

# 2JE49

868/915 MHz ISM Surface Mount

## Key Features

### 868/915 MHz ISM

- 863-870 MHz

- 902-928 MHz

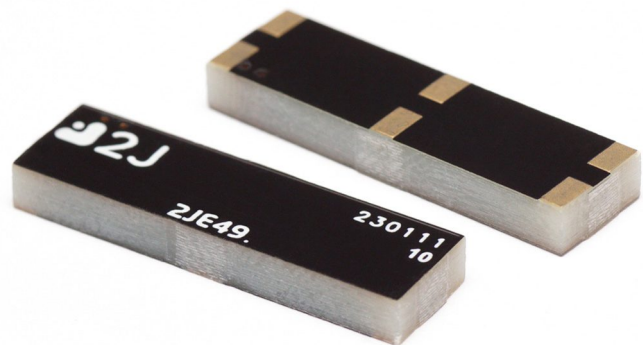
Surface Mount

High Performance

Fiberglass Material

Ground Plane Dependent

Dimensions 26 × 7.6 × 3 mm



## 1. Antenna and electrical specifications

Parameters	868/915 MHz ISM Antenna	
<b>Standards</b>	ZigBee, ISM, SigFox, LoRa	
<b>Band (MHz)</b>	868	915
<b>Frequency (MHz)</b>	863-870	902-928
<b>Return Loss (dB)</b>	~-10.6	~-14.1
<b>VSWR</b>	~1.8:1	~1.5:1
<b>Efficiency (%)</b>	~66.7	~81.7
<b>Peak Gain (dBi)</b>	~5.0	~5.8
<b>Average Gain (dB)</b>	~-1.8	~-0.9
<b>Impedance (Ohm)</b>	50	
<b>Polarisation</b>	Linear	
<b>Radiation Pattern</b>	Omni-Directional	
<b>Max. Input Power (W)</b>	25	

### Antenna Measurement Conditions:

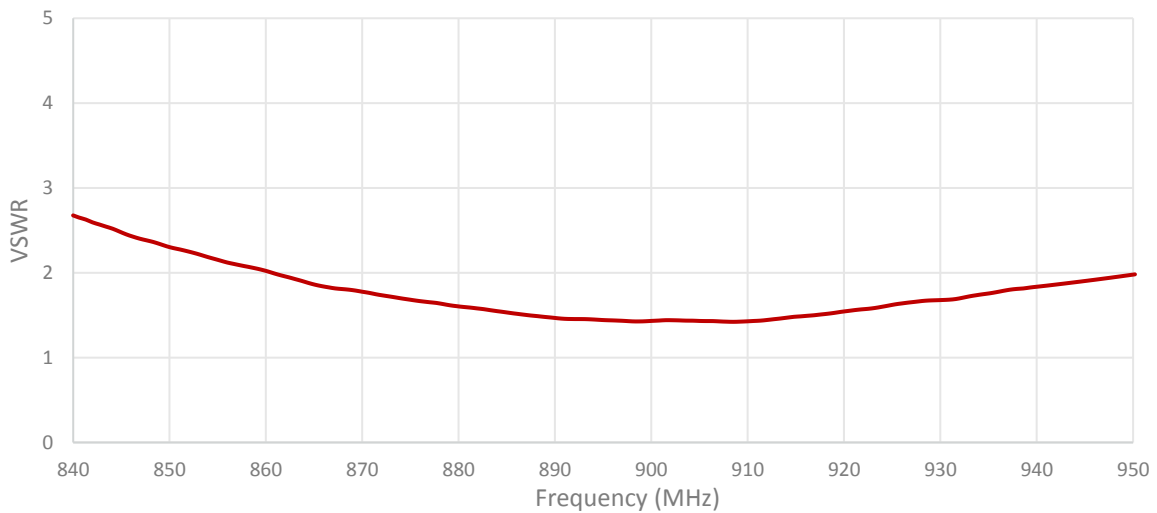
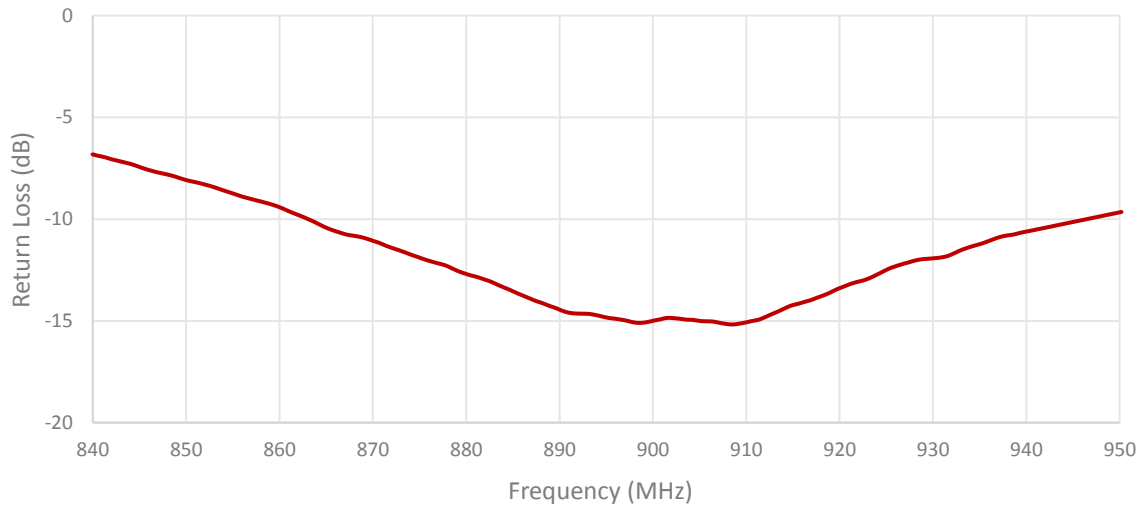
Mounted on ground plane of 113 x 40.5 mm

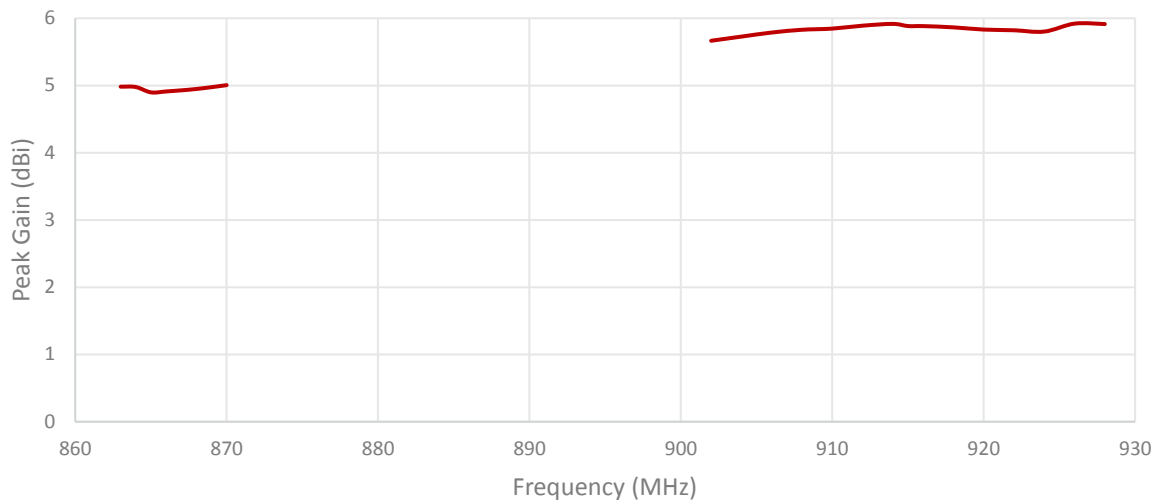
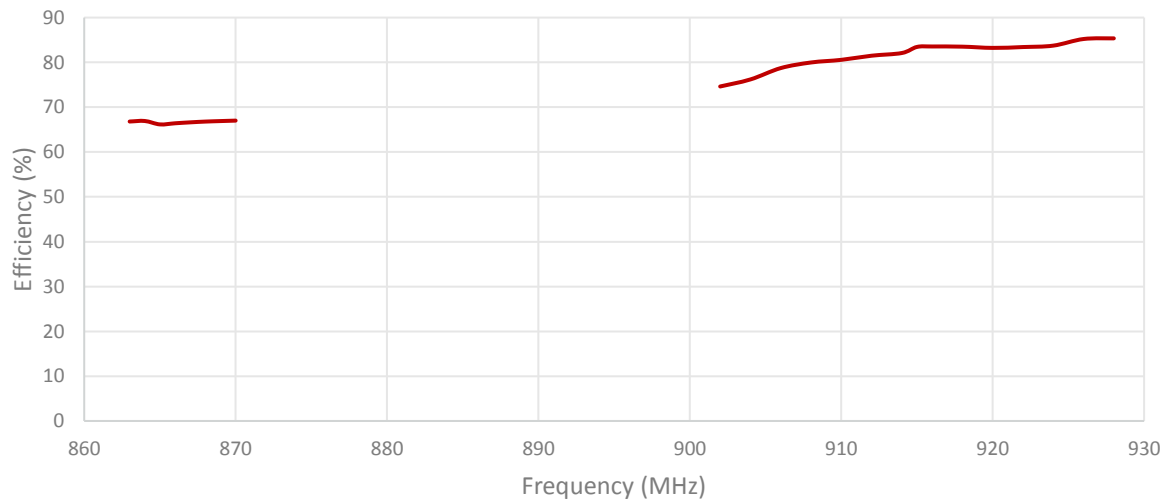
Measured in Certified CTIA 3D Anechoic Chamber

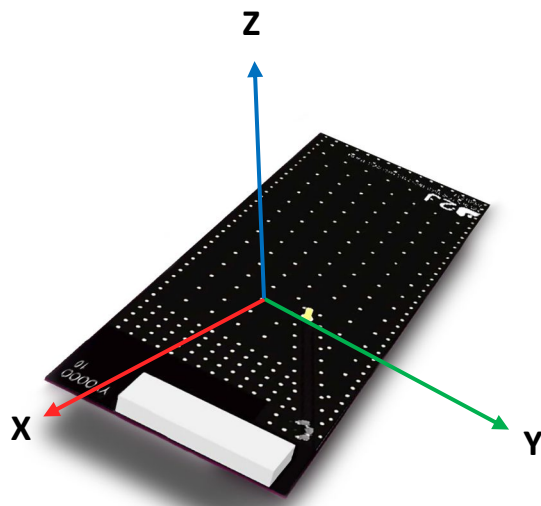
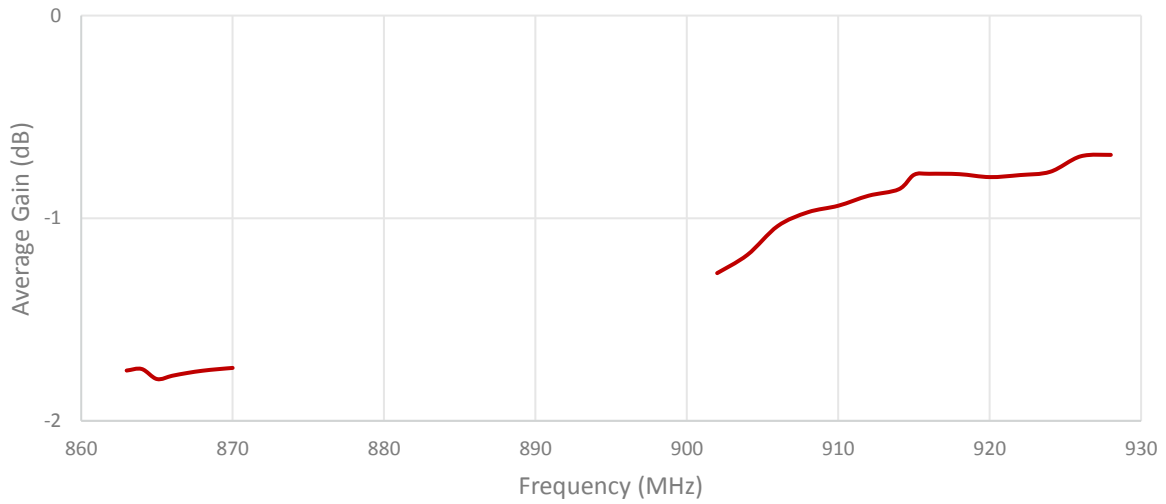
## 2. Mechanical and environmental specifications

Specifications	2JE49
<b>Mounting Type</b>	Surface Mount
<b>Dimensions (mm)</b>	26 × 7.6 × 3
<b>Material</b>	Fiberglass
<b>Operating Temperature (C)</b>	-40 to +105
<b>Storage Temperature (C)</b>	-40 to +85
<b>Storage Relative Humidity (%)</b>	Up to 93% at 30 C
<b>Substance Compliance</b>	RoHS
<b>Typical Shear Force Test</b>	50 kgf according to IEC62137-1-2:2007 Test Report No.: TRSF-2JSI113100002-01

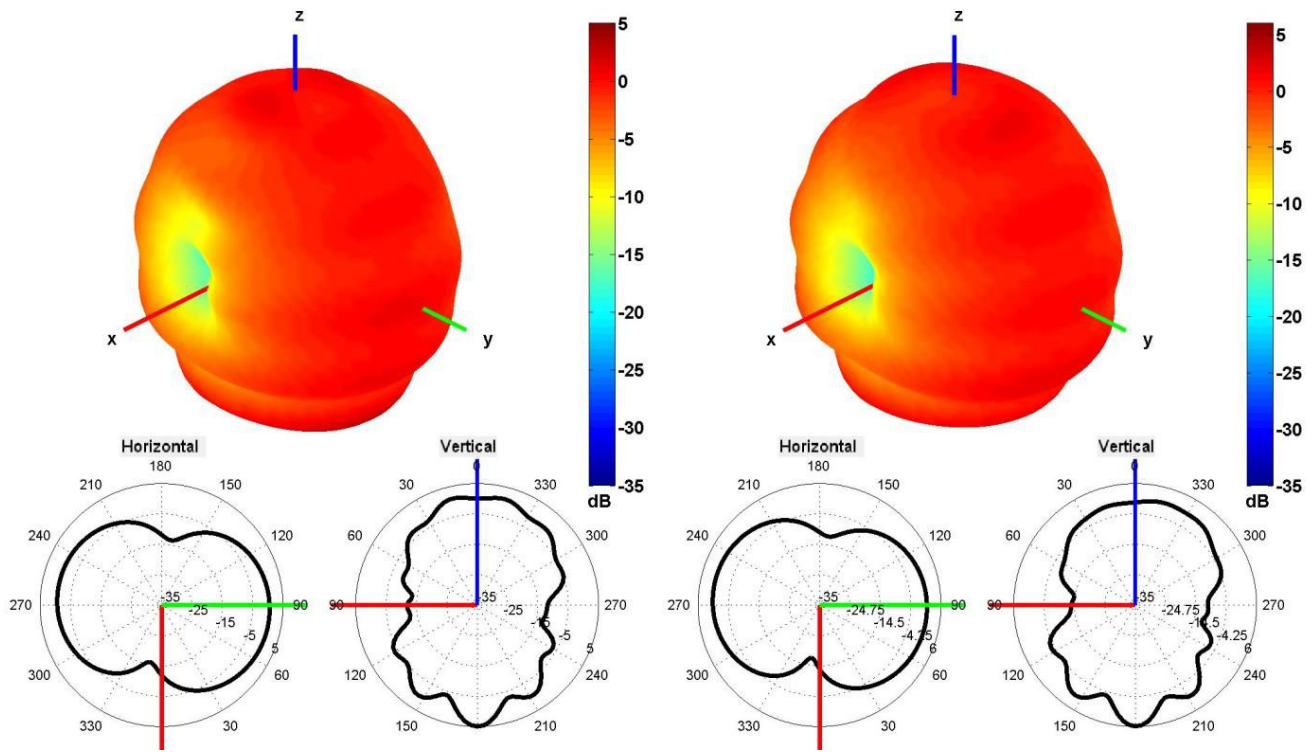
## 3. Antenna parameters





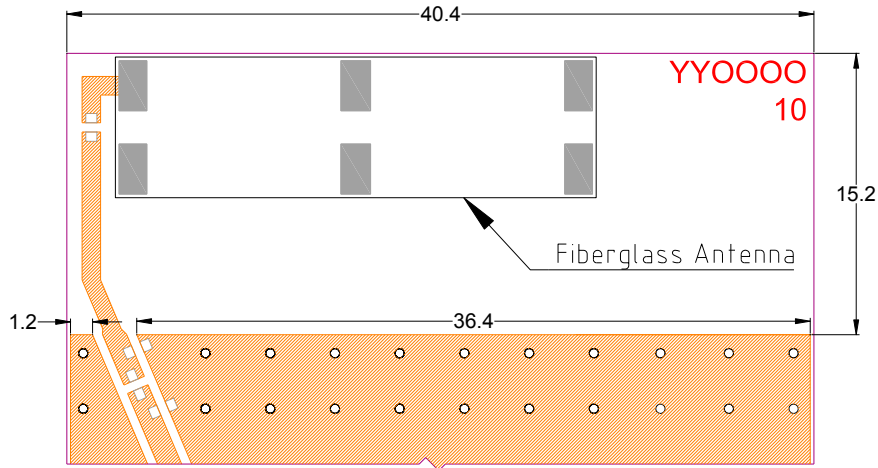


Radiation pattern reference



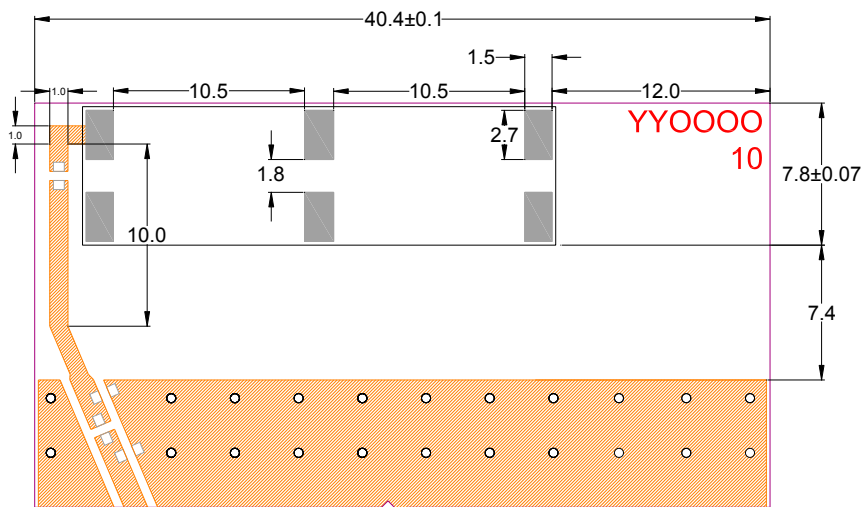
868 and 915 MHz Radiation pattern

## 4. PCB Layout



Minimum area required for antenna integration (40.4mm × 15.2mm)

- Solder Region
- Copper Region
- Copper-Free Region



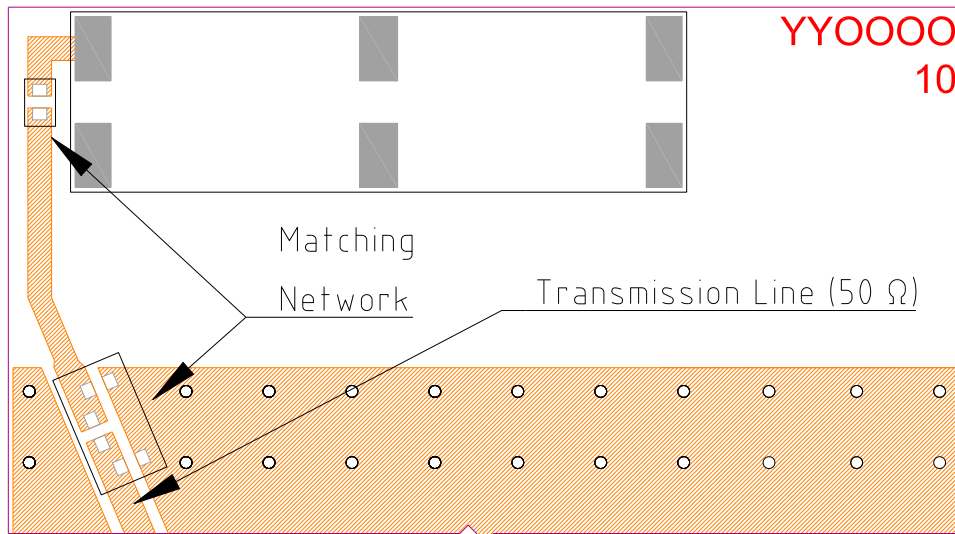
Layout dimensions for antenna integration (mm)

Tolerance of Linear Dimensions  
(unless otherwise indicated):

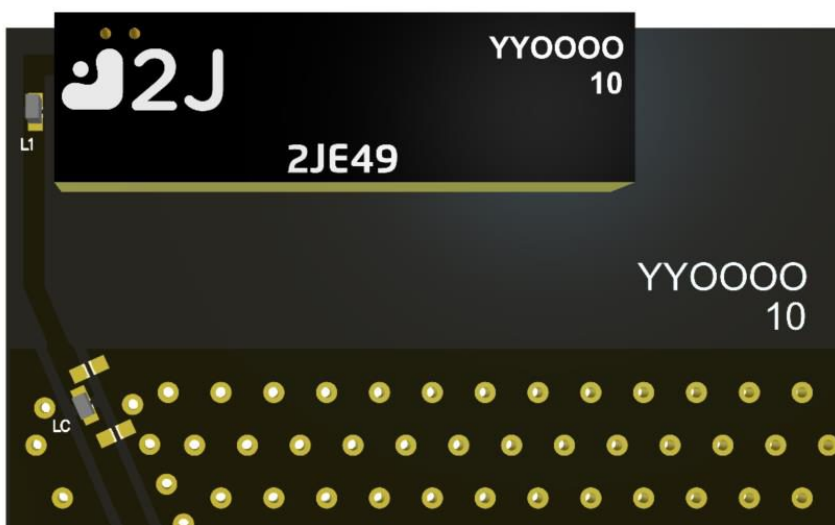
Dimension (mm)	Tolerance
0.5-6	+/-0.05
6-30	+/-0.07
30-50	+/-0.1

- Solder Region
- Copper Region
- Copper-Free Region

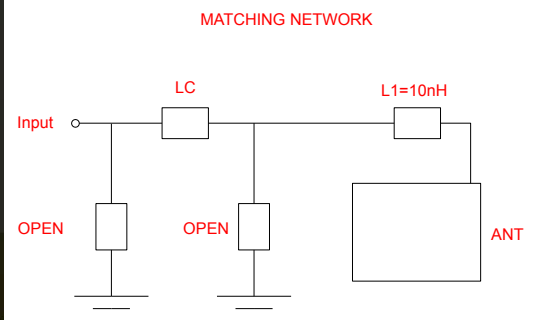
## 5. Matching Network



Matching network drawing



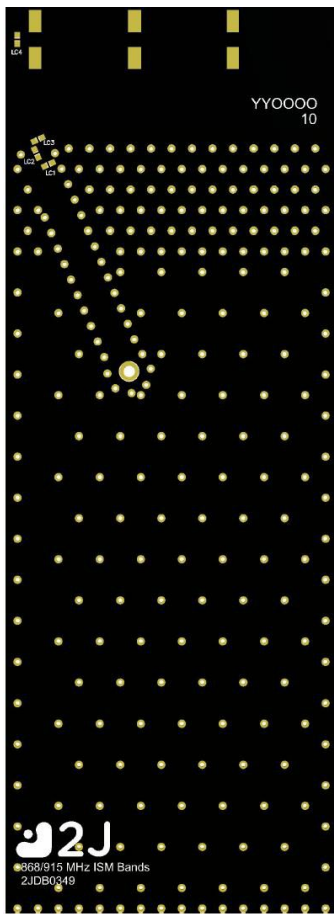
3D View of matching components and recommended values (LC = 0Ohm resistor)





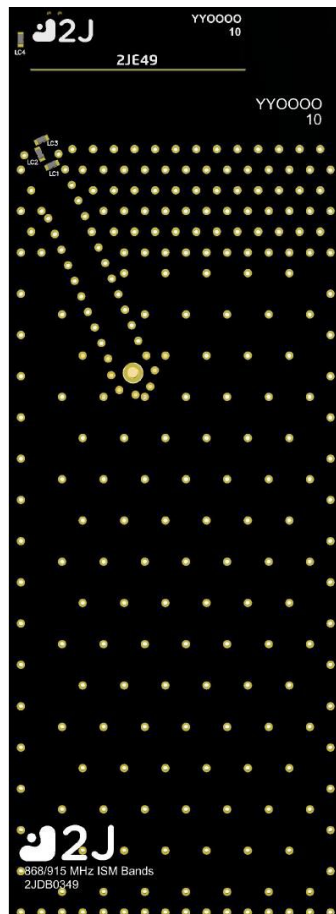
## 6. Evaluation Board

110.4mm x 40.4mm



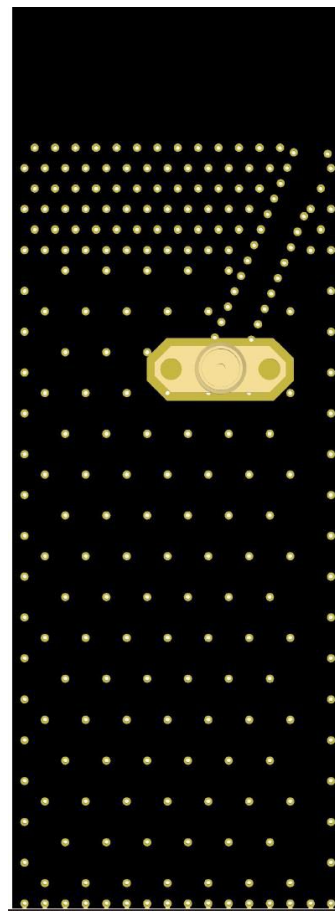
Front View without Antenna

110.4mm x 40.4mm



Front View with Antenna

110.4mm x 40.4mm



Back View

110.4mm x 40.4mm  
(PCB: 0.8mm, Antenna: 3mm,  
Connector: 9.5mm)



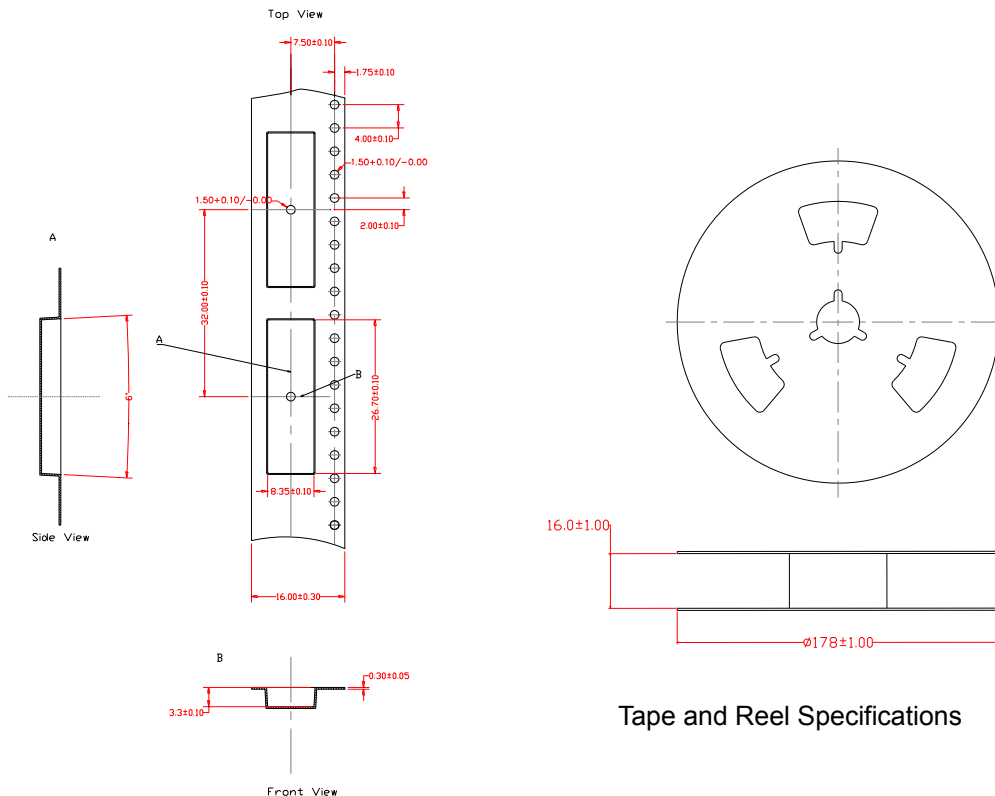
Side View

## 7. Packaging

### PACKAGING SPECIFICATION

<b>Antenna</b>	2JE49
<b>REEL</b>	
<b>Max Quantity per Reel</b>	140
<b>REEL CARTON</b>	
<b>Reels per Carton</b>	10
<b>Max Quantity per Carton</b>	1400
<b>Reel Carton Dimensions (cm)</b>	40.5 x 23 x 16.5
<b>Reel Carton Weight (Kg)</b>	3.3
<b>PALLET</b>	
<b>Max Cartons per Pallet</b>	70
<b>Cartons per Layer</b>	10
<b>Number of Layers</b>	7
<b>Max Quantities per Pallet</b>	98,000
<b>Total Cartons Dimensions (cm)</b>	115 x 81 x 115.5
<b>Total Cartons Weight (Kg)</b>	231
<b>Pallet size and weight not included above</b>	
<b>Typical Pallet Size (cm)</b>	120 x 100 x 14.4
<b>Typical Pallet Weight (Kg)</b>	5-25

## 8. Tape and Reel Information

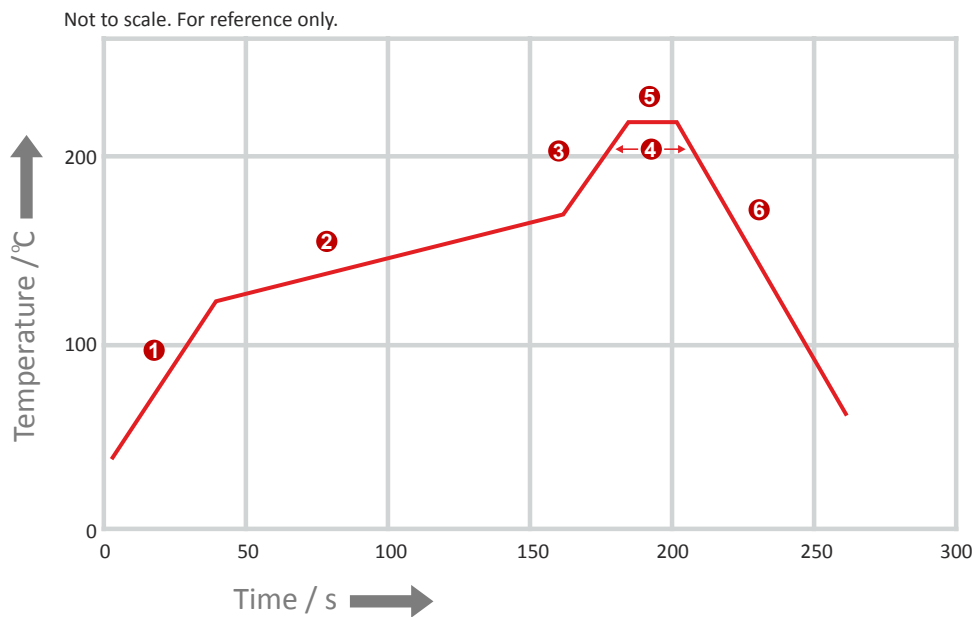


Tape and Reel Specifications

## REFLOW TEMPERATURE PROFILE

Minimum Recommended Reflow Profile

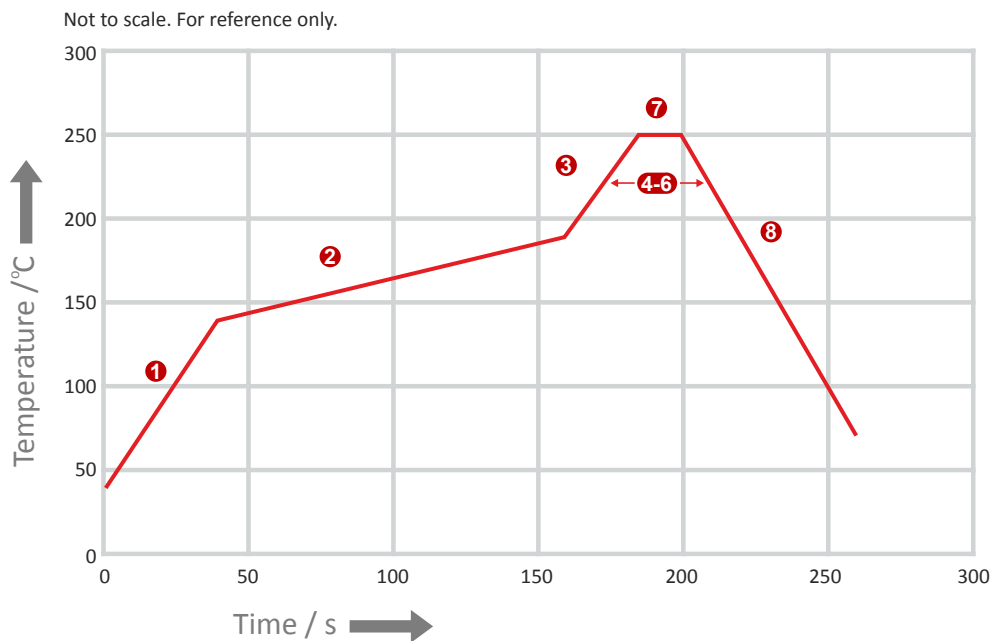
	Method of heat transfer	Controlled hot air convection
1	Average temperature gradient in preheating	2.5 °C/s
2	Soak time	2-3 minutes
3	Max temperature gradient in reflow	3 °C/s
4	Time above 217 °C	Max 30 sec
5	Peak temperature in reflow	230 °C for 10 seconds
6	Temperature gradient in cooling	Max -5 °C/s



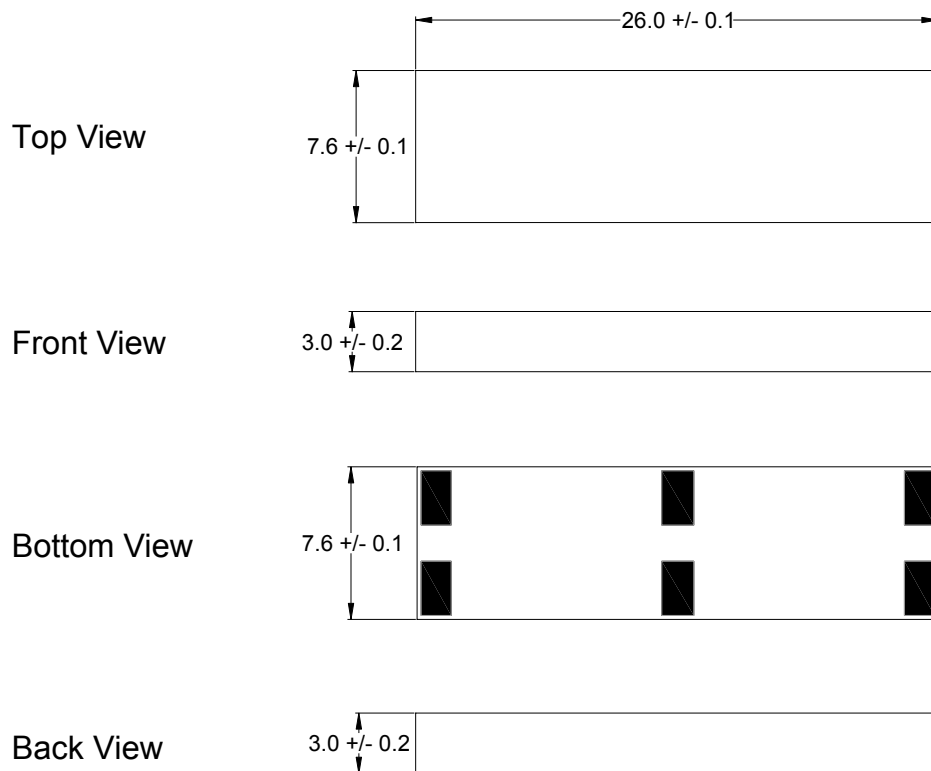
## REFLOW TEMPERATURE PROFILE

Maximum Recommended Reflow Profile

	Method of heat transfer	Controlled hot air convection
1	Average temperature gradient in preheating	2.5 °C/s
2	Soak time	2-3 minutes
3	Max temperature gradient in reflow	3 °C/s
4	Time above 217 °C	Max 60 sec
5	Time above 230 °C	Max 50 sec
6	Time above 250 °C	Max 10 sec
7	Peak temperature in reflow	260 °C for 5 seconds
8	Temperature gradient in cooling	Max -5 °C/s



## 9. Antenna drawings



Dimensions for fiberglass antenna 26 x 7.6 x 3 mm  $\pm 0.2$ mm

## 10. Antenna Images

