

## 2JL40

### 2.4/5.0 GHz ISM Surface Mount

#### Key Features

##### 2.4/5.0 GHz ISM

- 2410-2490 MHz
- 4920-5925 MHz

Surface Mount

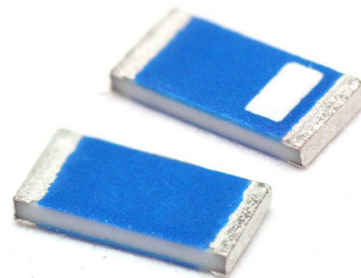
Easy to Integrate

Compact Size

Ceramic Material

Ground Plane Dependent

Dimensions 3.2 x 1.6 x 0.5 mm



## 1. Antenna and electrical specifications

Parameters	2.4 / 5.0 GHz ISM Antenna	
	WiFi, BT, ZigBee, ISM, SigFox, LoRa	
<b>Standards</b>	WiFi, BT, ZigBee, ISM, SigFox, LoRa	
<b>Band (MHz)</b>	2.4 GHz	5.0 GHz
<b>Frequency (MHz)</b>	2410-2490	4920-5925
<b>Return Loss (dB)</b>	~-12.6	~-11.7
<b>VSWR</b>	~1.6:1	~2.0:1
<b>Efficiency (%)</b>	~67.1	~56.2
<b>Peak Gain (dBi)</b>	~1.0	~1.1
<b>Average Gain (dB)</b>	~-1.7	~-2.5
<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:

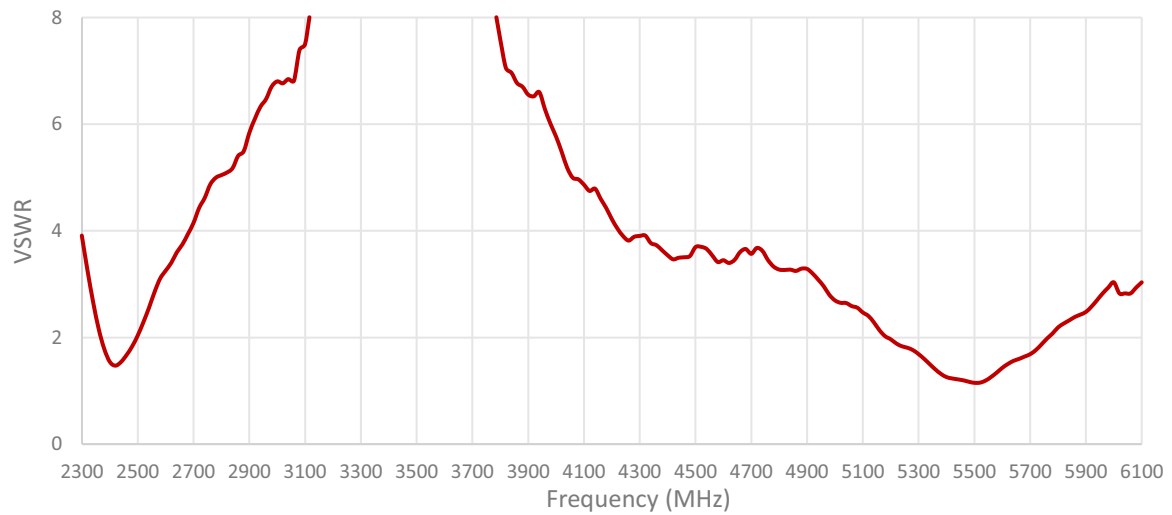
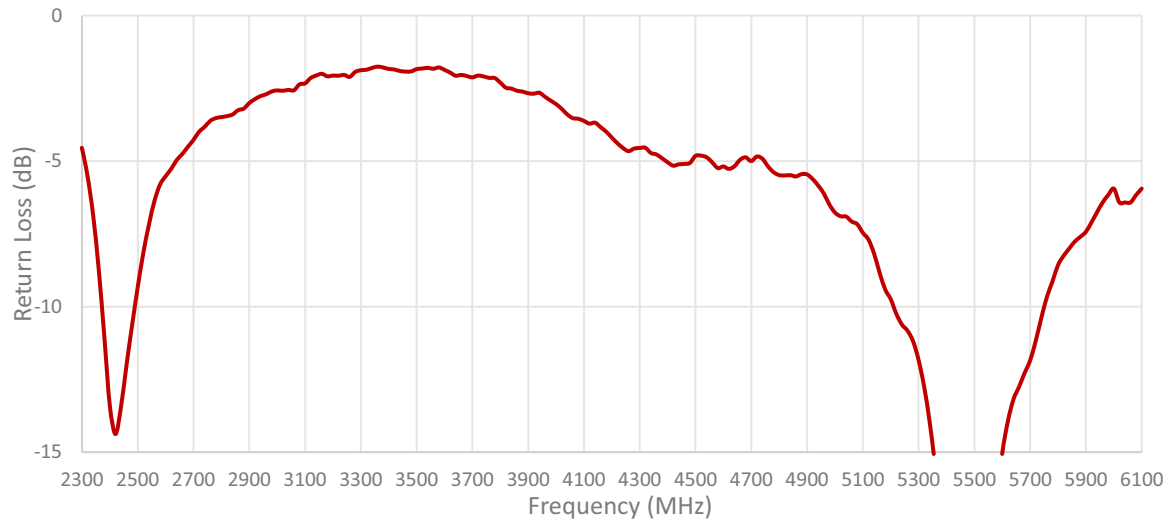
Mounted on ground plane of 80 x 40 mm

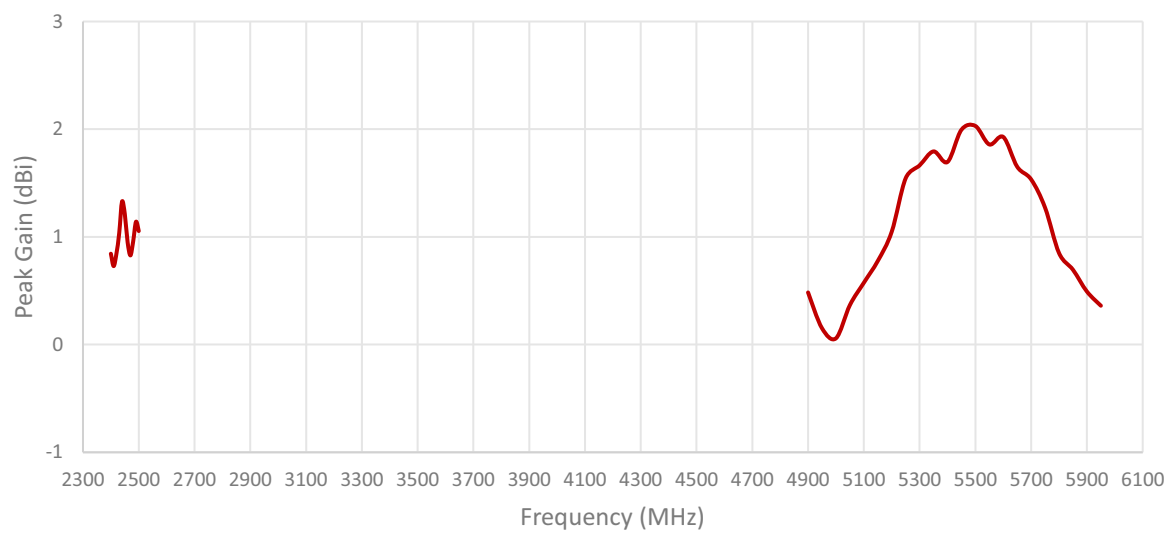
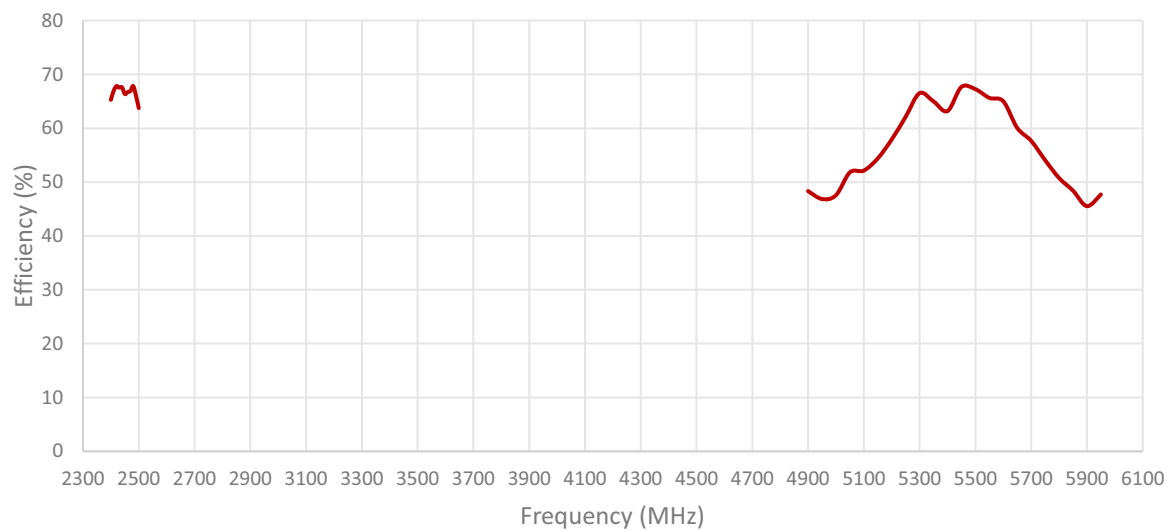
Measured in Certified CTIA 3D Anechoic Chamber

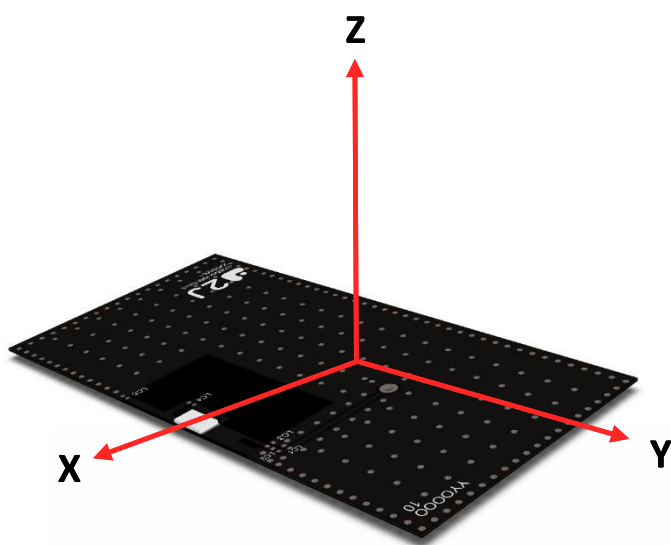
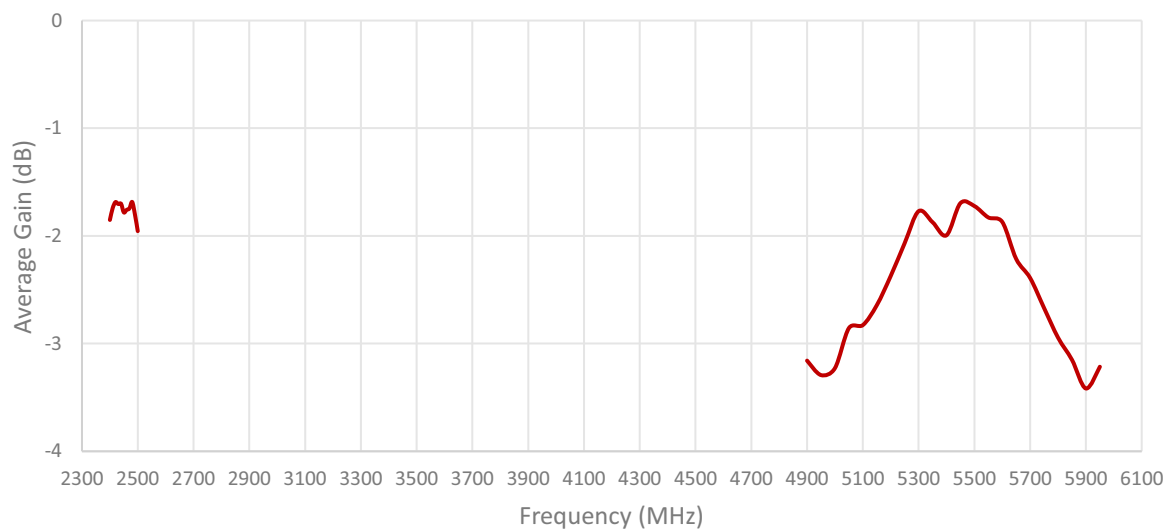
## 2. Mechanical and environmental specifications

Specifications	2JL40
<b>Mounting Type</b>	Surface Mount
<b>Dimensions (mm)</b>	3.2x 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

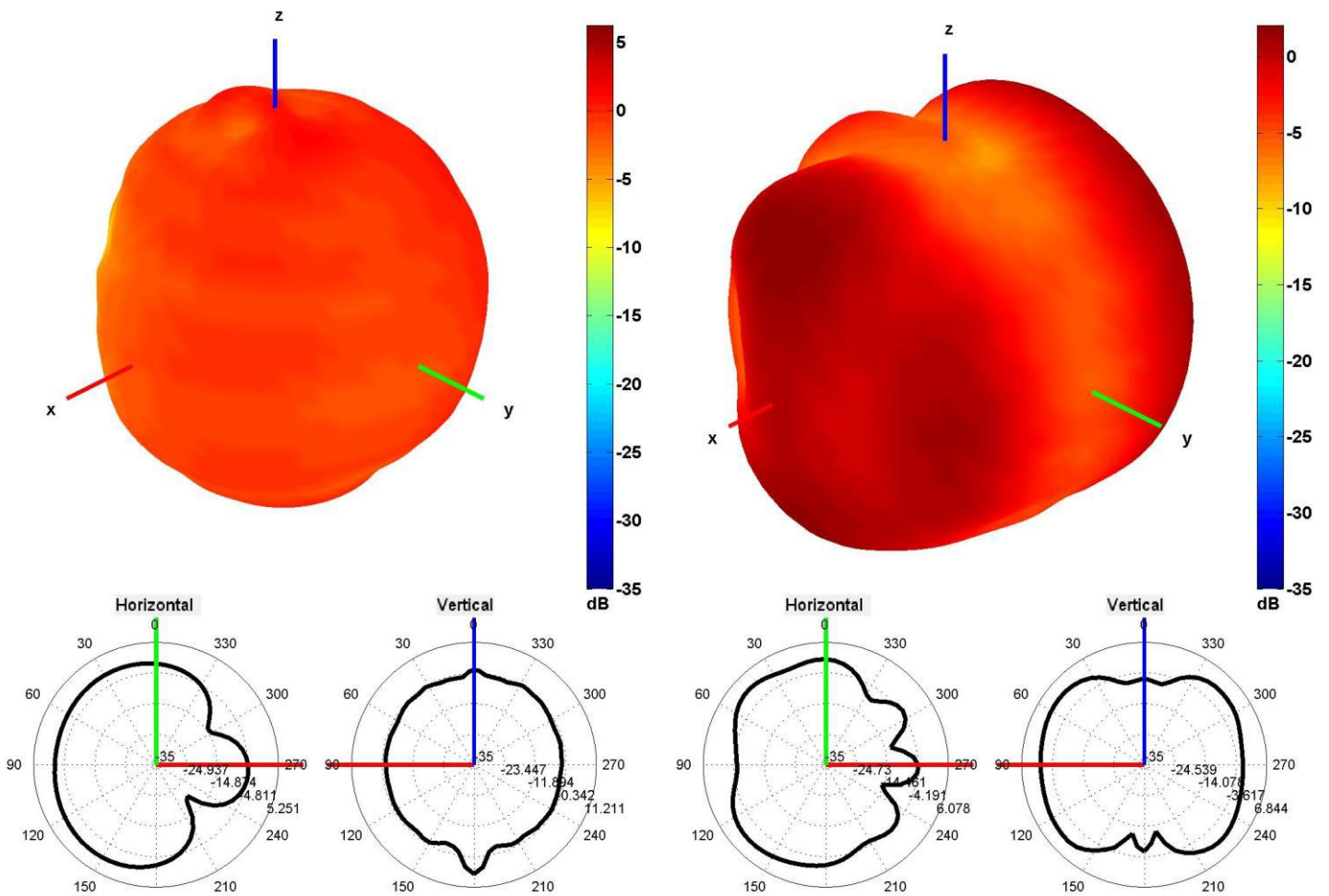
### 3. Antenna parameters





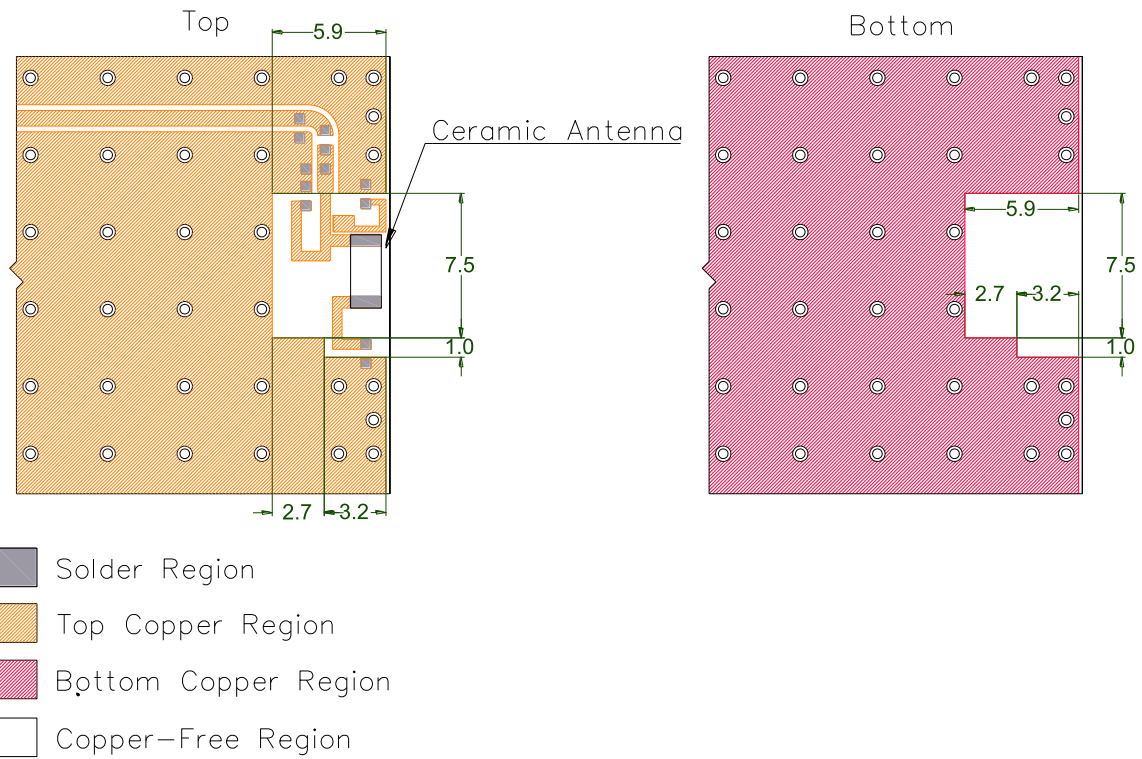


Radiation pattern reference



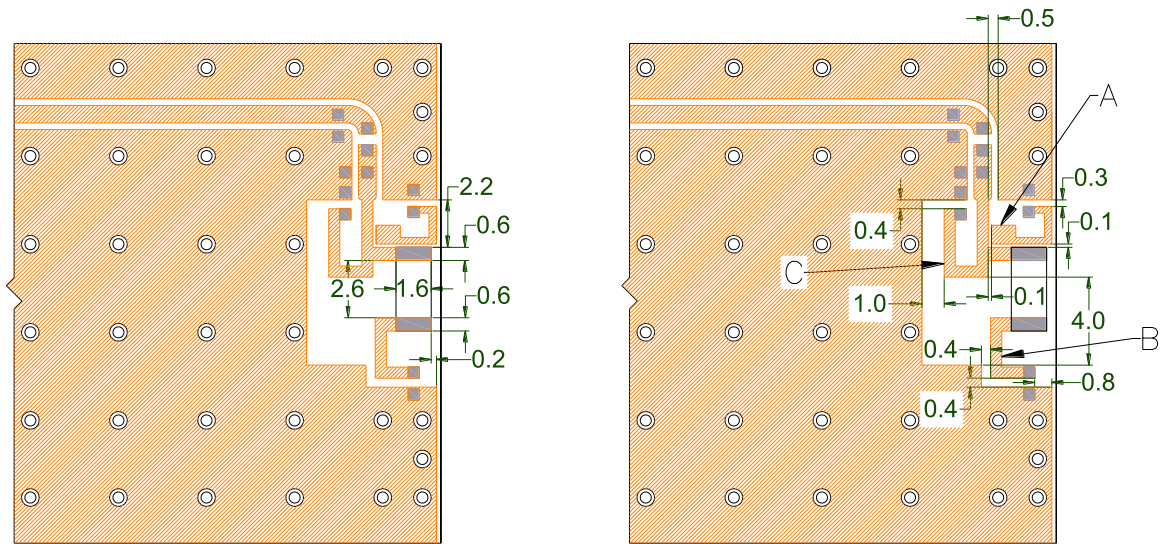
2450 and 5500 MHz Radiation pattern




## 4. PCB Layout

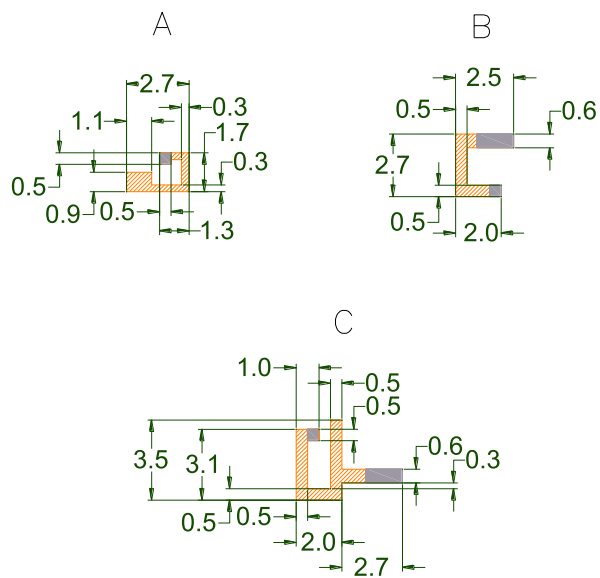


Minimum area required for antenna integration (15.6mm × 14.5mm)

## 4. PCB Layout



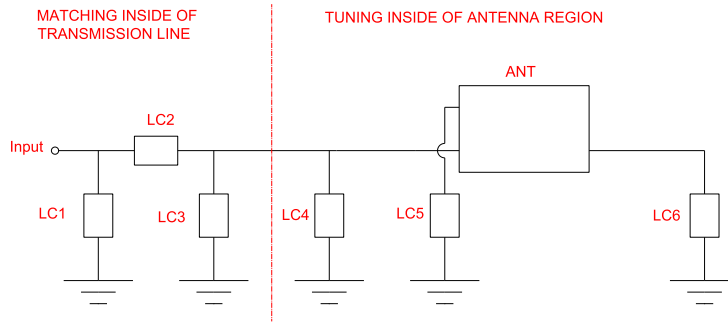
-  Solder Region
-  Top Copper Region
-  Copper-Free Region



Layout dimensions for antenna integration (mm)

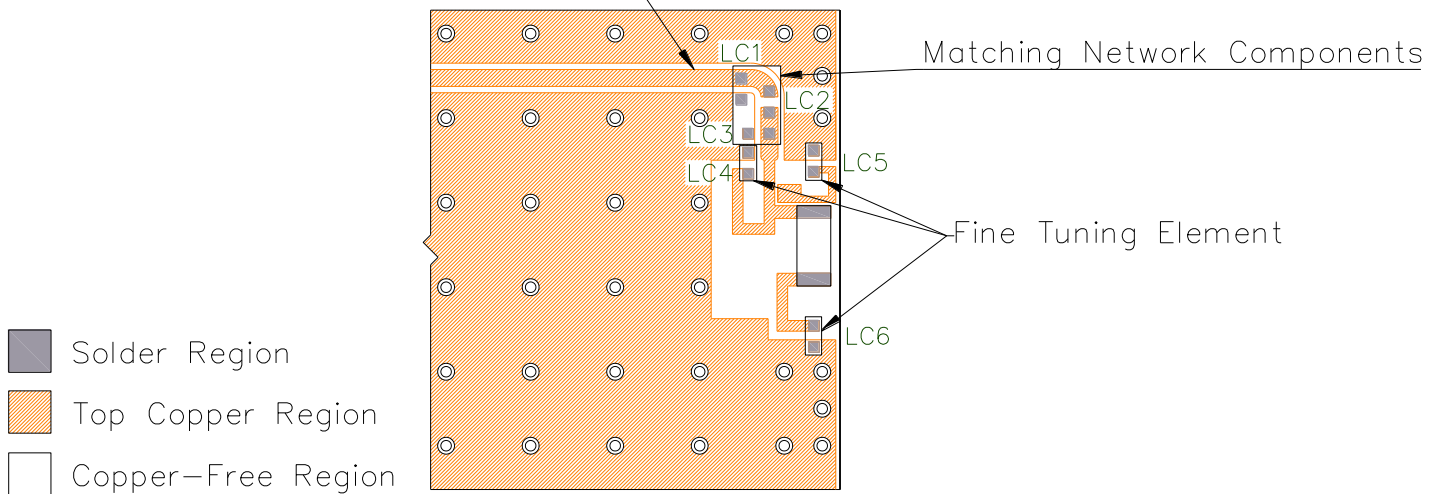


## 5. Matching Components

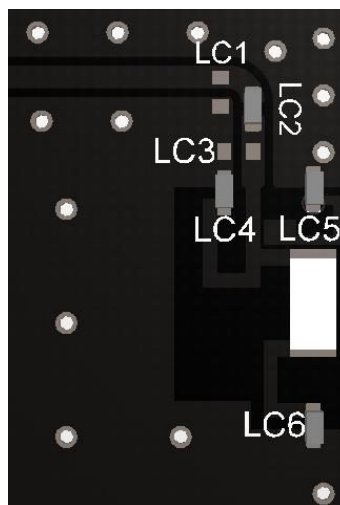


Matching Network Schematic

Transmission Line (50Ω)

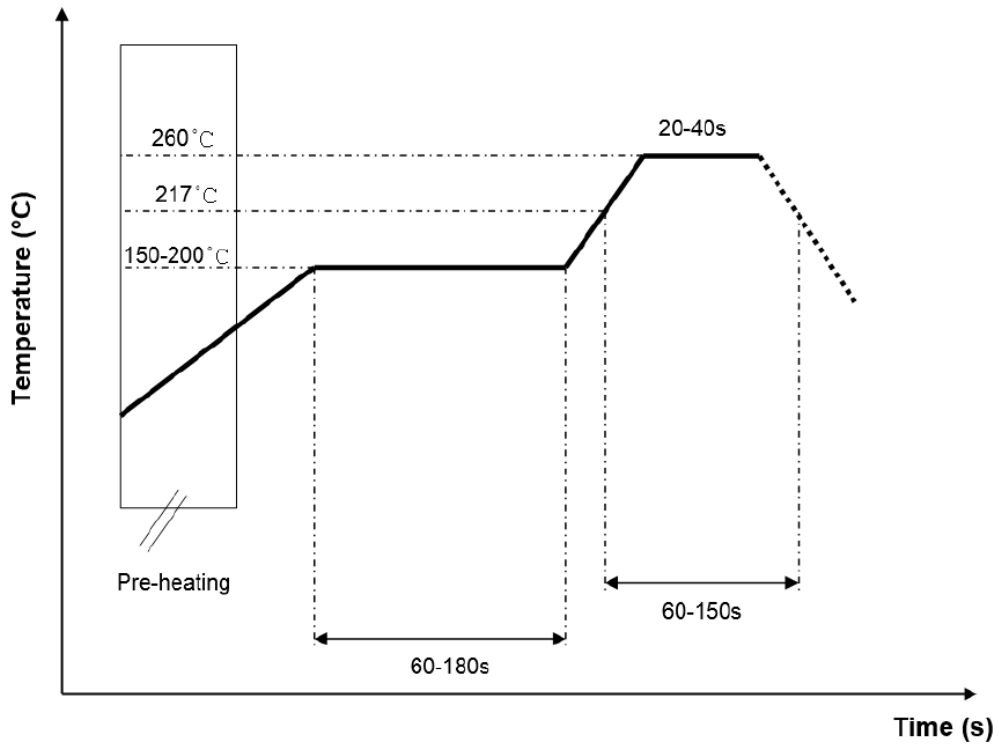


Matching network drawing (LC1=OPEN, LC2=1nH±0.03nH, LC3=OPEN, LC4=9pF±0.05pF, LC5=0.2pF±0.05pF, LC6=1.0pF±0.05pF)



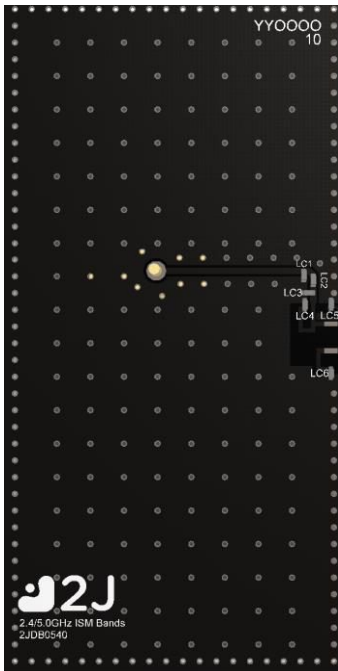
3D View of matching components and recommended values

**REFLOW TEMPERATURE PROFILE**



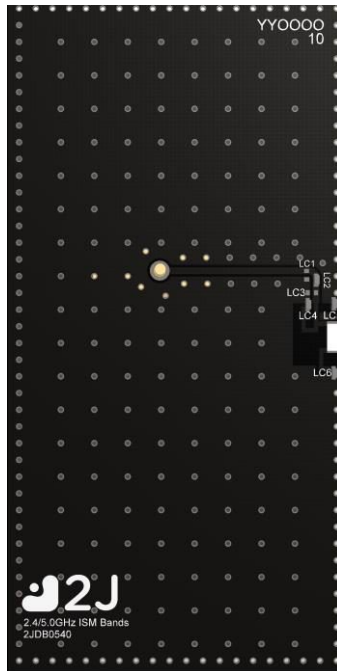
**6. Evaluation Board**

80mm x 40mm



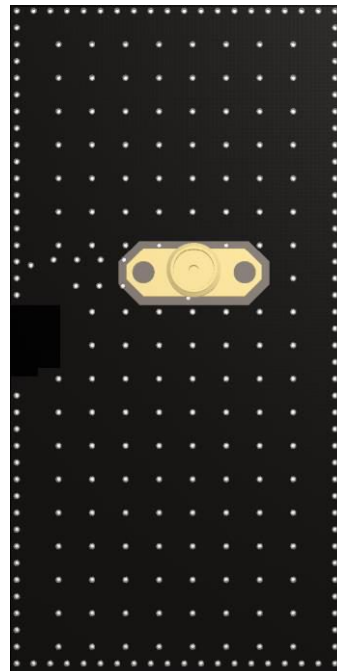
Front View without Antenna

80mm x 40mm



Front View with Antenna

80mm x 40mm



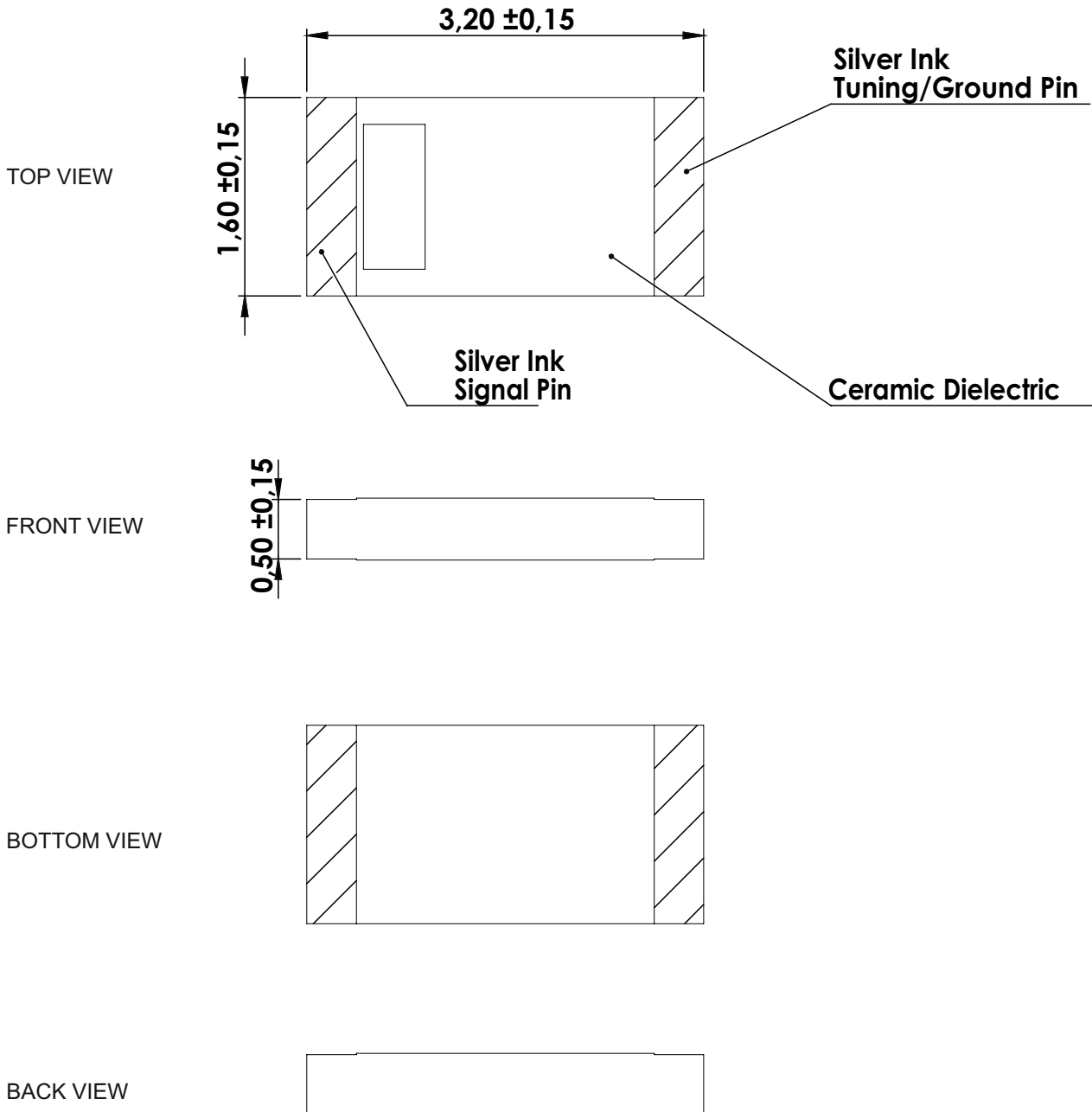
Back View

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

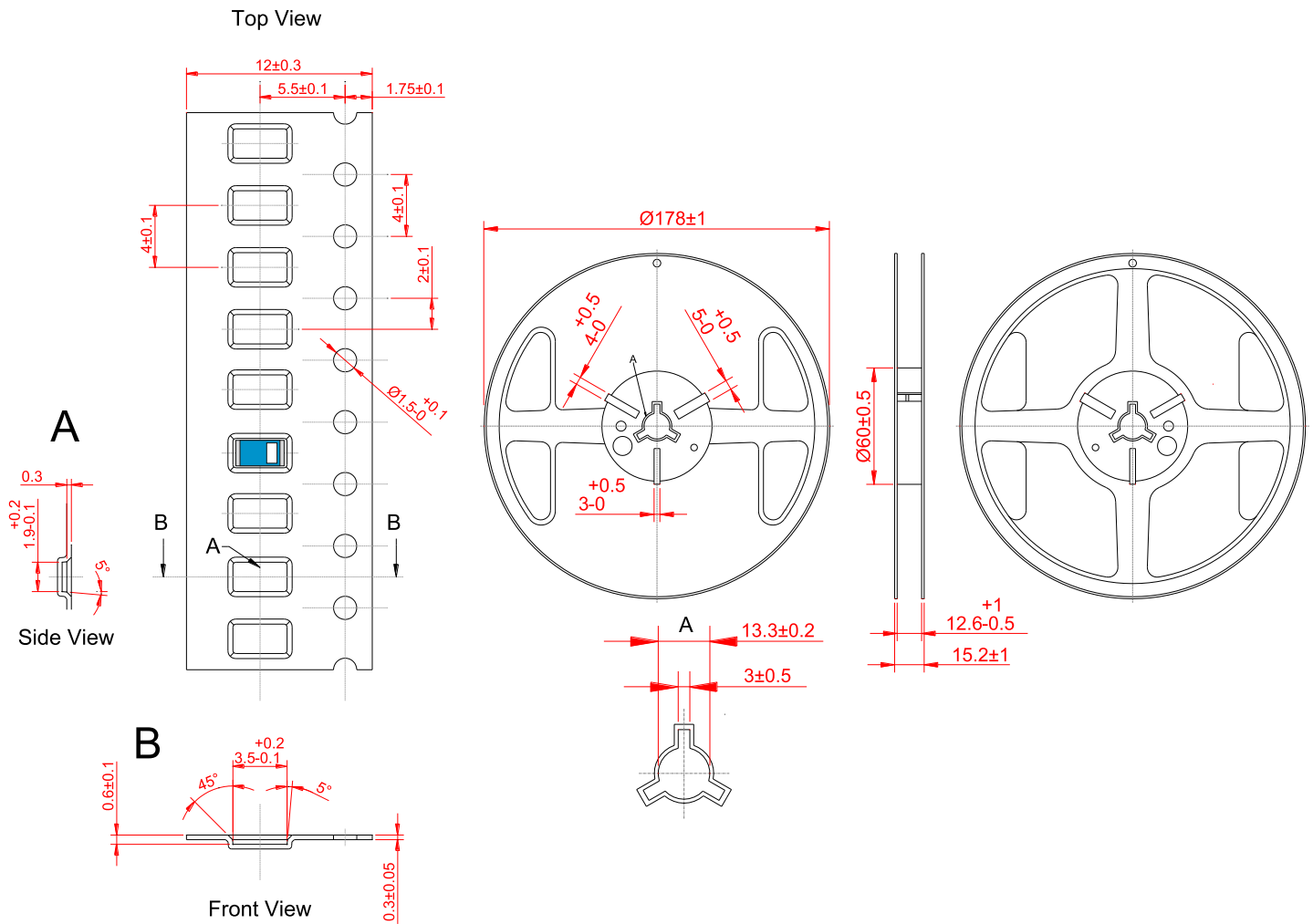


Side View

## 7. Antenna drawings



## 8. Tape and Reel Information



Tape and Reel Specifications

## 9. Packaging

### PACKAGING SPECIFICATION

<b>Antenna</b>	2JL40
<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.

## 10. Antenna Images

