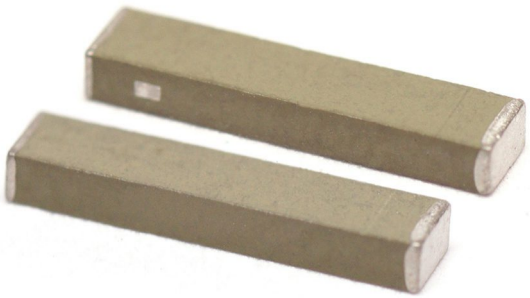
2JE08a

GNSS Ceramic Surface Mount

Key Features

GPS/GLONASS/BeiDou/QZSS/Galileo
- 1561-1606 MHz
Surface Mount
Easy to Integrate
Compact size
Ceramic Material
Ground Plane Dependent
Dimensions 8 x 1.7 x 1 mm



1. Antenna and electrical specifications

Parameters	GNSS Ceramic Thru-Hole Mount Antenna		
Standards	BeiDou	GPS/QZSS/Galileo	GLONASS
Bands (MHz)	1561	1575	1602
Frequency (MHz)	1561.098	1575.42	1598-1606
Return Loss (dB)	~-12.2	~-17.1	~-12.2
VSWR	~1.7:1	~1.3:1	~1.7:1
Efficiency (%)	~54.4	~55.5	~53.1
Peak Gain (dBi)	~3.1	~3.1	~3.0
Average Gain (dB)	~-2.6	~-2.6	~-2.8
Impendance (Ohms)		50	
Radiation Pattern		Hemispherical	
Polarization		Linear	

Antenna Measurement Conditions:

Free Space

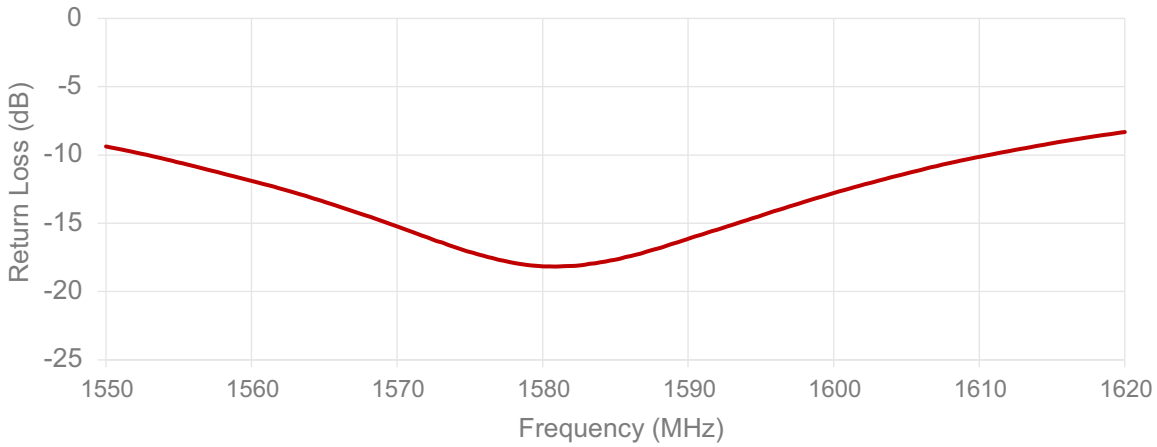
Mounted on Ground Plane of 50 x 90 mm

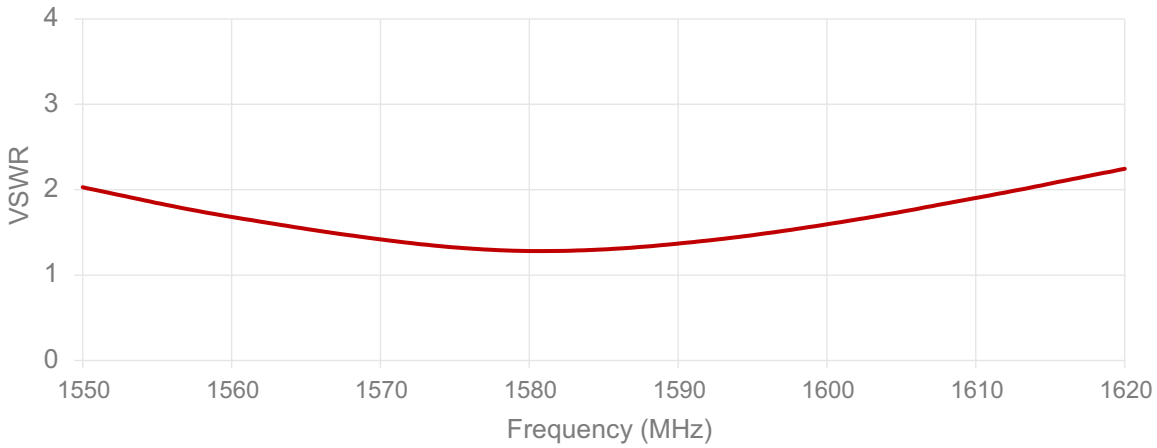
Measured in Certified CTIA 3D Anechoic Chamber

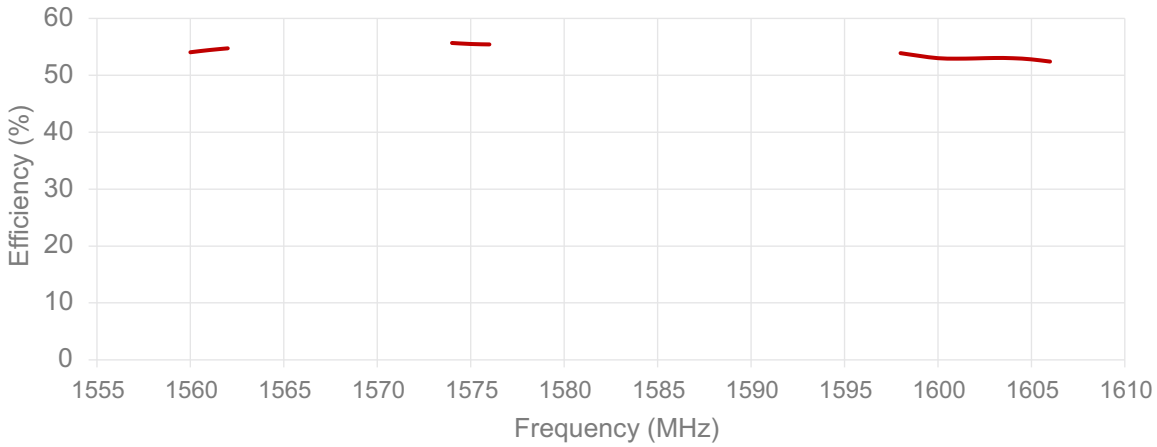
2. Mechanical and environmental specifications

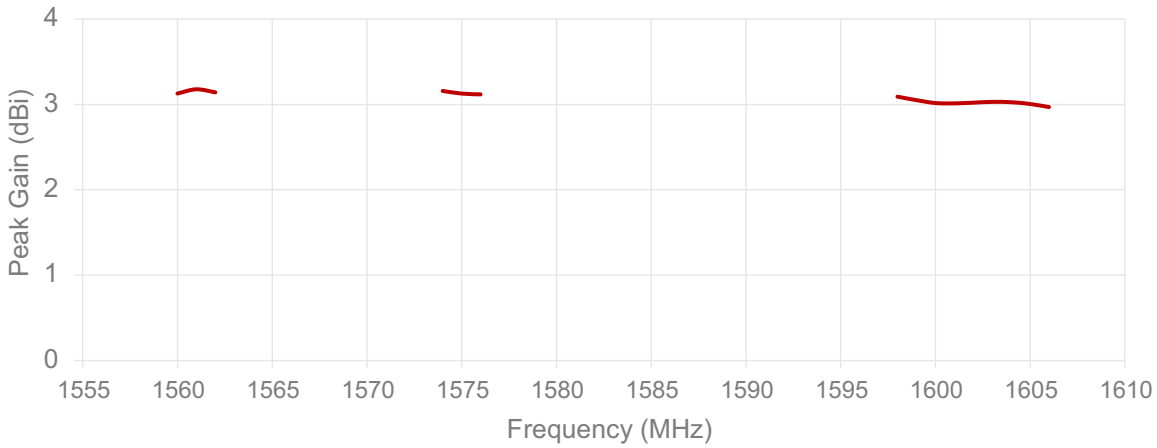
Specifications	2JE08a
Mounting Type	Surface Mount
Dimensions (mm)	8 x 1.7 x 1
Operating Temperature (C)	-40 to +85
Storage Temperature (C)	-40 to +85
Substance Compliance	RoHS
Typical Shear Force Test	1KgF according to IEC62137-1-2:2007

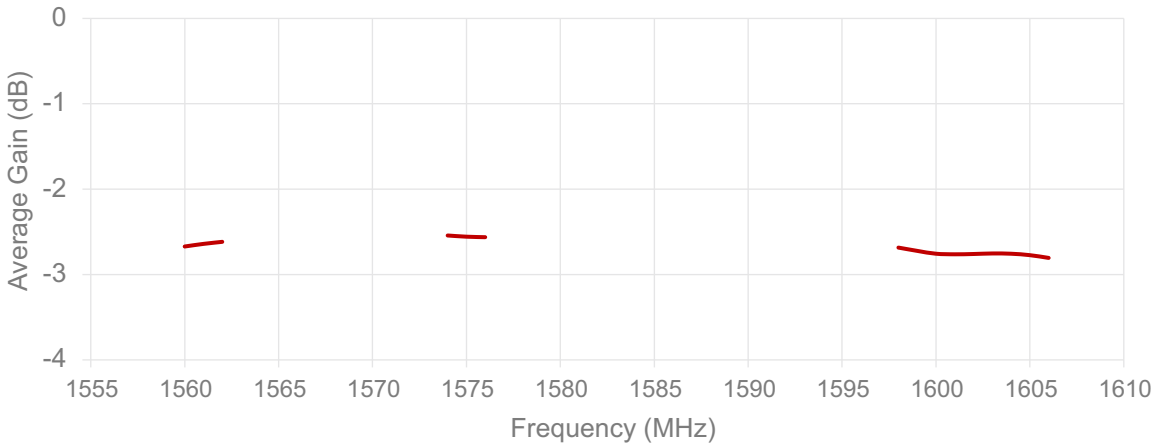
3. Antenna parameters

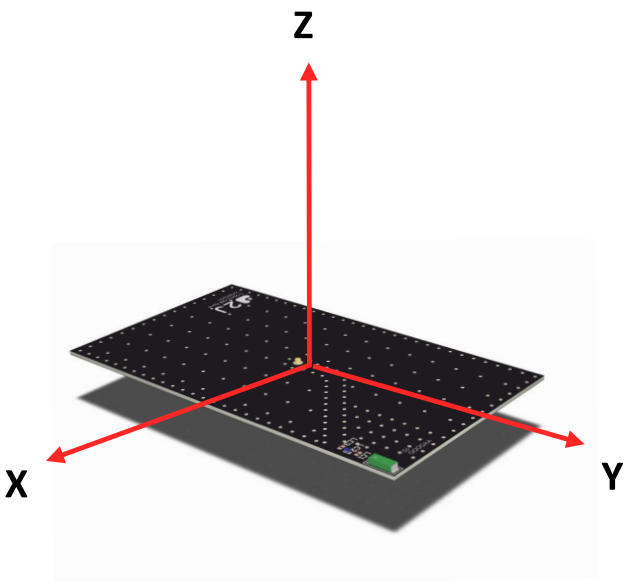




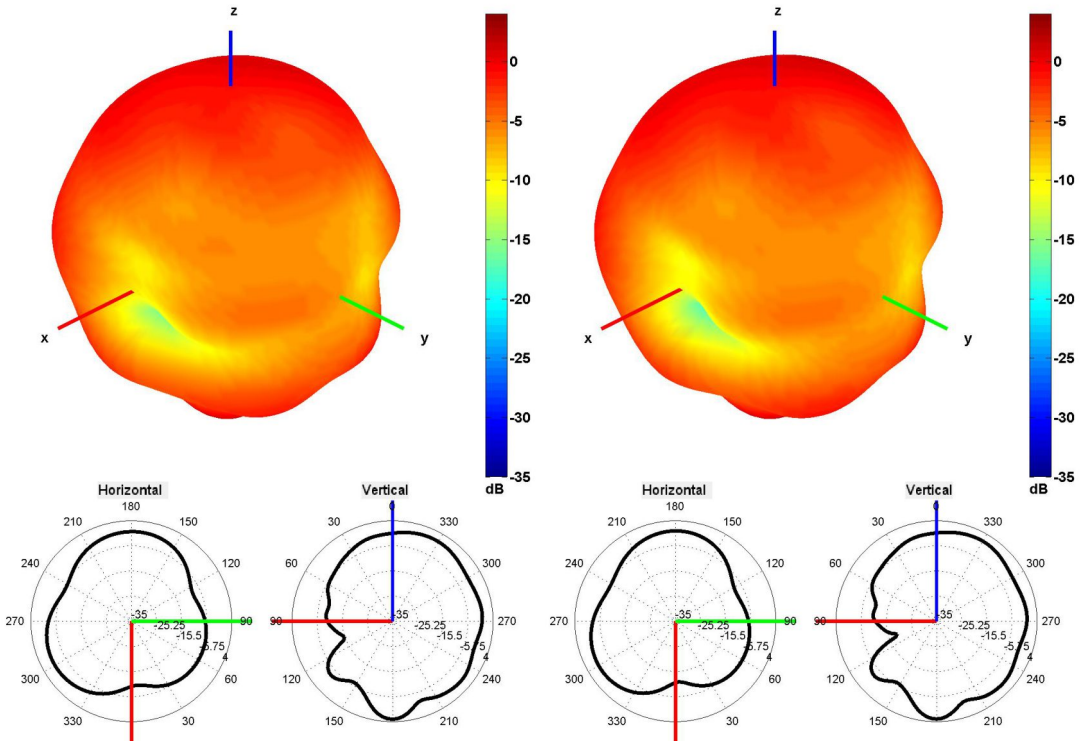

60
50
40
30
20
10
0
Efficiency (%)
1555
1560
1565
1570
1575
1580
1585
1590
1595
1600
1605
1610
Frequency (MHz)


4
3
2
1
0
Peak Gain (dBi)
1555
1560
1565
1570
1575
1580
1585
1590
1595
1600
1605
1610
Frequency (MHz)

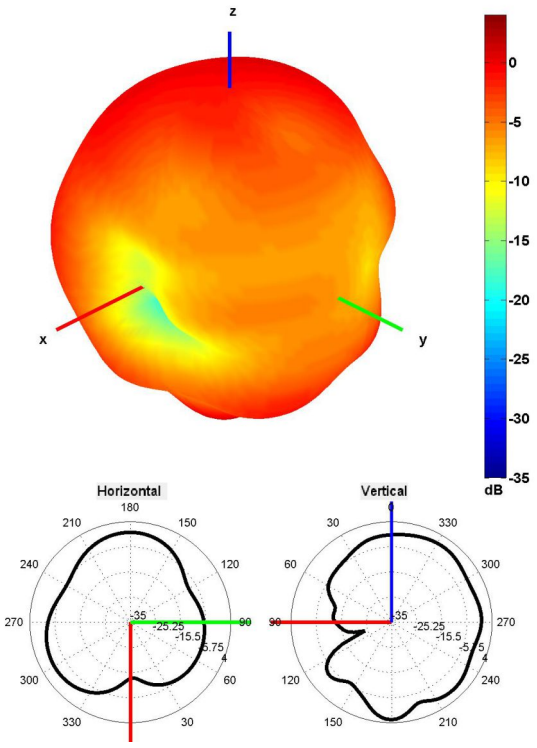




Radiation pattern reference

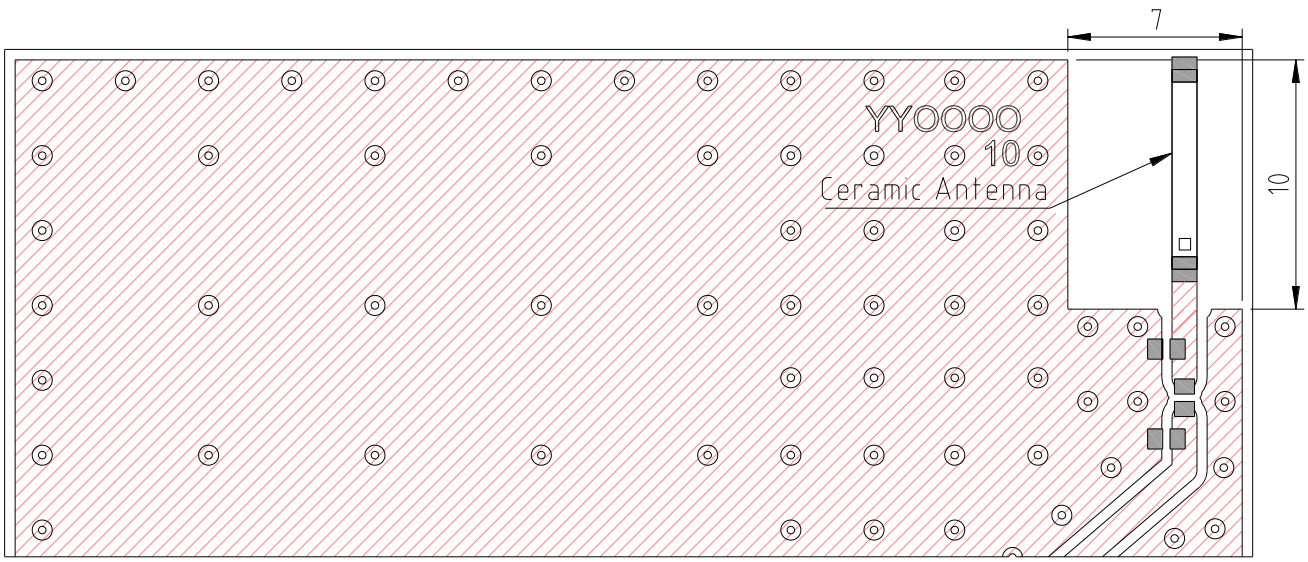


1561 AND 1575 MHz RADIATION PATTERN



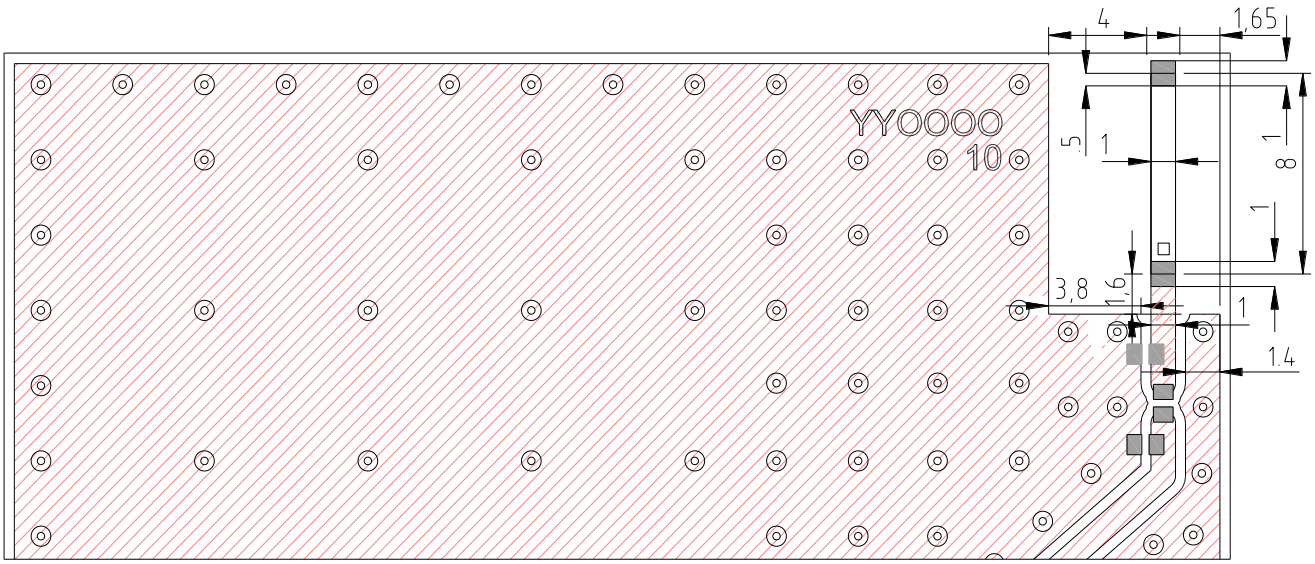
1602 MHz RADIATION PATTERN

4. PCB Layout



Minimum area required for antenna integration (7.0mm × 10.0mm)

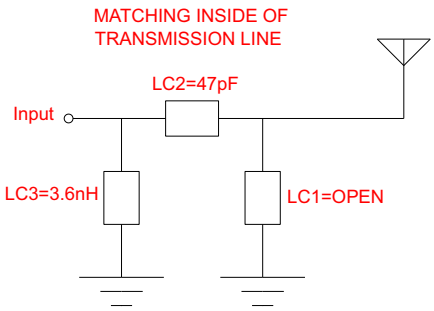
Solder Region
Copper Region
Copper-Free Region



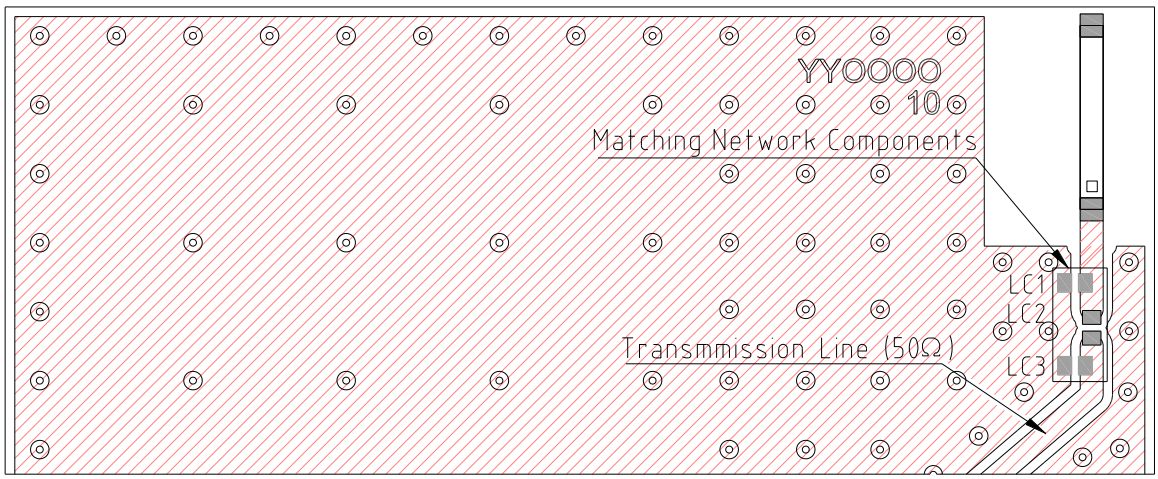
Layout dimensions for antenna integration (mm)

Solder Region
Copper Region
Copper-Free Region

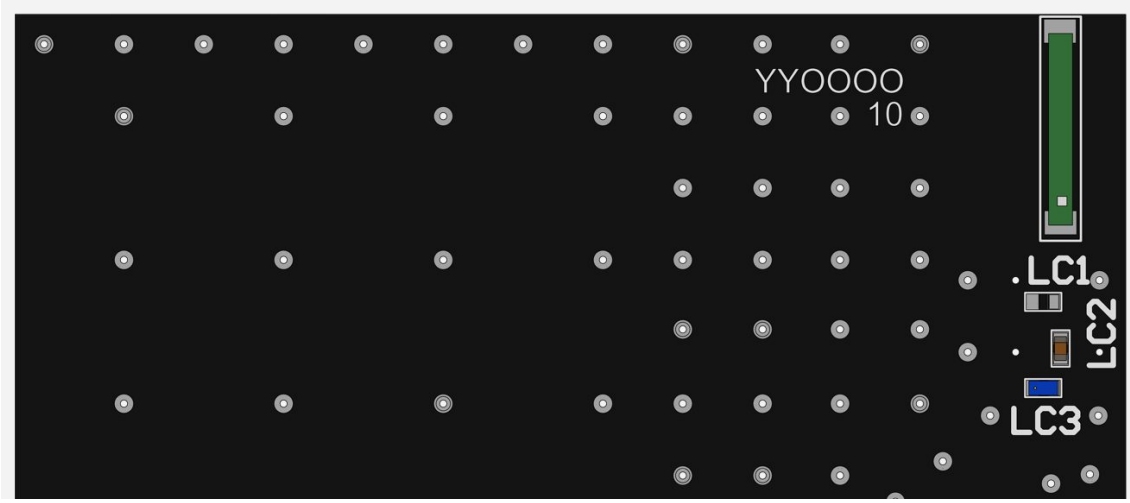
5. Matching Components



Matching Network Schematic

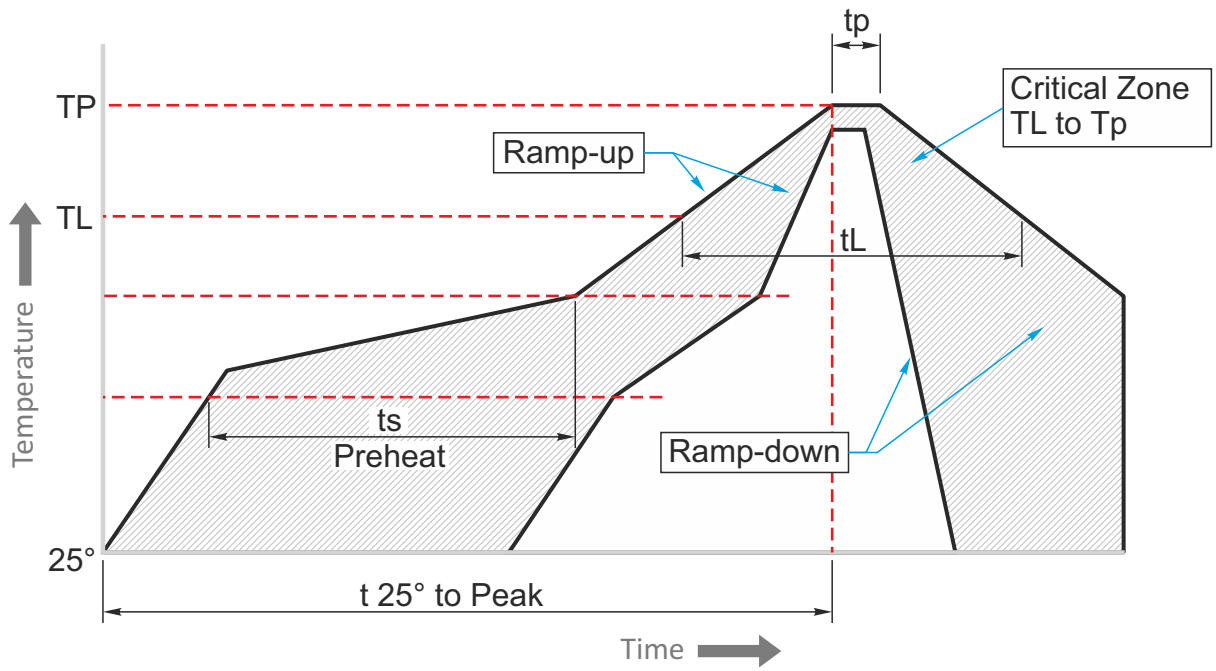


Matching network drawing (LC1=OPEN, LC2=47pF, LC3=3.6nH)



3D View of matching components and recommended values (LC1=OPEN, LC2=47pF, LC3=3.6nH)

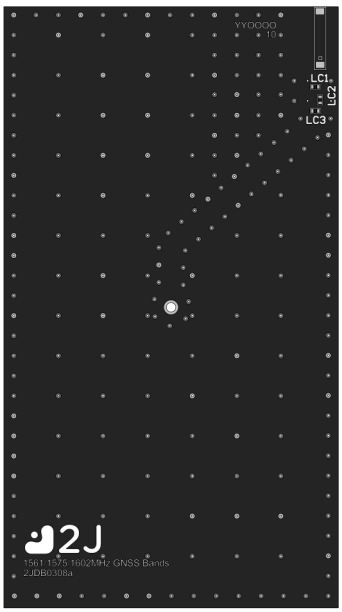
REFLOW TEMPERATURE PROFILE



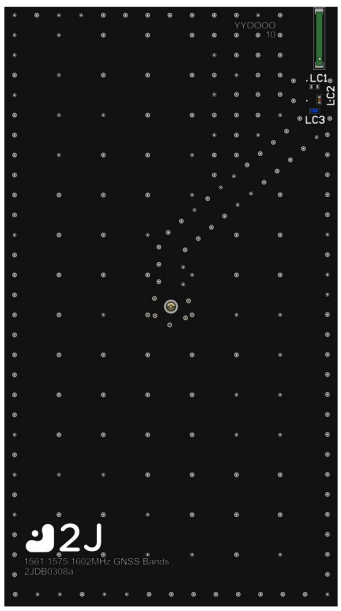
Phase	Profile features	Sn-Pb Assembly	Pb-Free Assembly (SnAgCu)
RAMP-UP	Avg. Ramp-up Rate (Ts_{max} to TP)	3°C / second (max)	3°C / second (max)
PREHEAT	-Temperature Min Rate (Ts_{min})	100°C	150°C
	-Temperature Max Rate (Ts_{min})	150°C	200°C
	-Time (ts_{min} to ts_{max})	60-120 seconds	60-120 seconds
REFLOW	-Temperature (T_L)	183°C	217°C
	-Total Time above T_L (t_L)	60-150 seconds	60-150 seconds
PEAK	-Temperature (T_p)	235°C	260°C
	-Time (t_p)	10-30 seconds	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

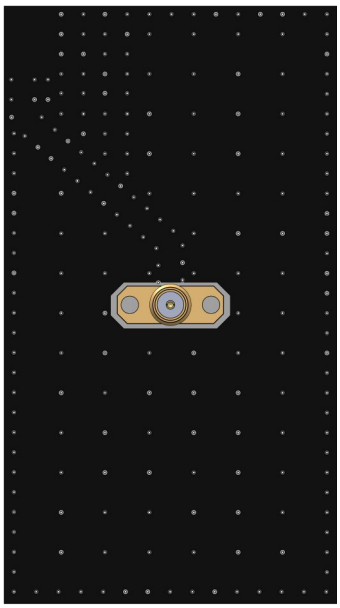
90mm x 50mm	90mm x 50mm	90mm x 50mm	90mm x 11.9mm (PCB: 0.8mm, Antenna: 1.6mm, Connector: 9.5mm)



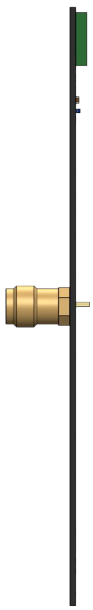
Front View without Antenna



Front View with Antenna

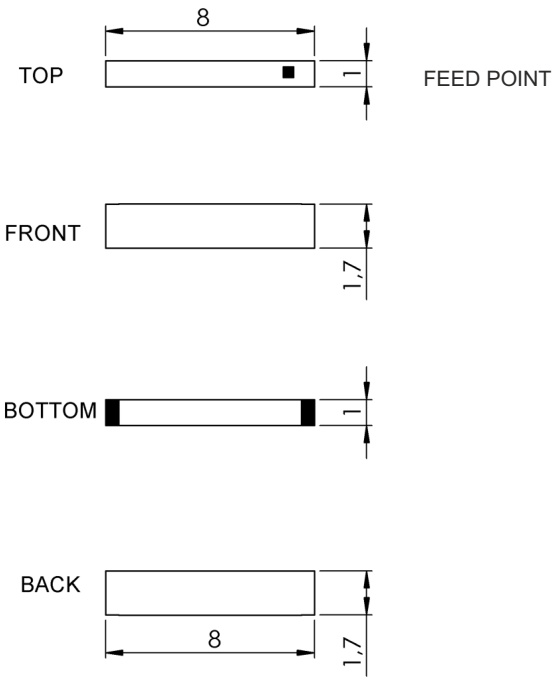


Back View



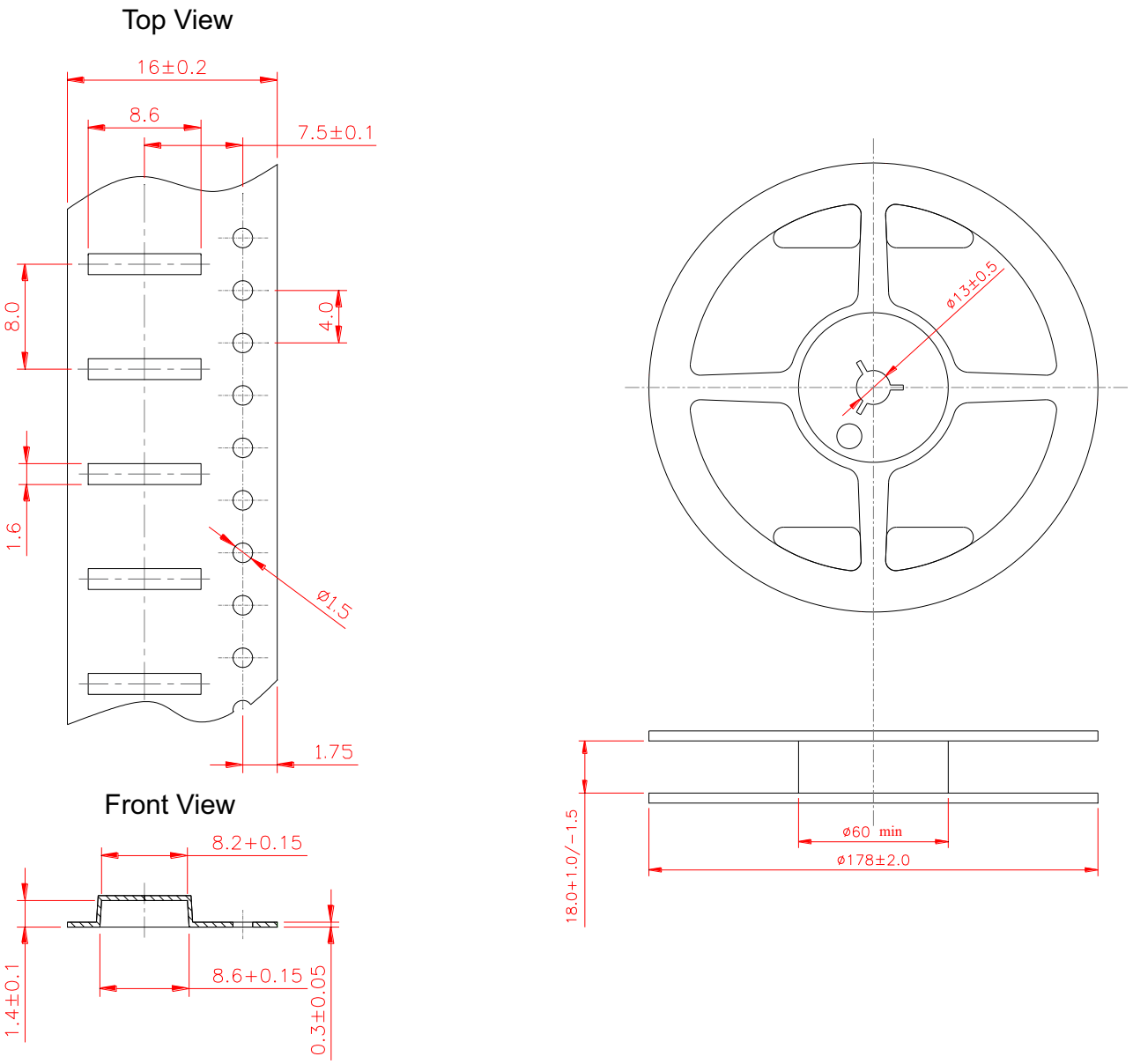
Side View

7. Antenna drawings



ceramic antenna body (mm)

8. Tape and Reel Information



Tape and Reel Specifications

9. Packaging

PACKAGING SPECIFICATION	
Antenna	2JE08a
REEL	
Max Quantity per Reel	6000
REEL BOX	
Reels per Box	1
Reel Box Dimensions (cm)	18.5 x 18.5 x 3
Reel Box Weight (Kg)	0.27
CARTON	
Reels per Carton	10
Max Quantity per Carton	60,000
Reel Carton Dimensions (cm)	33 x 21 x 21
Reel Carton Weight (Kg)	3.1

Storage Conditions:

- Storage Temperature Range: -40 ℃ to +85 ℃
- Oxidizable material. Store for 12 months in vacuum sealed bag.
- Repack material after use by re-sealing package.

5. Antenna Images