antenna conceptor

Product Datasheet

2JE06a

169 MHz ISM-ERMES Surface Mount

Key Features

169 MHz ISM-ERMES
- 169.4-169.9 MHz
Surface Mount
Easy to Integrate
Compact Size
Fiberglass Material
Ground Plane Dependent
Dimensions 40 x 7 x 2.4 mm

1. Antenna and electrical specifications

Parameters	169 MHz ISM Antenna
Standards	ERMES, ISM, VHF
Band (MHz)	169
Frequency (MHz)	169.4-169.9
Return Loss (dB)	~-20.0
VSWR	~1.2:1
Peak Gain (dBi)	~6.0
Impendance (Ohm)	50
Polarisation	Linear
Radiation Pattern	Omni-Directional
Max. Input Power (W)	10

Antenna Measurement Conditions:

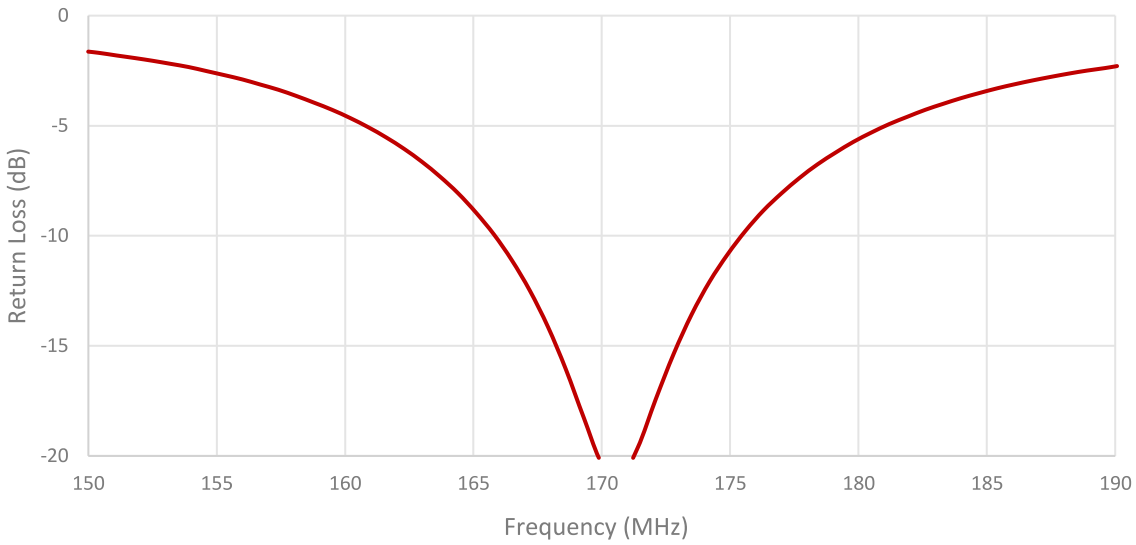
Mounted on ground plane of 50 x 90 mm

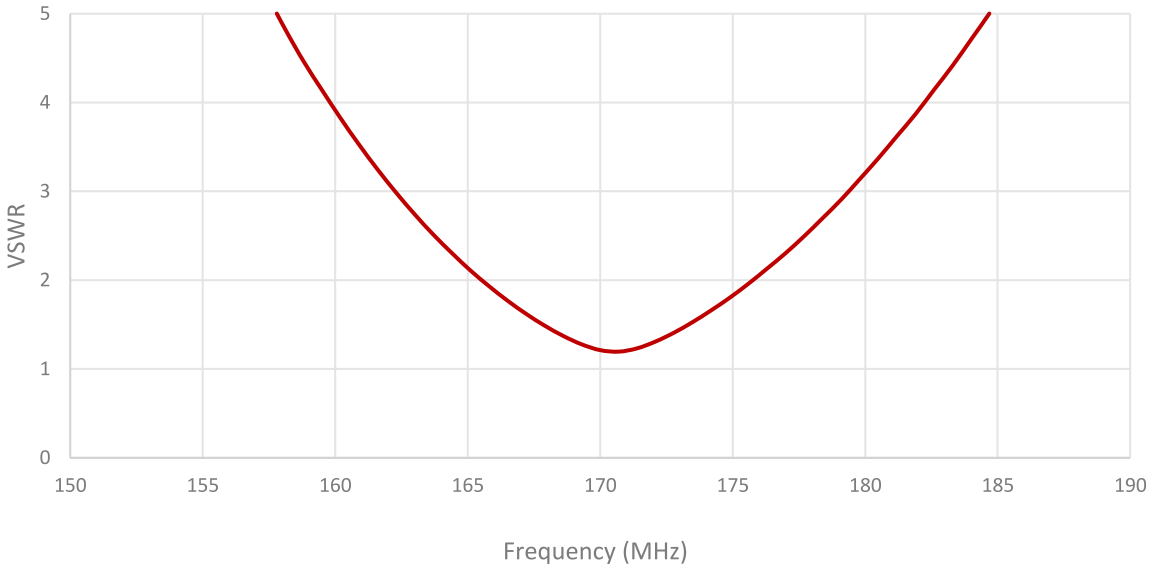
Measured in Certified CTIA 3D Anechoic Chamber

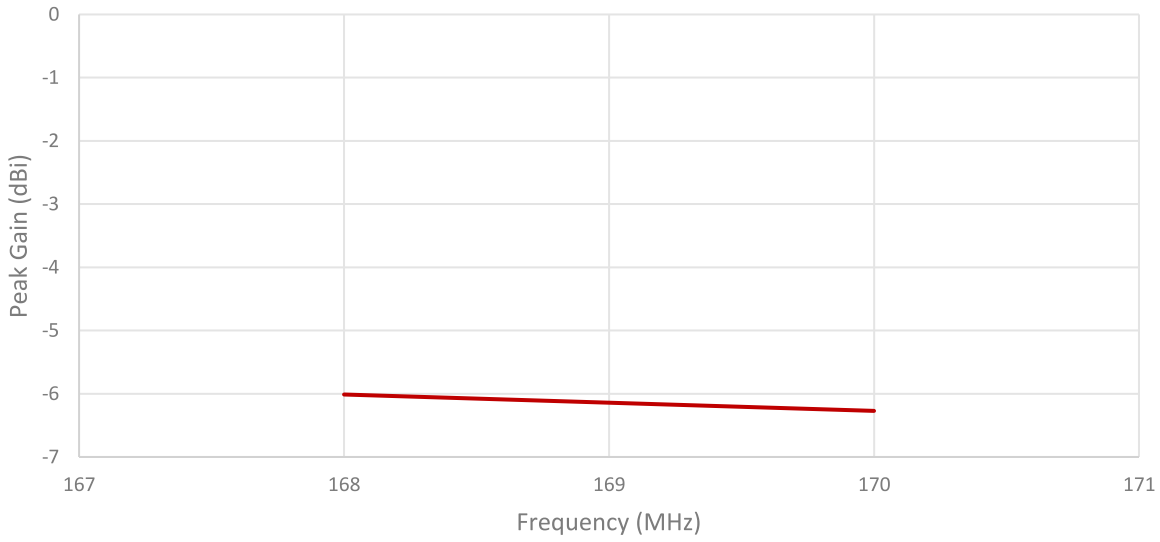
2. Mechanical and environmental specifications

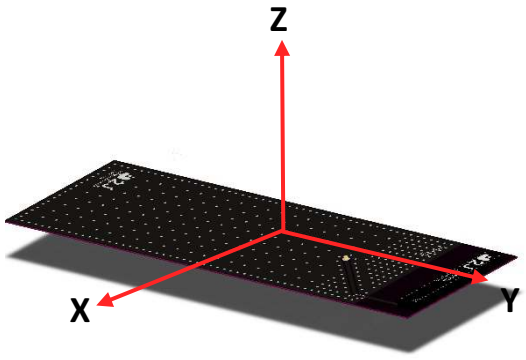
Specifications	2JE06a
Mounting Type	Surface Mount
Dimensions (mm)	40 x 7 x 2.4
Material	Fiberglass
Operating Temperature (C)	-40 to +85
Storage Temperature (C)	-40 to +85
Substance Compliance	RoHS
Typical Shear Force Test	34.5 Kgf according to IEC62137-1-2:2007

3. Antenna parameters

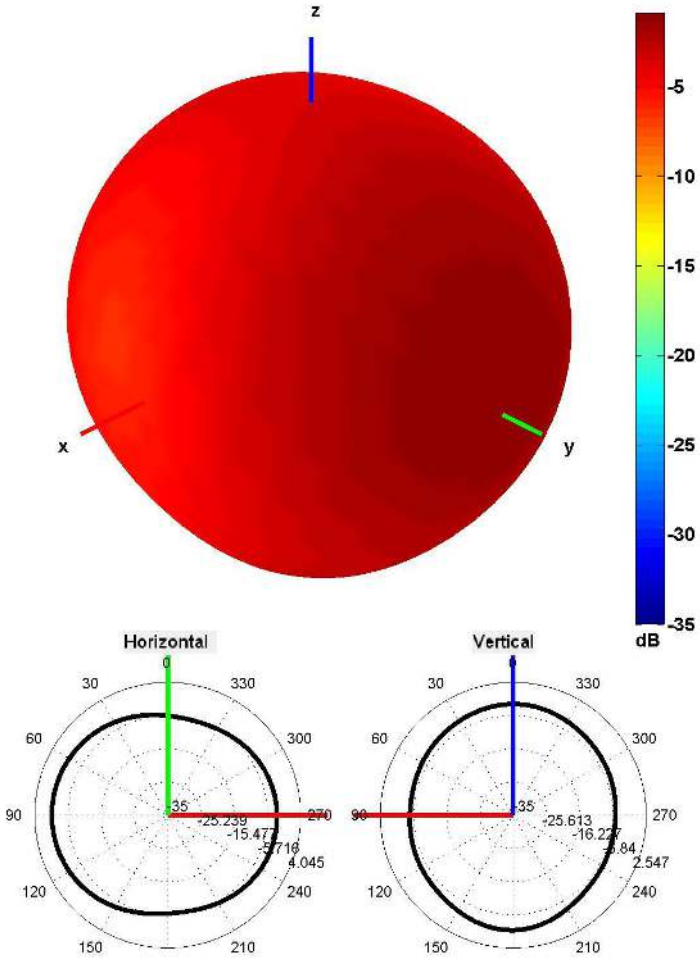






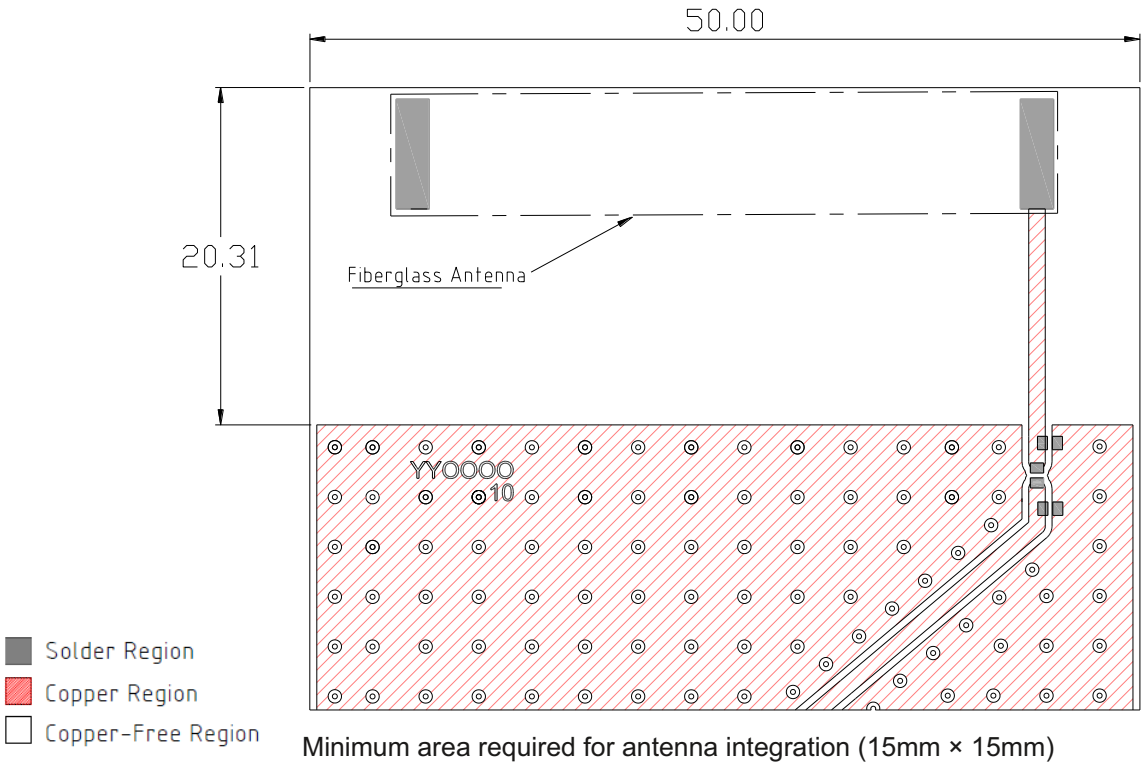


RADIATION PATTERN REFERENCE

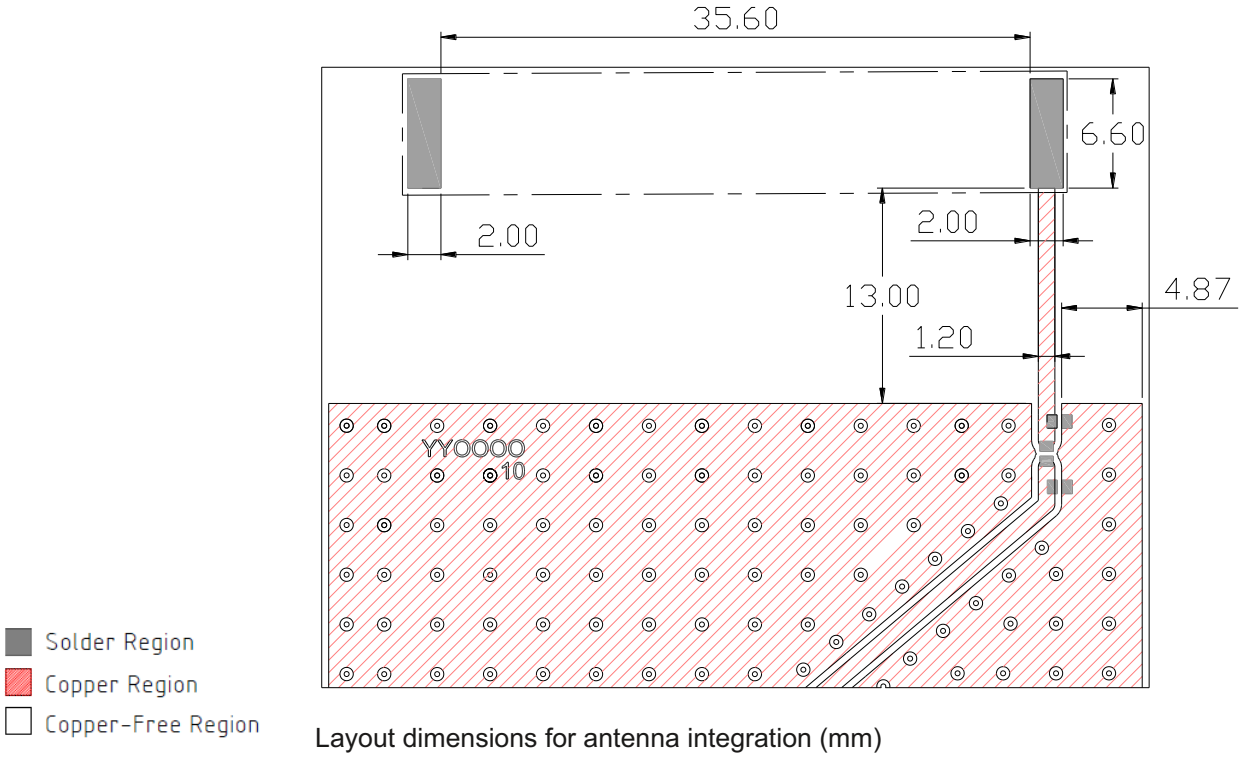


169 MHz Radiation pattern

4. PCB Layout

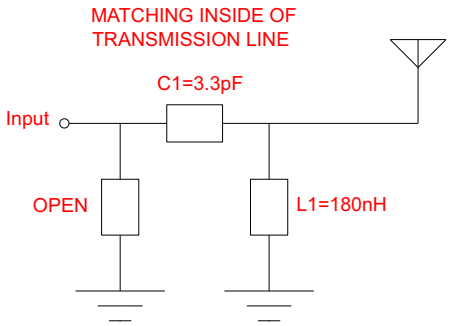


Minimum area required for antenna integration (15mm × 15mm)

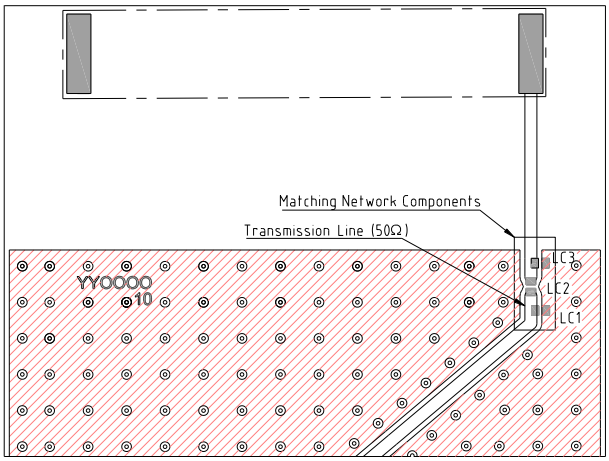


Layout dimensions for antenna integration (mm)

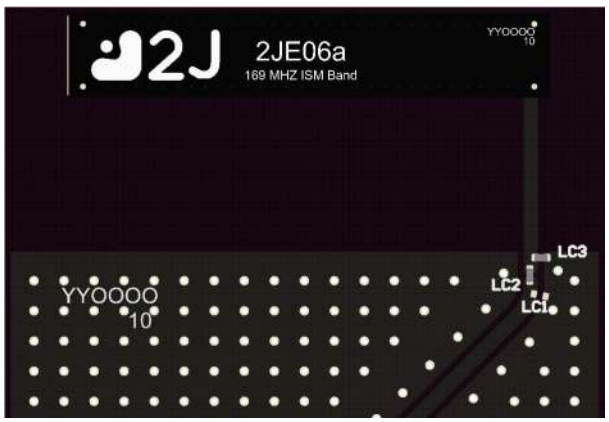
5. Matching Components



Matching Network Schematic



Matching network drawing (LC1=0.3pF, LC2=2.7pF, LC3=OPEN)



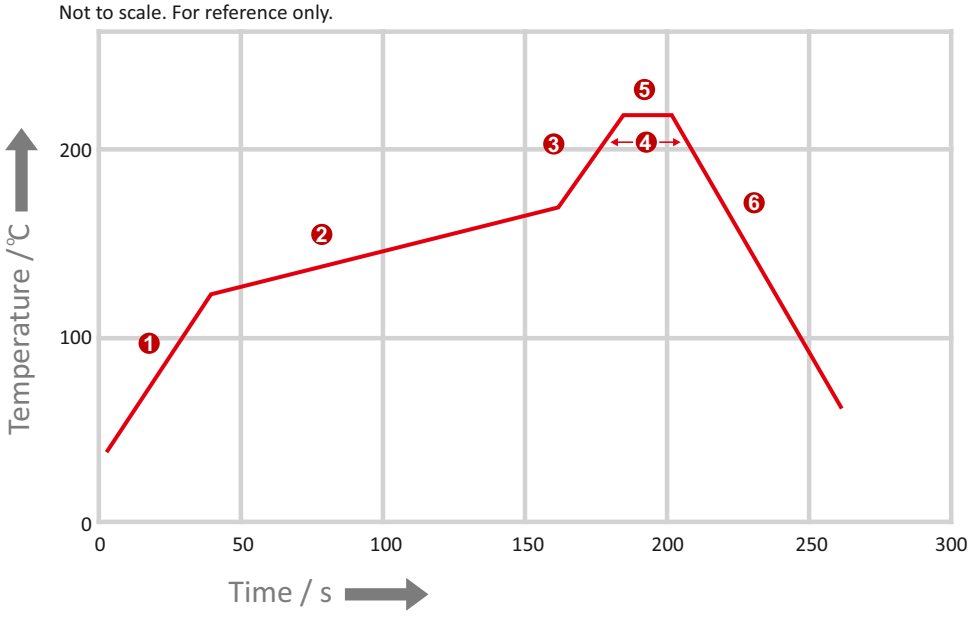
3D View of matching components and recommended values (LC1 = OPEN, LC2=3.3pF, LC3= 180nH)

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

Not to scale. For reference only.

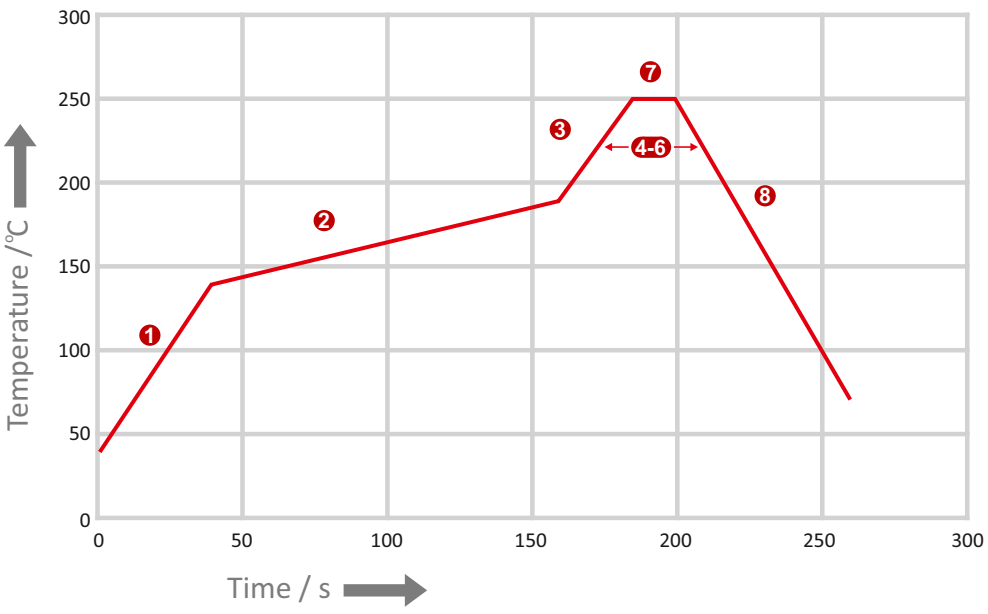


REFLOW TEMPERATURE PROFILE

Maximum Recommended Reflow Profile

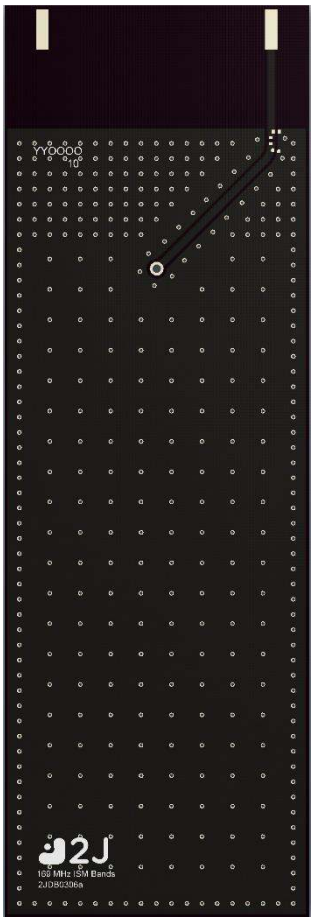
	Method of heat transfer	Controlled hot air convection
1	Average temperature gradient in preheating	2.5 °C/s
2	Soak time	2-3 minutes
3	Max temperature gradient in reflow	3 °C/s
4	Time above 217 °C	Max 60 sec
5	Time above 230 °C	Max 50 sec
6	Time above 250 °C	Max 10 sec
7	Peak temperature in reflow	260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

Not to scale. For reference only.



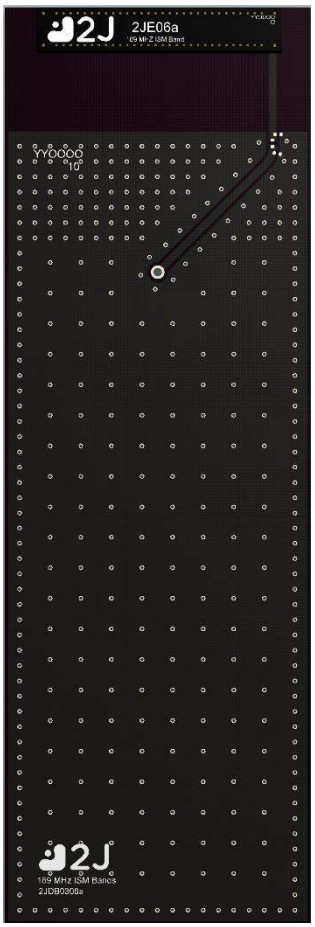
6. Evaluation Board

90mm x 50mm



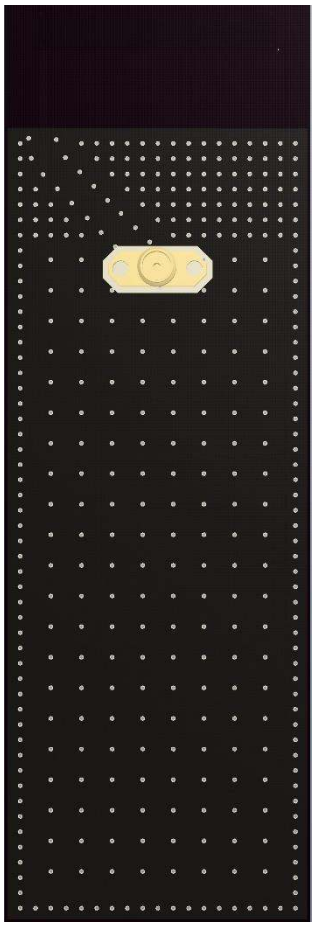
Front View without Antenna

90mm x 50mm



Front View with Antenna

90mm x 50mm

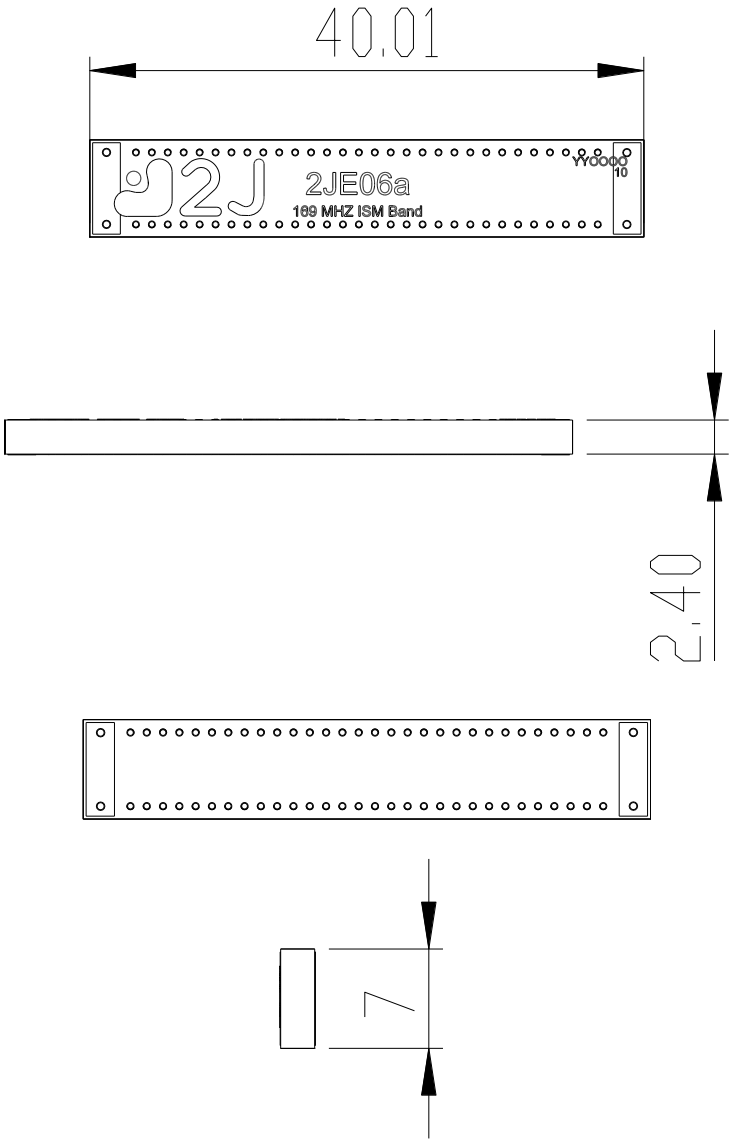


Back View

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

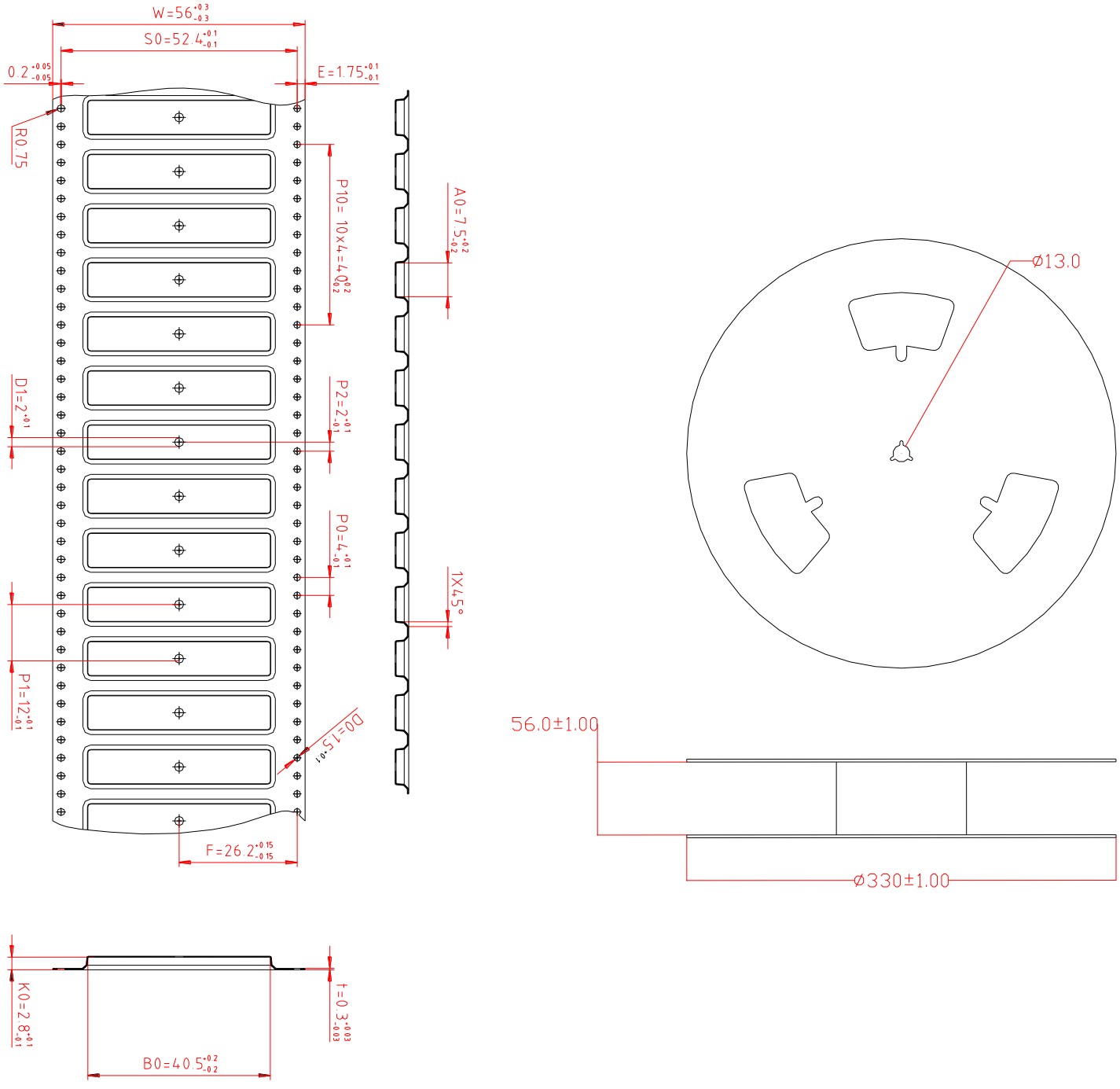
Side View

7. Antenna drawings



Fiberglass antenna body (mm)

8. Tape and Reel Information



Tape and Reel Specifications

9. Packaging

PACKAGING SPECIFICATION	
Antenna	2JE06a
REEL	
Max Quantity per Reel	1500
CARTON	
Reels per Carton	2
Max Quantity per Carton	3000
Carton Dimensions (cm)	36.5 x 36.5 x 16
Carton Weight (Kg)	6
PALLET	
Max carton per Pallet	42
Cartons per Layer	6
Number of Layers	7
Max Quantity per Carton	126 000
Total Cartons Dimensions (cm)	109.5 x 73 x 112
Total Cartons Weight (Kg)	252

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