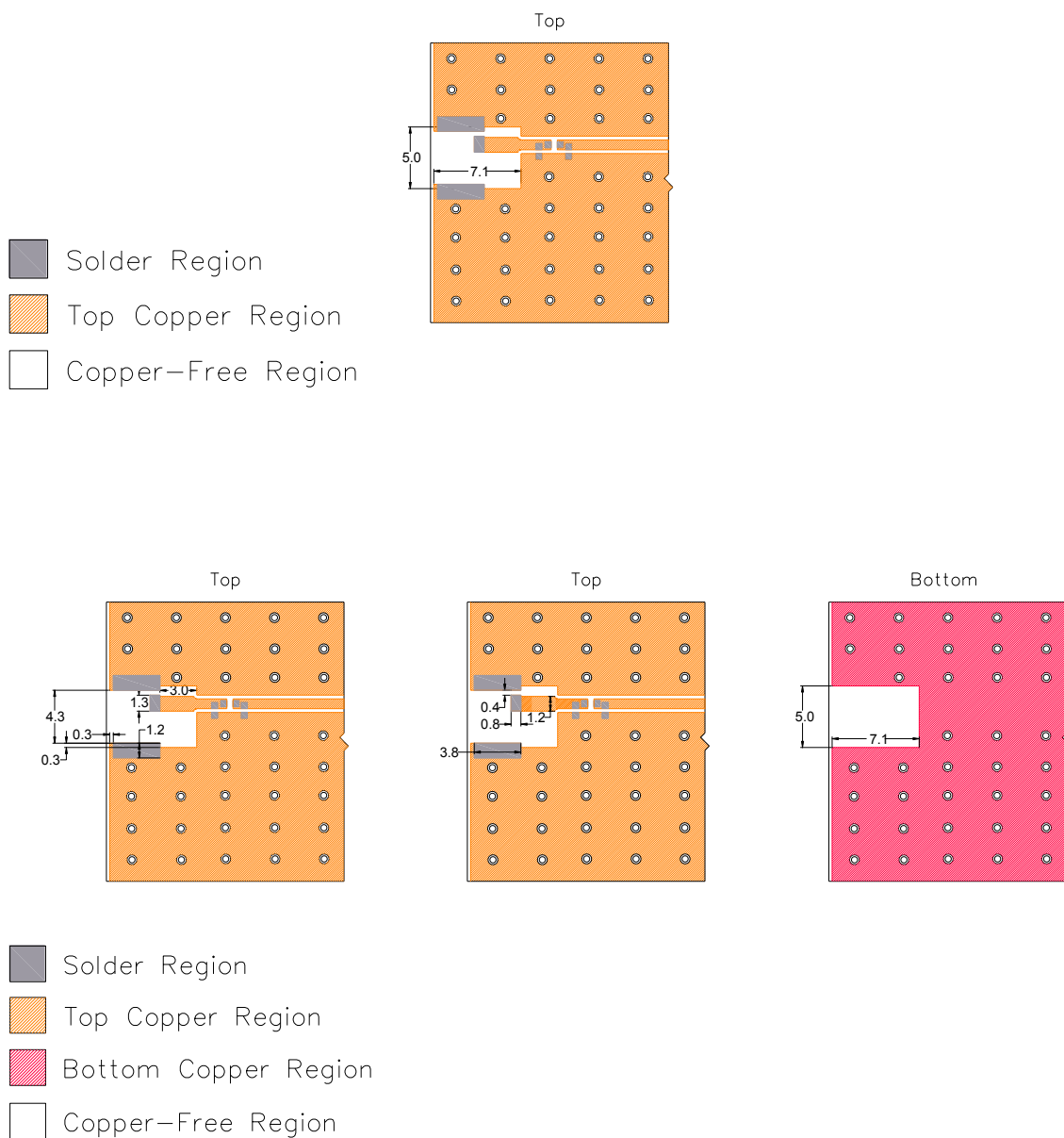


Radiation pattern reference



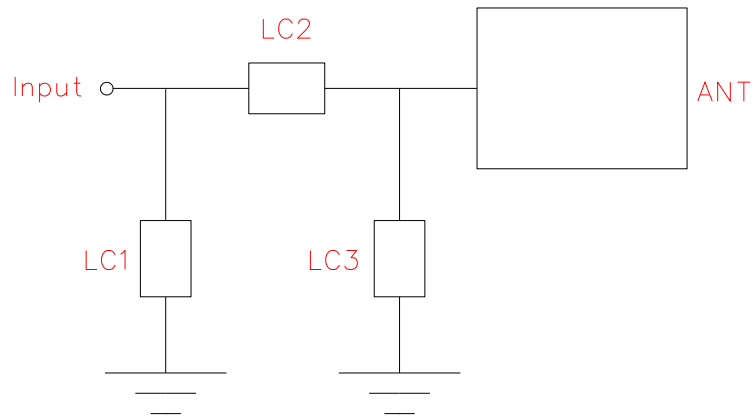
2450 MHz Radiation pattern

## 4. PCB Layout

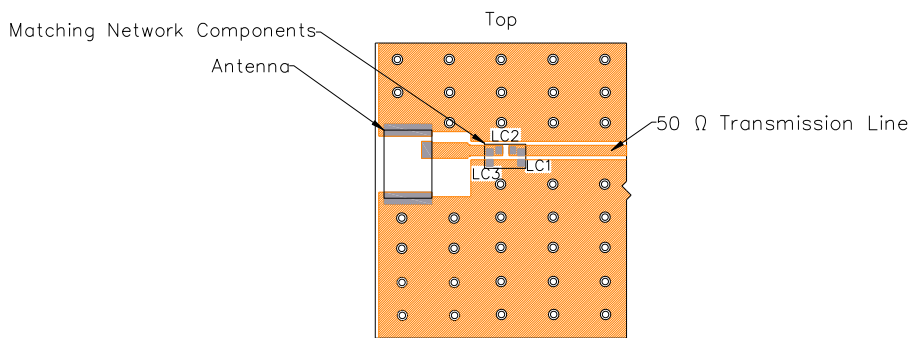


Layout dimensions for antenna integration (mm)

## 5. Matching Components

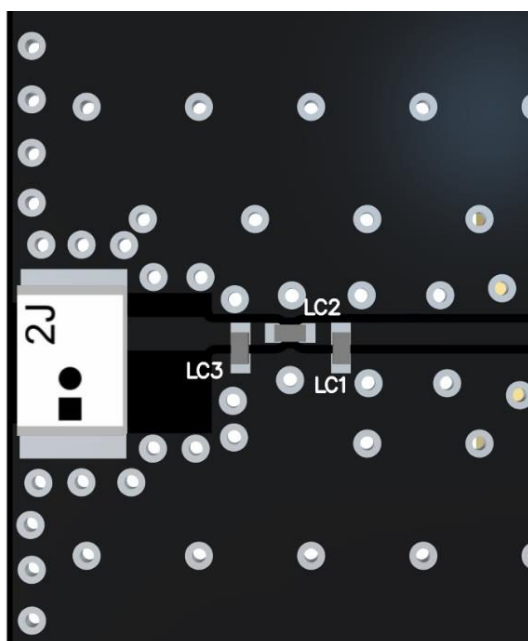


Matching Network Schematic



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

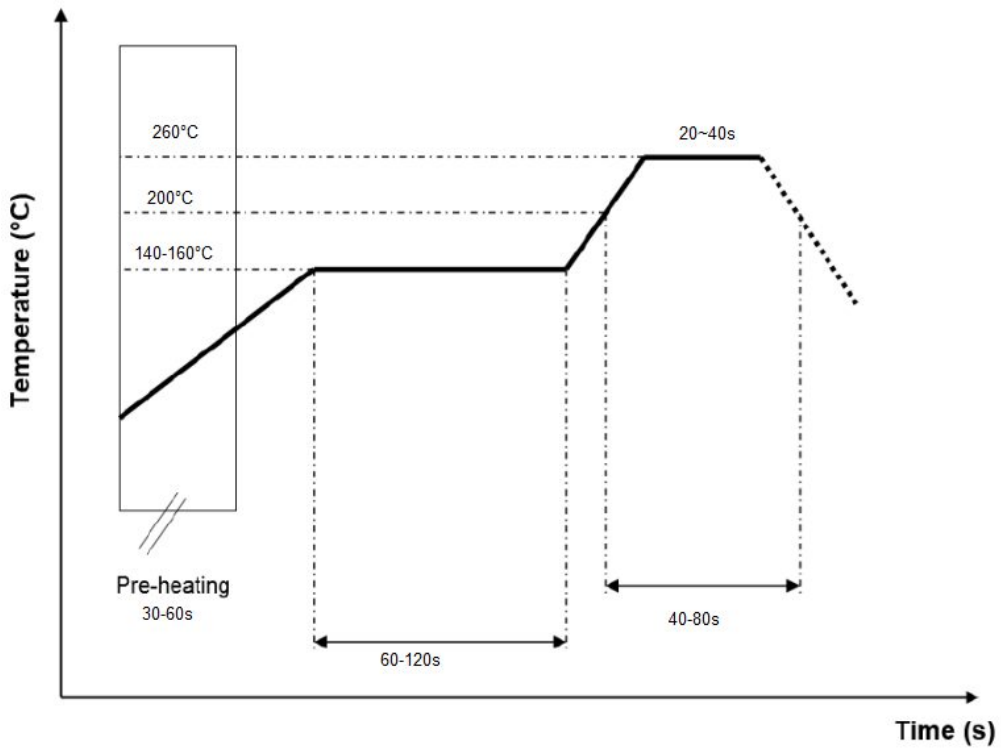
Matching network drawing (LC1 = OPEN, LC2=3.6 ±0.1pF, LC3=4.3 ±0.3nH)



3D View of matching components and recommended values

Matching network drawing (LC1 = OPEN, LC2=3.6 ±0.1pF, LC3=4.3 ±0.3nH)

## REFLOW TEMPERATURE PROFILE



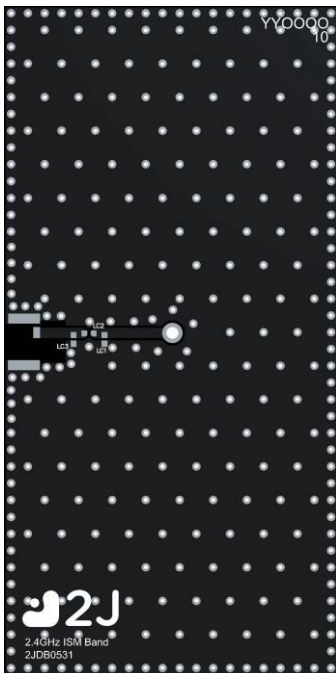
## 6. Evaluation Board

80mm x 40mm

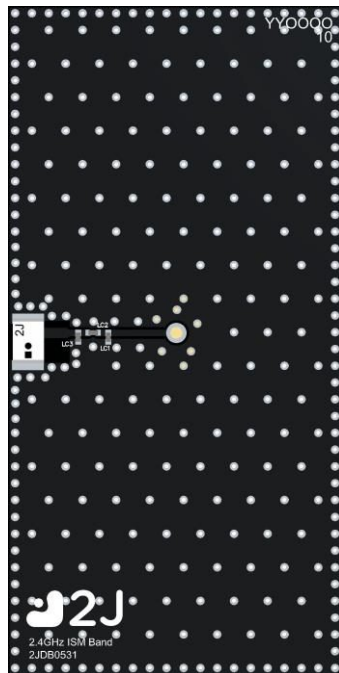
80mm x 40mm

80mm x 40mm

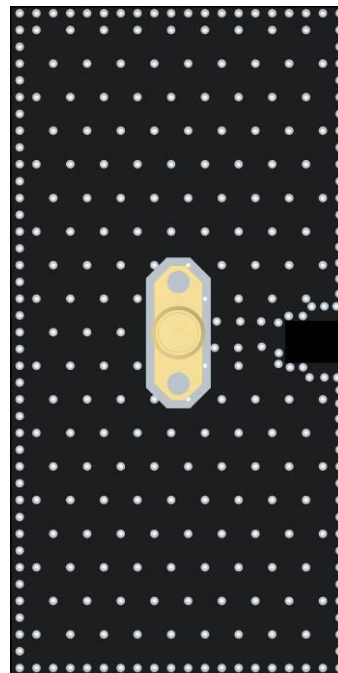
80mm x 11mm  
(PCB: 0.8mm, Antenna: 0.7mm,  
Connector: 9.5mm)



Front View without Antenna



Front View with Antenna

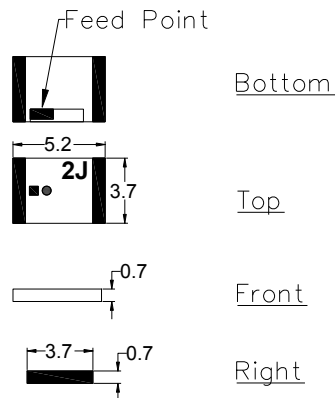


Back View



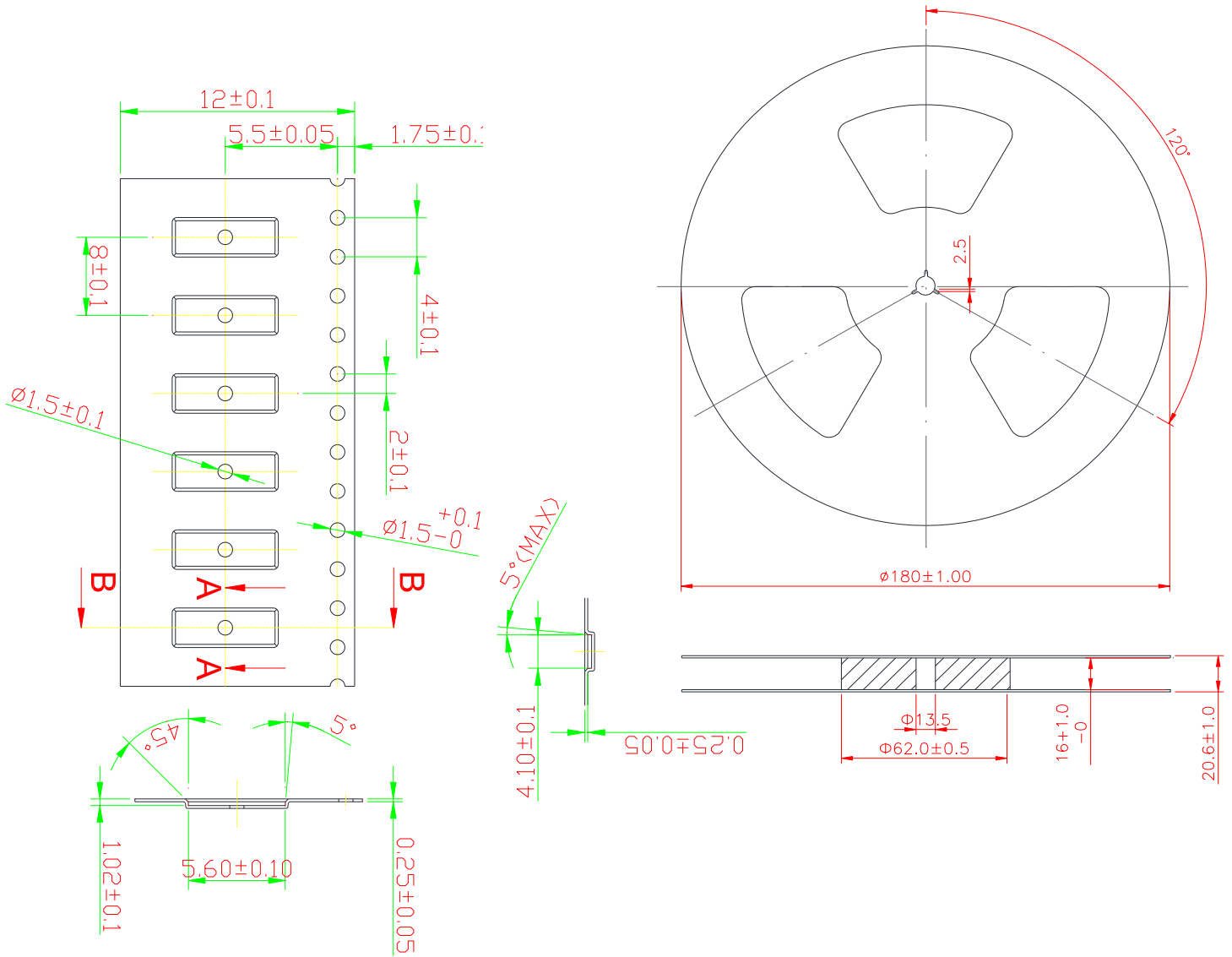
Side View

## 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>	2JL31
<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

## 10. Antenna Images

