

2JE15b

433 MHz ISM Surface Mount

Key Features

- 433 MHz ISM
- 433-435 MHz
- Surface Mount
- Easy to Integrate
- Compact Size
- Ceramic Material
- Ground Plane Dependent
- Dimensions 12 x 4 x 1.6 mm



1. Antenna and electrical specifications

Parameters	433 MHz ISM Antenna
Standards	ISM, LoRa
Band (MHz)	433 MHz
Frequency (MHz)	433-435
Return Loss (dB)	~-15.0
VSWR	~1.5:1
Peak Gain (dBi)	~-10.3
Average Gain (dB)	~-13.6
Impedance (Ohm)	50
Polarisation	Linear
Radiation Pattern	Omni-Directional
Max. Input Power (W)	10

Antenna Measurement Conditions:

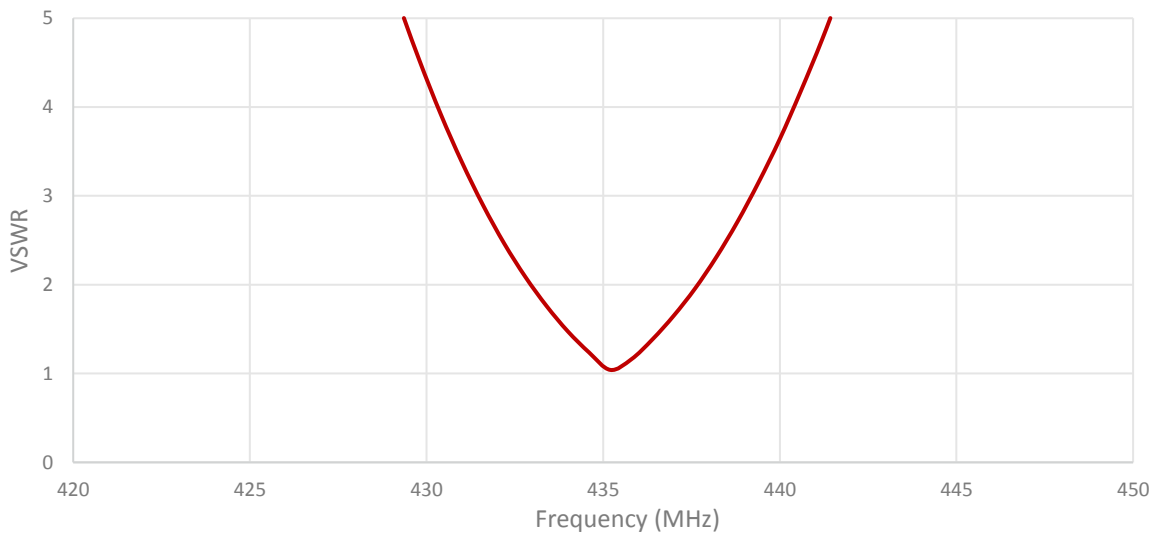
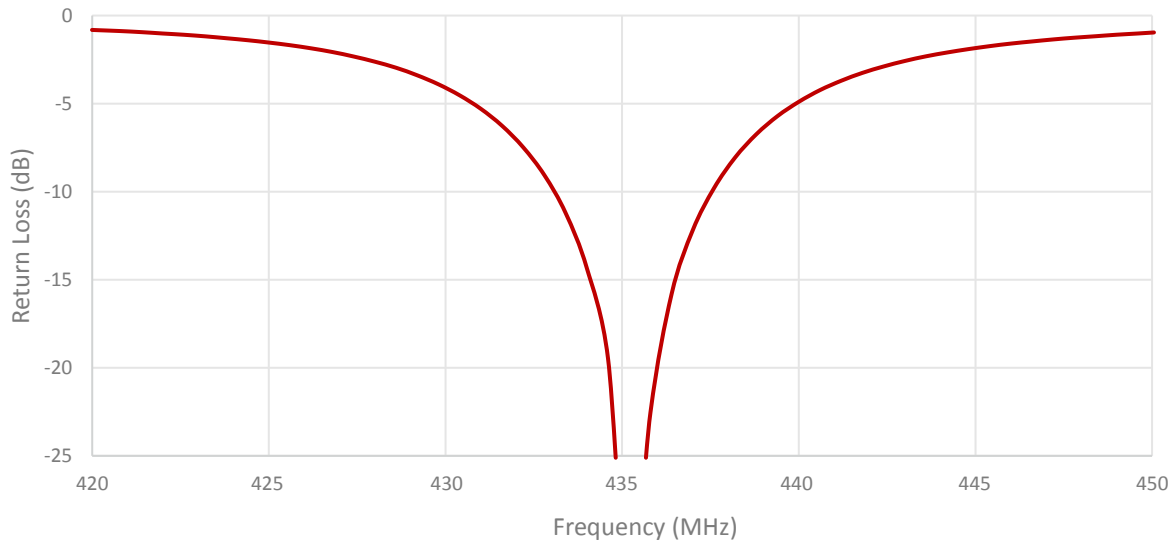
Mounted on ground plane of 50 x 90 mm

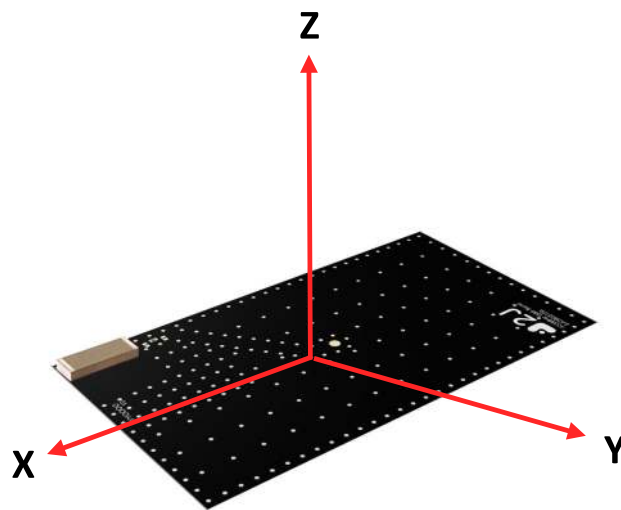
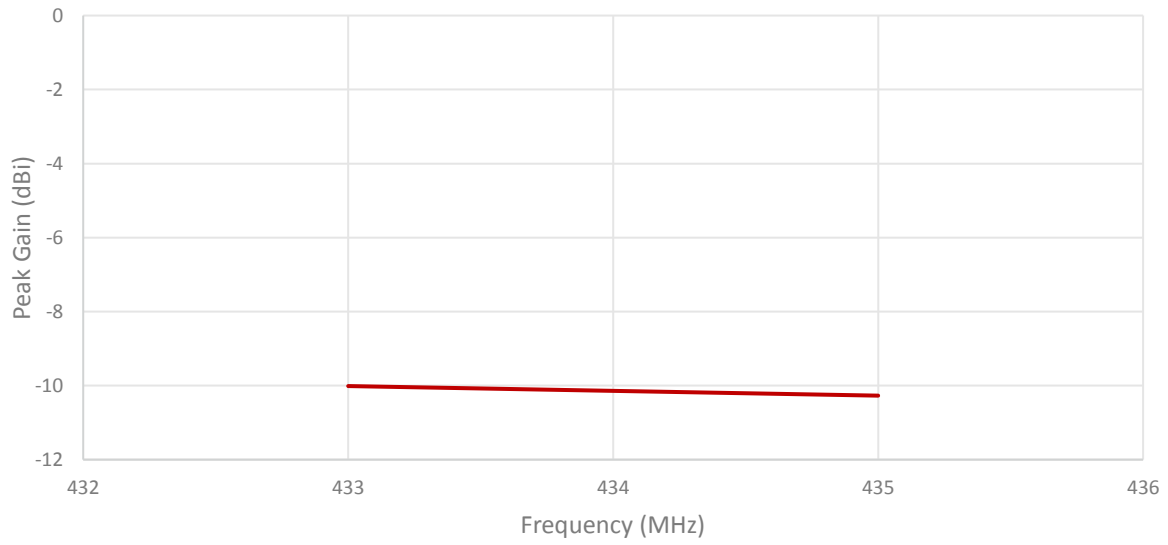
Measured in Certified CTIA 3D Anechoic Chamber

2. Mechanical and environmental specifications

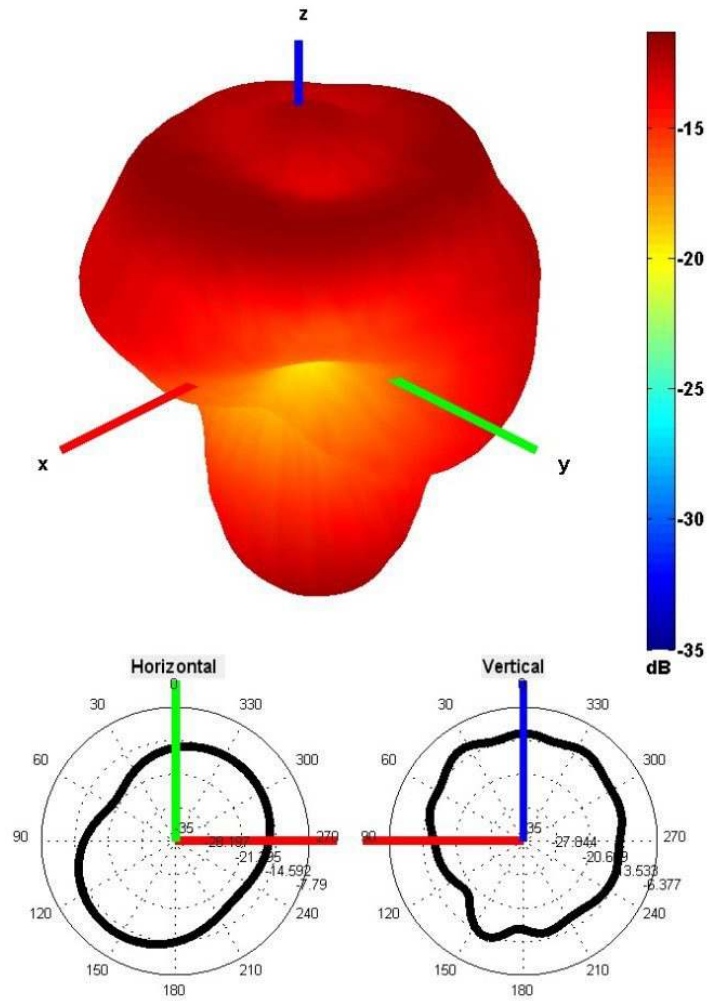
Specifications	2JE15b
Mounting Type	Surface Mount
Dimensions (mm)	12 x 4 x 1.6
Material	Ceramic
Operating Temperature (C)	-40 to +85
Storage Temperature (C)	-40 to +85
Substance Compliance	RoHS

3. Antenna parameters



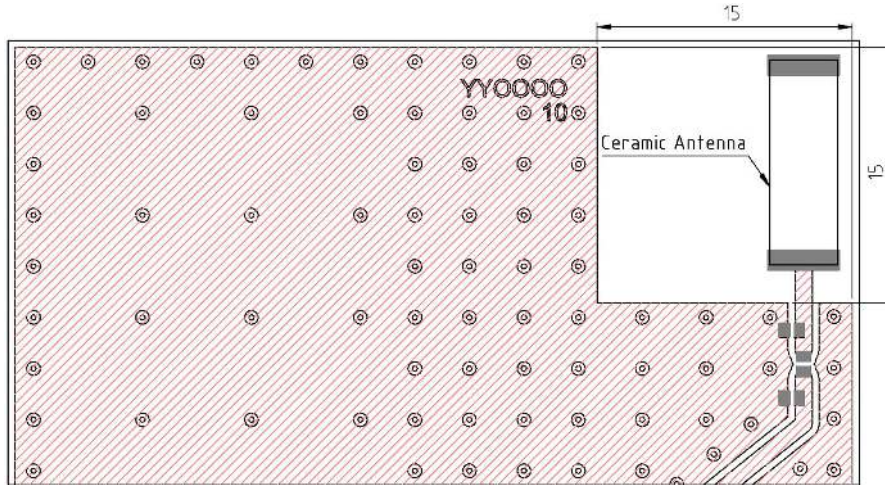


Radiation pattern reference






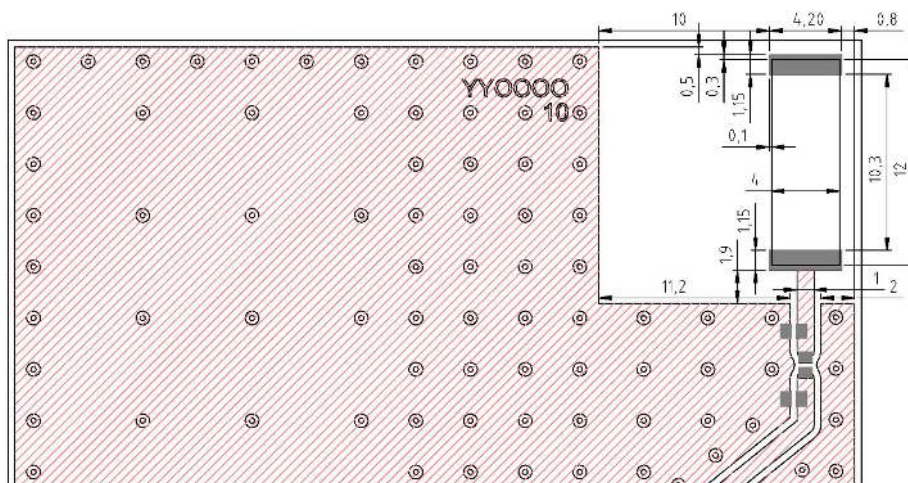
433 MHz Radiation pattern

4. PCB Layout






Minimum area required for antenna integration (15mm × 15mm)

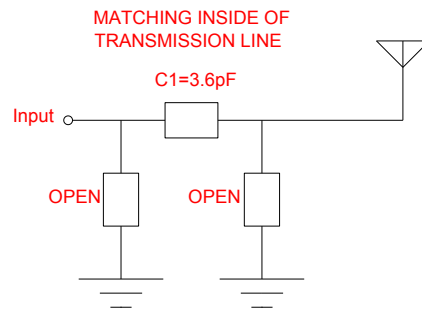
-  Solder Region
-  Copper Region
-  Copper-Free Region



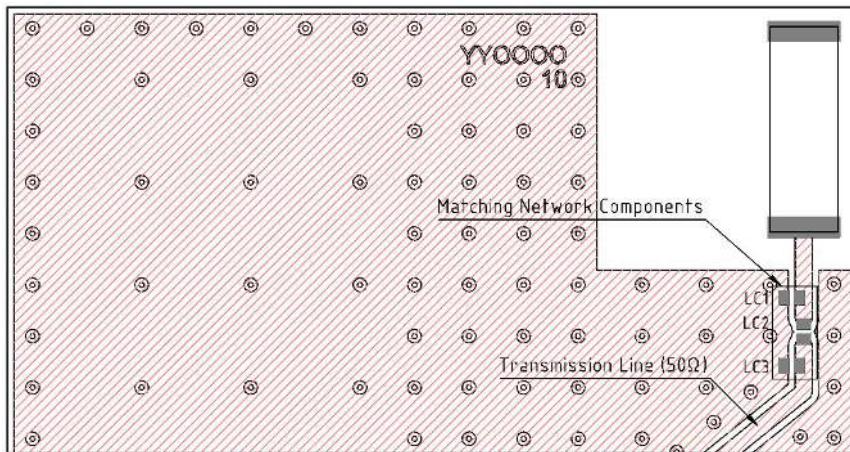
Layout dimensions for antenna integration (mm)

-  Solder Region
-  Copper Region
-  Copper-Free Region

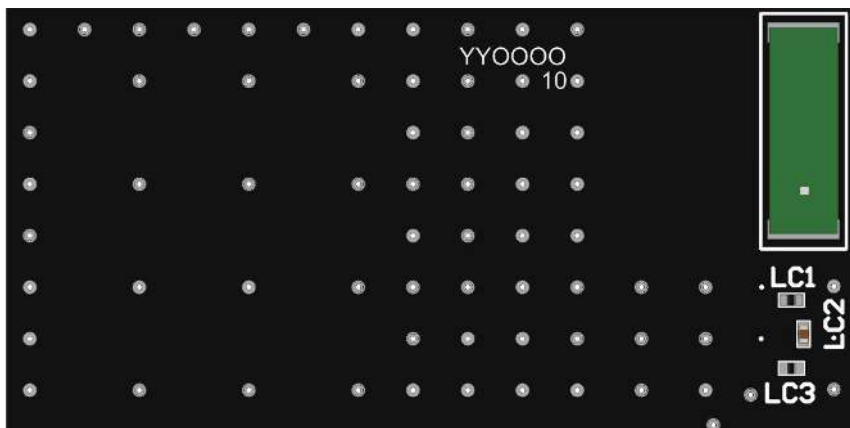
5. Matching Components



Matching Network Schematic

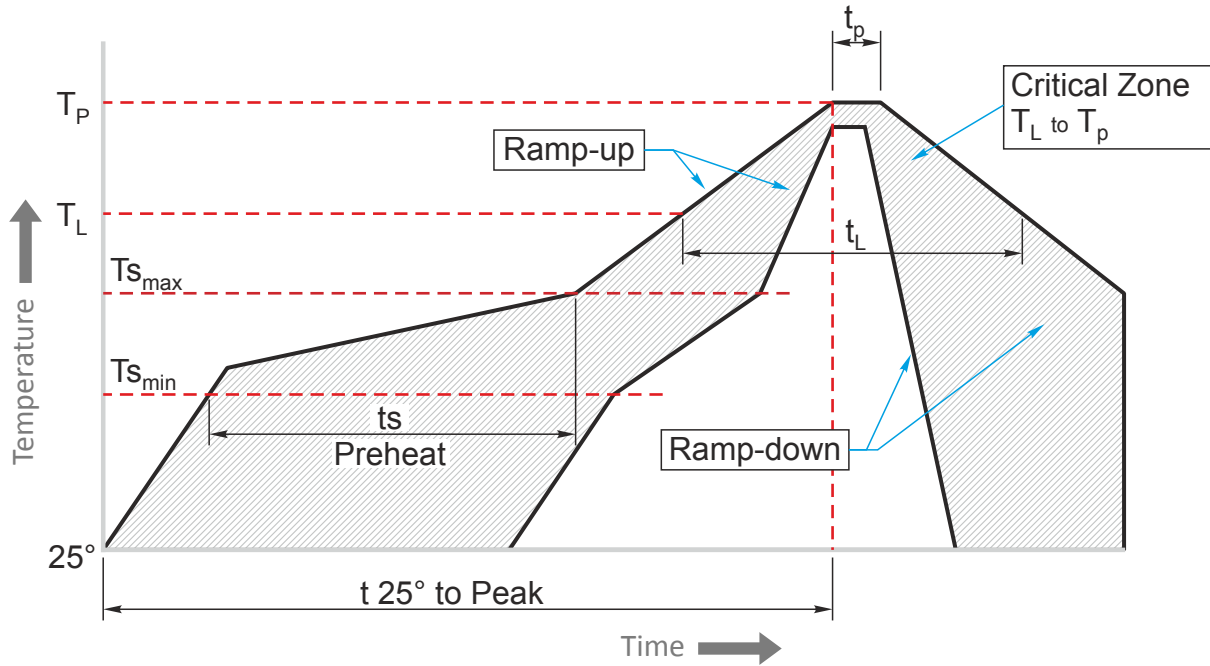


Matching network drawing (LC1 = OPEN, LC2=3.6pF, LC3= OPEN)



3D View of matching components and recommended values (LC1 = OPEN, LC2=3.6pF, LC3= OPEN)

REFLOW TEMPERATURE PROFILE



Phase	Profile features	Sn-Pb Assembly	Pb-Free Assembly (SnAgCu)
RAMP-UP	Avg. Ramp-up Rate ($T_{s_{max}}$ to T_p)	3°C / second (max)	3°C / second (max)
PREHEAT	-Temperature Min Rate ($T_{s_{min}}$) -Temperature Max Rate ($T_{s_{min}}$) -Time ($t_{s_{min}}$ to $t_{s_{max}}$)	100°C 150°C 60-120 seconds	100°C 150°C 60-120 seconds
REFLOW	-Temperature (T_L) -Total Time above T_L (t_L)	183°C 60-150 seconds	217°C 60-150 seconds
PEAK	-Temperature (T_p) -Time (t_p)	235°C 10-30 seconds	260°C 20-40 seconds
RAMP-DOWN	Rate	6°C / second max.	6°C / second max.
Time from 25°C to Peak Temperature		6 minutes max.	8 minutes max.

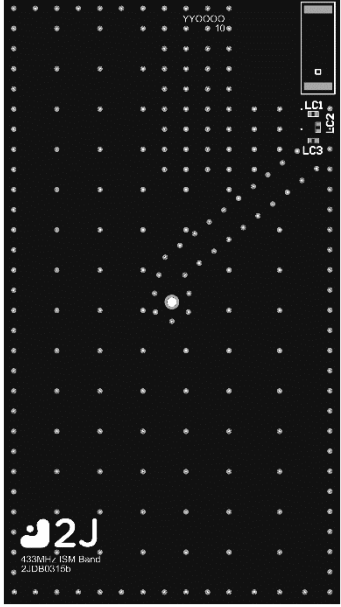
6. Evaluation Board

90mm x 50mm

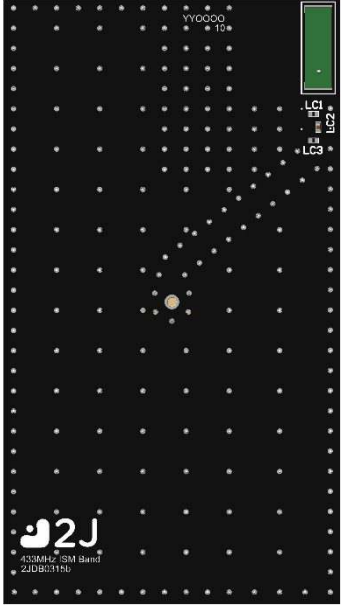
90mm x 50mm

90mm x 50mm

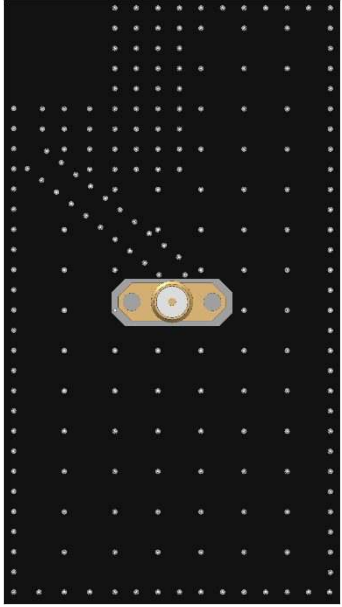
90mm x 11.9mm
(PCB: 0.8mm, Antenna: 1.6mm,
Connector: 9.5mm)



Front View without Antenna



Front View with Antenna

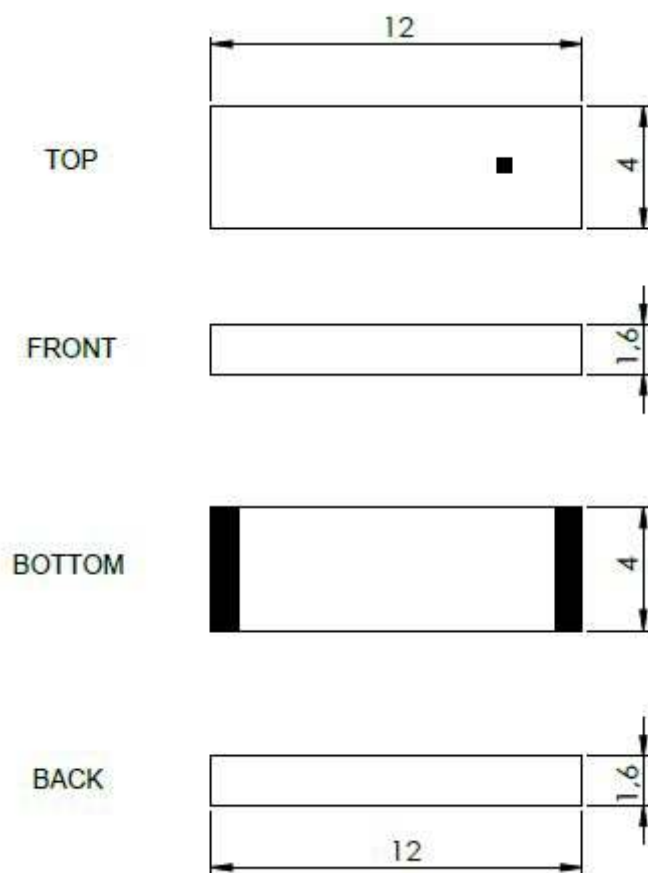


Back View



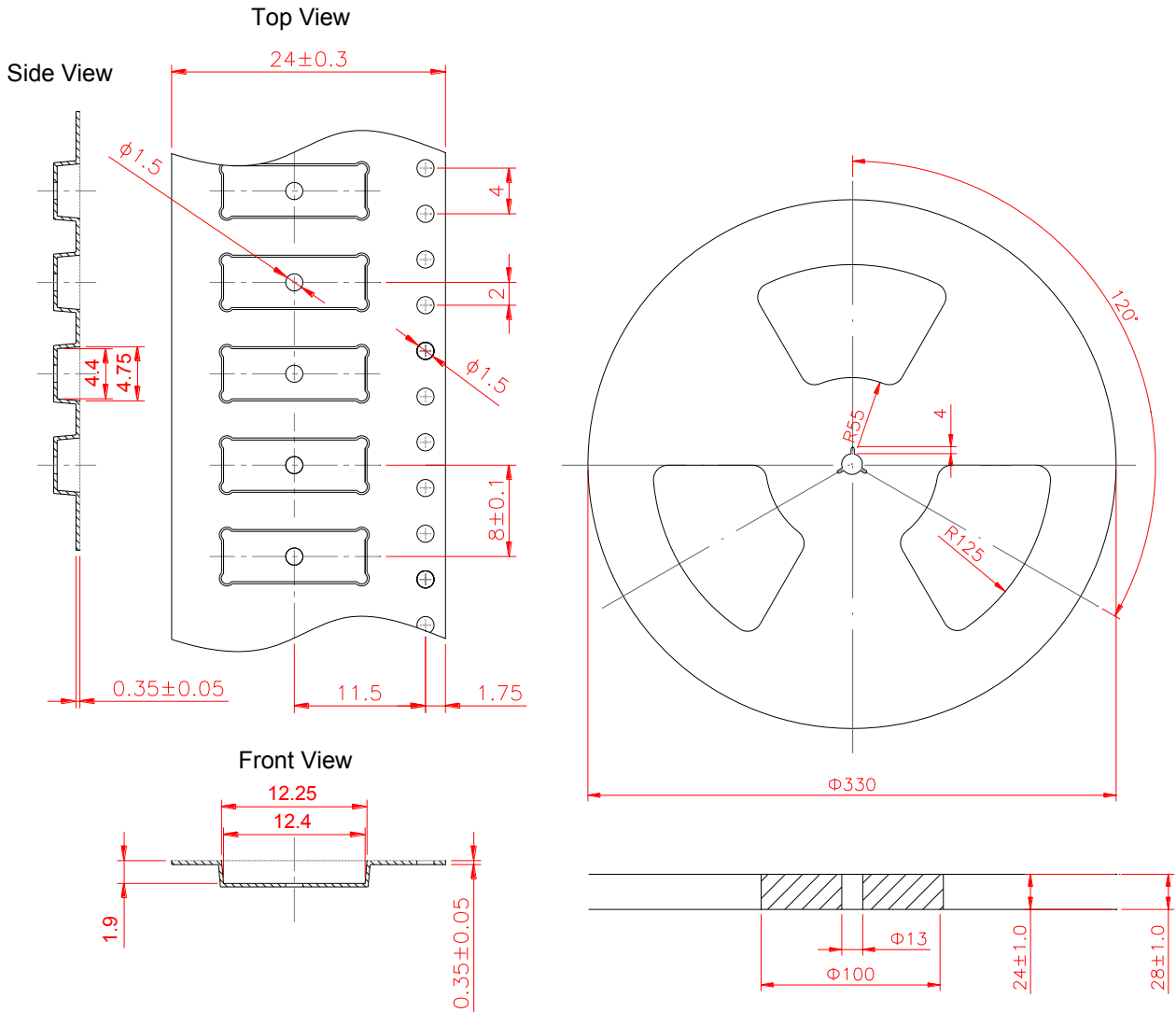
Side View

7. Antenna drawings



ceramic antenna body (mm)

8. Tape and Reel Information



Tape and Reel Specifications

9. Packaging

PACKAGING SPECIFICATION

Antenna	2JE15b
REEL	
Max Quantity per Reel	3000
REEL BOX	
Reels per Box	1
Reel Box Dimensions (cm)	34 x 34 x 4.9
Reel Box Weight (Kg)	1.4
CARTON	
Reels per Carton	5
Max Quantity per Carton	15,000
Reel Carton Dimensions (cm)	34.5 x 25 x 36
Reel Carton Weight (Kg)	7.5

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

