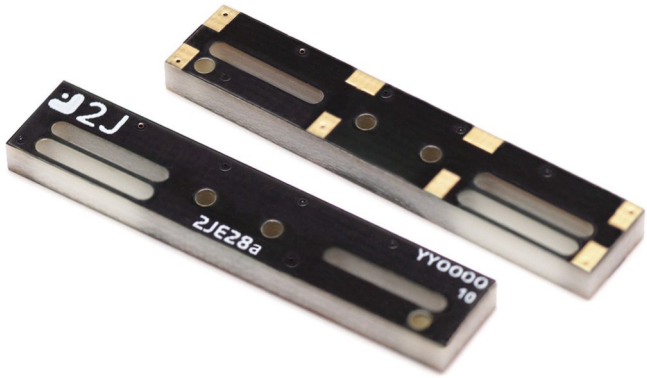
2JE28a

CELLULAR / LTE Surface Mount

Key Features

CELLULAR / LTE
- 698-960 MHz
- 1710-2170 MHz
- 2500-2700 MHz

Surface Mount
Right Feed
High Performance
Fiberglass Material
Ground Plane Dependent
Dimensions 40 × 8 × 3 mm



1. Antenna and electrical specifications

Parameters	CELLULAR / LTE Antenna		
Standards	2G,3G and 4G		
Band (MHz)	700/850/900	1700/1800/1900/2100	2600
Frequency (MHz)	698-960	1710-2170	2500-2700
Return Loss (dB)	~-8.3	~-11.1	~-14.5
VSWR	~2.5:1	~1.8:1	~1.5:1
Efficiency (%)	~58.2	~70.1	~65.7
Peak Gain (dBi)	~2.6	~3.6	~3.8
Average Gain (dB)	~-2.6	~-1.8	~-2.2
Impendance (Ohm)	50		
Polarisation	Linear		
Radiation Pattern	Omni-Directional		
Max. Input Power (W)	25		

Antenna Measurement Conditions:

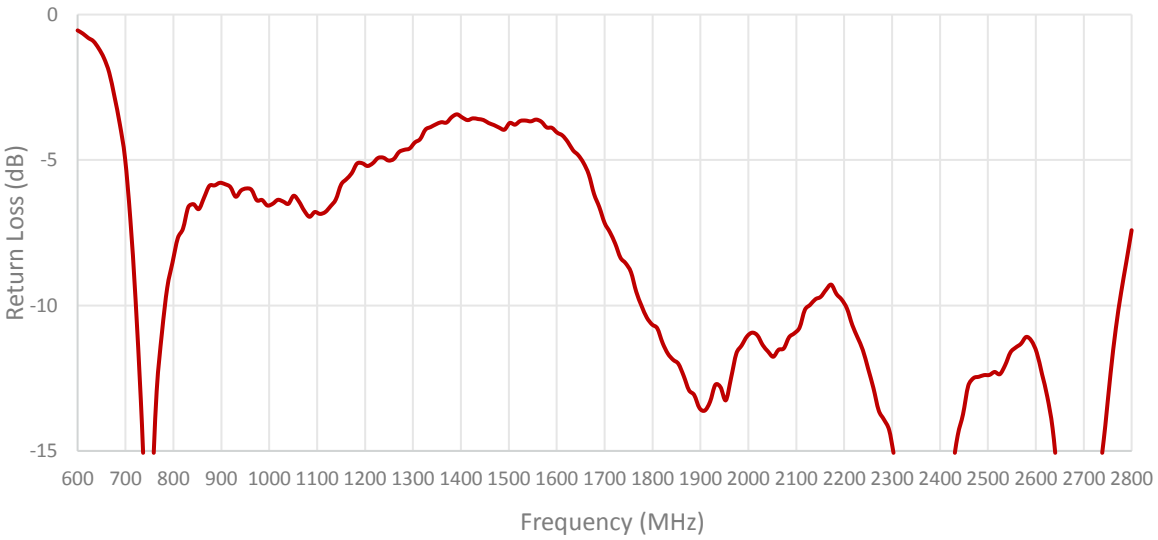
Mounted on ground plane of 110 x 40 mm

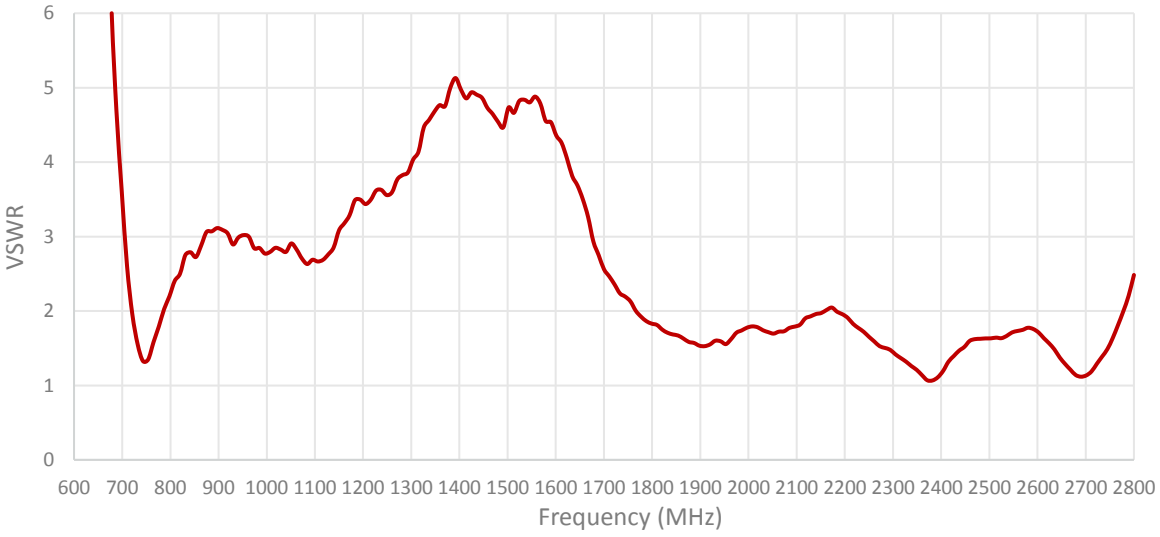
Measured in Certified CTIA 3D Anechoic Chamber

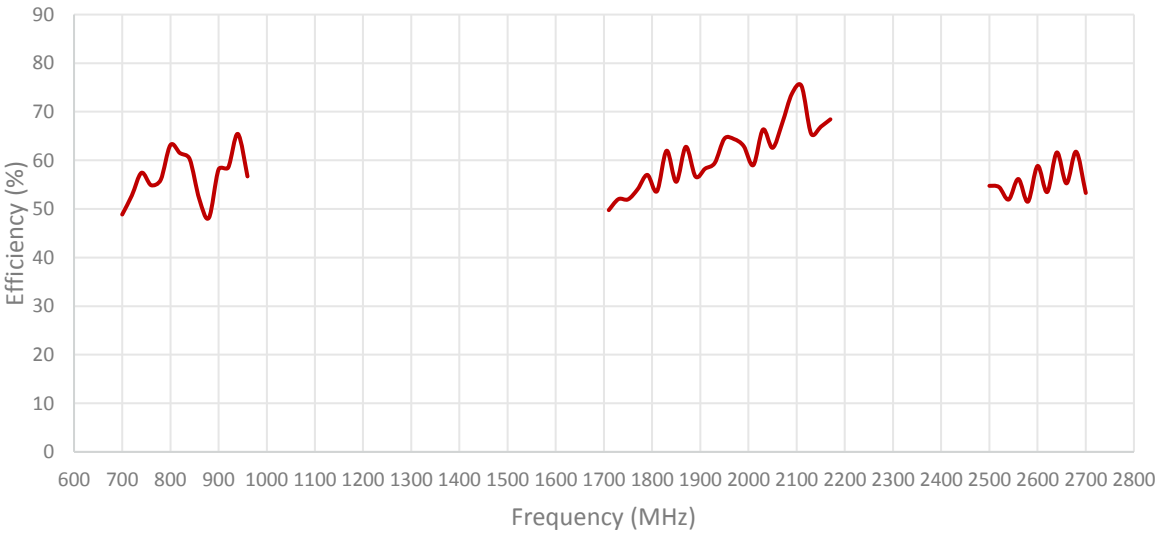
2. Mechanical and environmental specifications

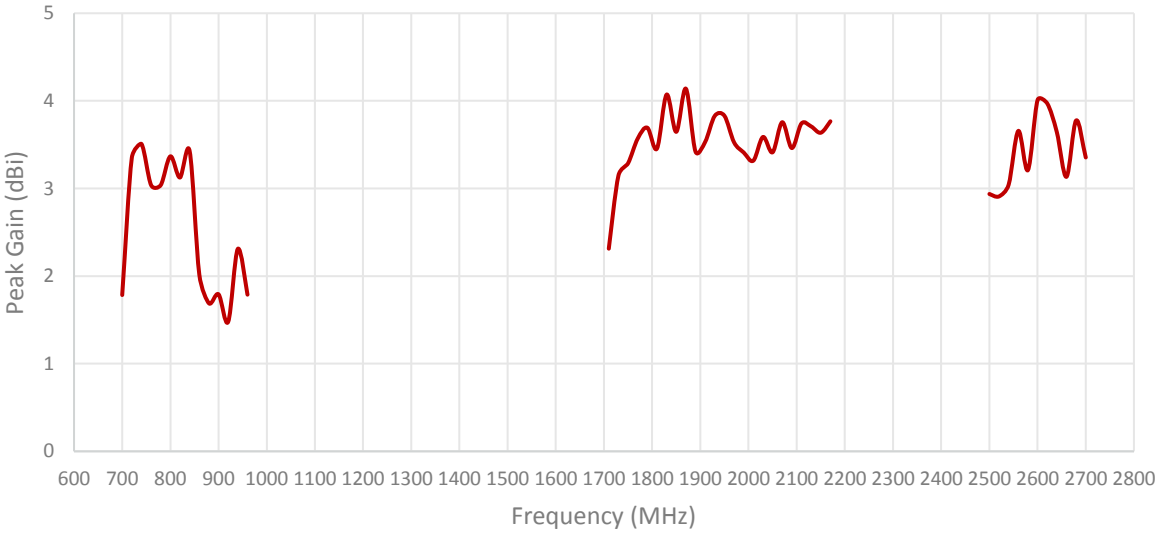
Specifications	2JE28a
Mounting Type	Surface Mount
Dimensions (mm)	40 × 8 × 3
Material	Fiberglass
Operating Temperature (C)	-40 to +105
Storage Temperature (C)	-40 to +85
Storage Relative Humidity (%)	Up to 93 at 30 C
Substance Compliance	RoHS
Typical Shear Force Test	50 kgf according to IEC62137-1-2:2007

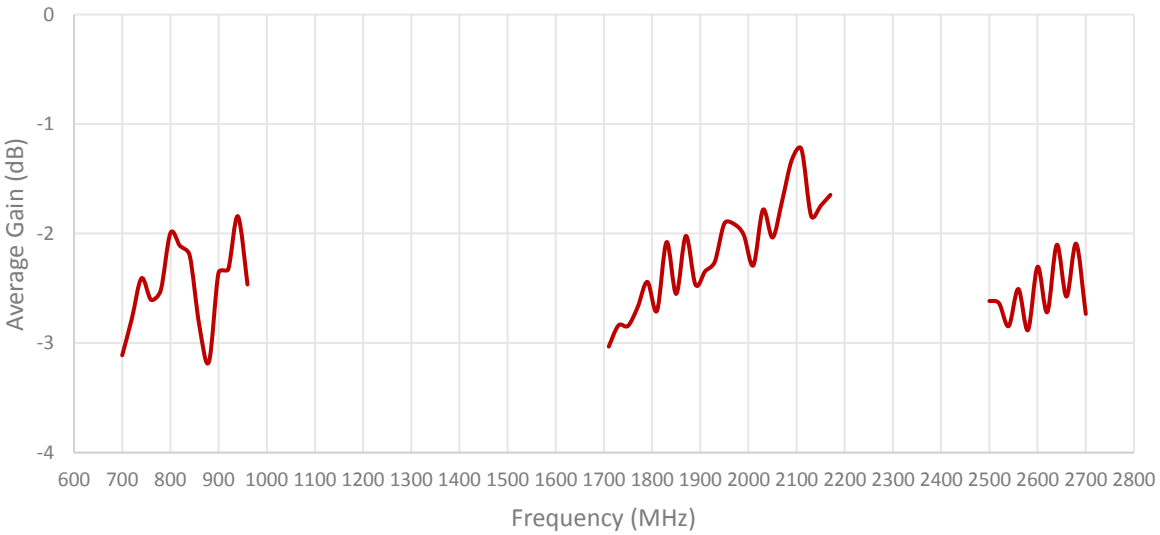
3. Antenna parameters

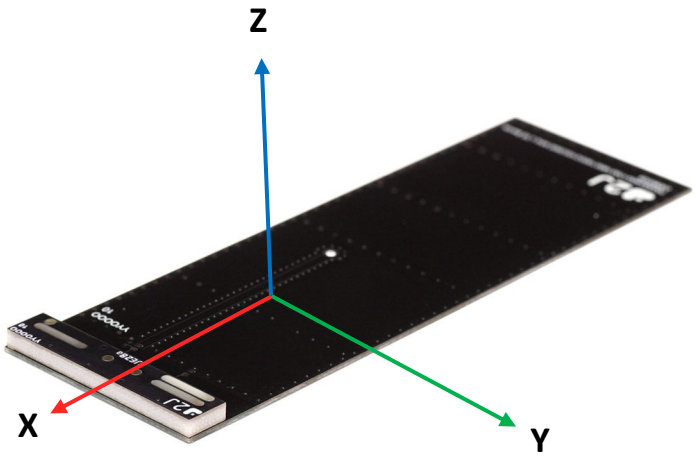




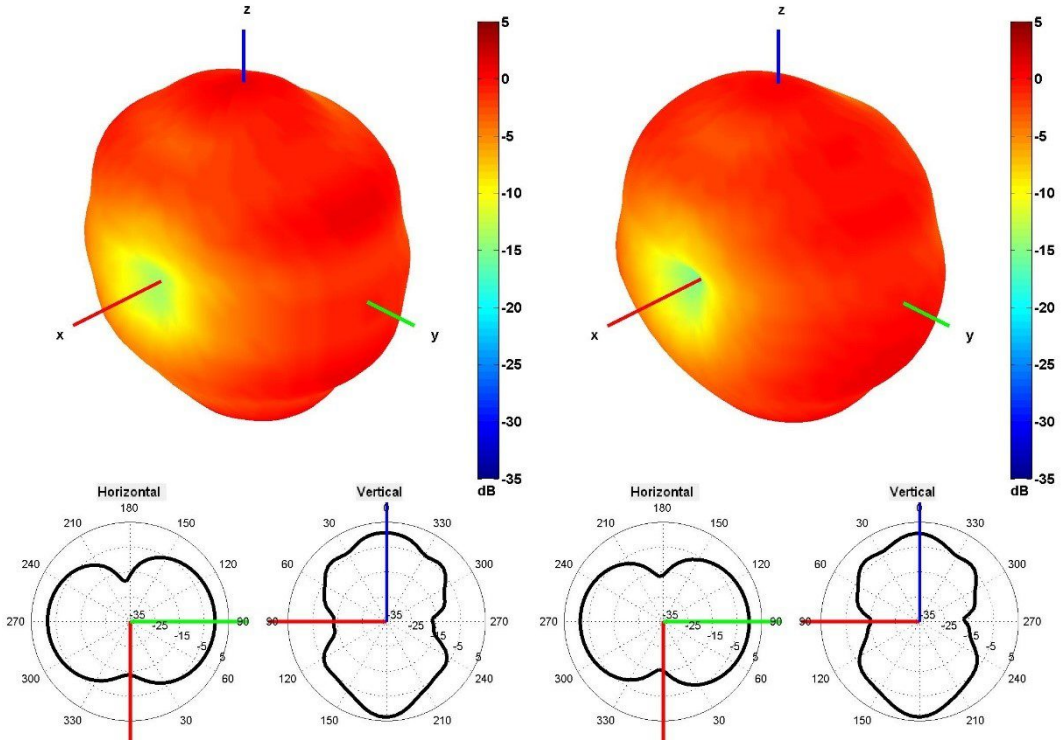

Efficiency (%)
90
80
70
60
50
40
30
20
10
0
600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600 2700 2800
Frequency (MHz)


Peak Gain (dBi)
5
4
3
2
1
0
600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600 2700 2800
Frequency (MHz)

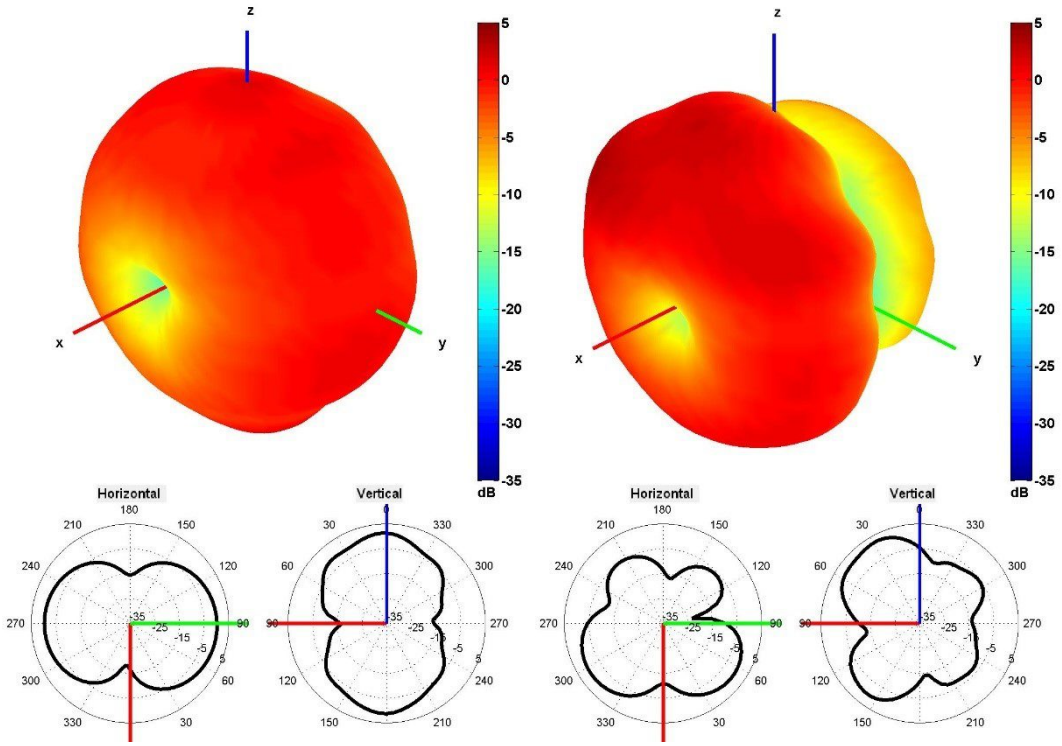




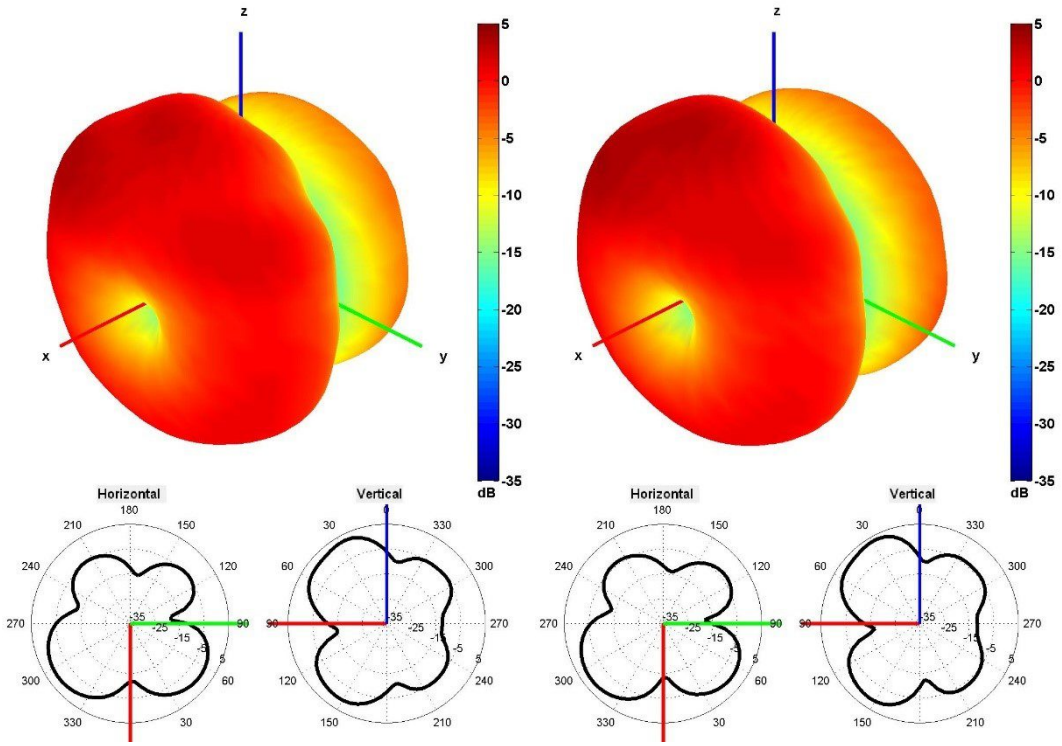
Radiation pattern reference



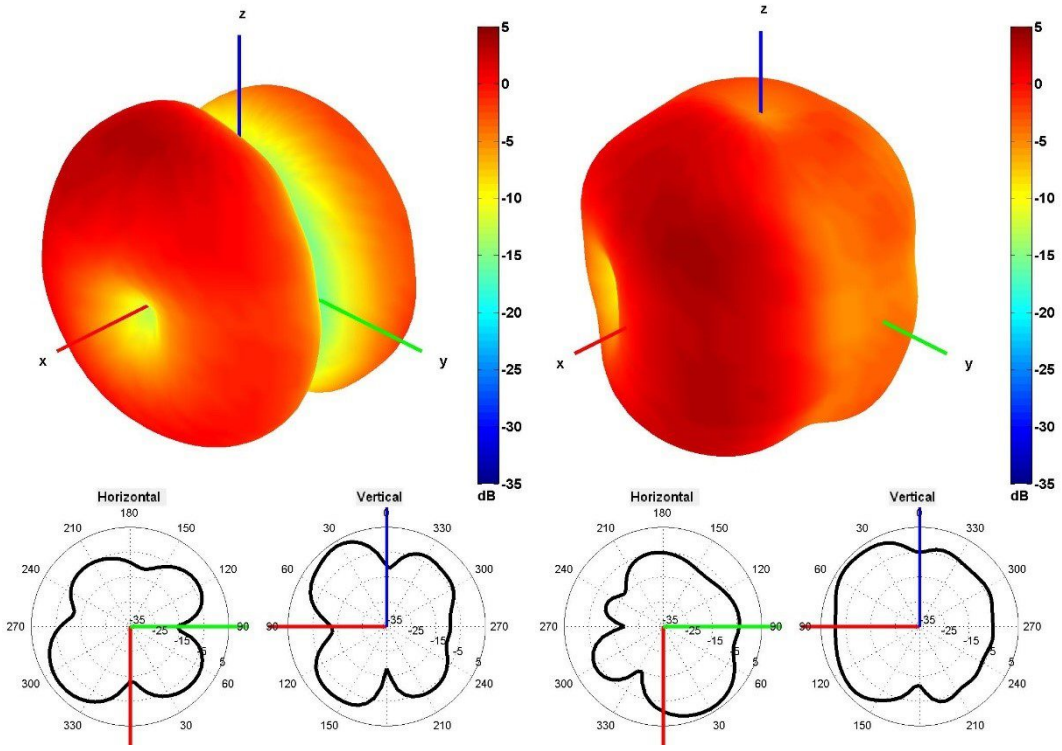
740 and 840 MHz Radiation pattern



940 and 1750 MHz Radiation pattern

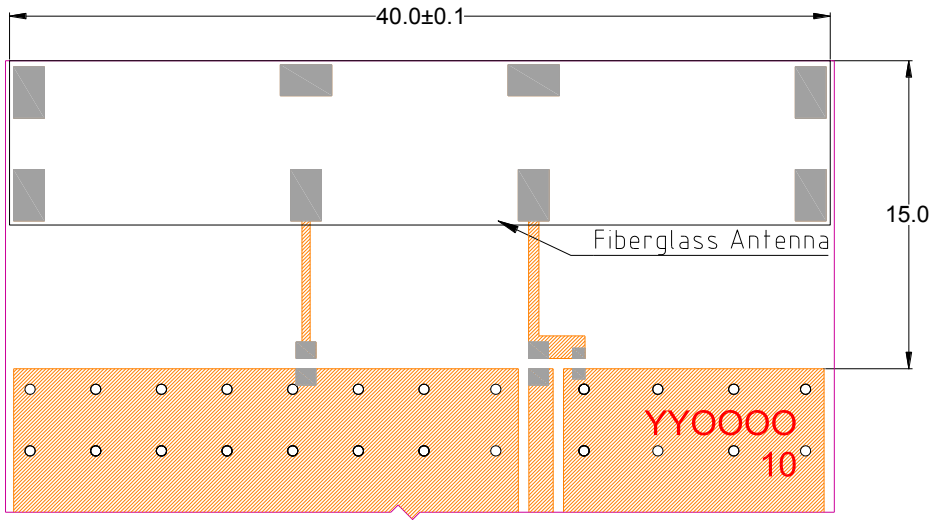


1850 and 1950 MHz Radiation pattern



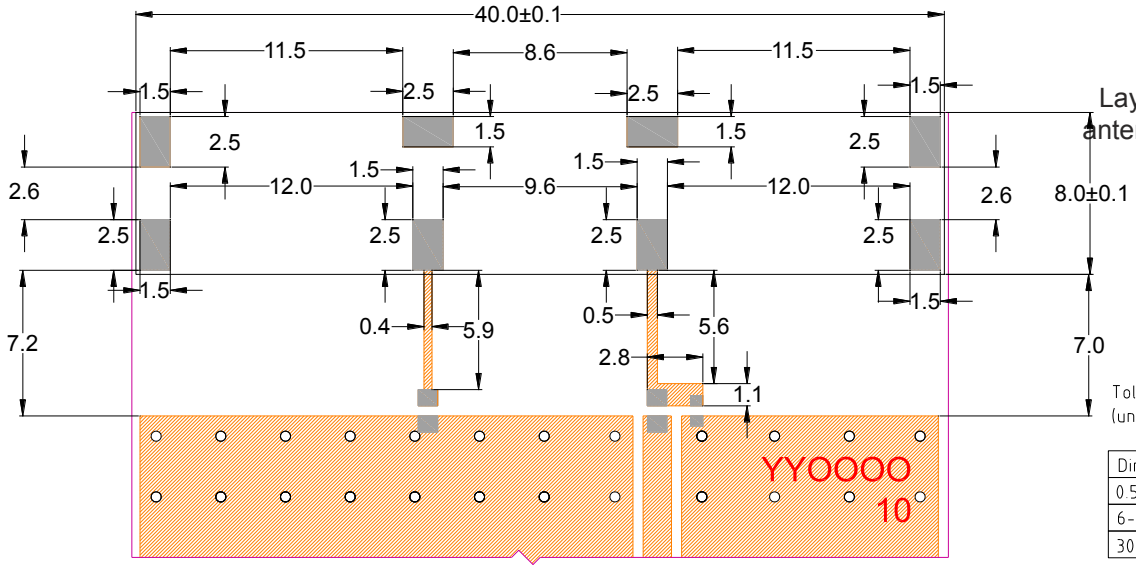
2100 and 2600 MHz Radiation pattern

4. PCB Layout



Minimum area required for antenna integration (40mm × 15mm)

Solder Region
Copper Region
Copper-Free Region



Layout dimensions for antenna integration (mm)

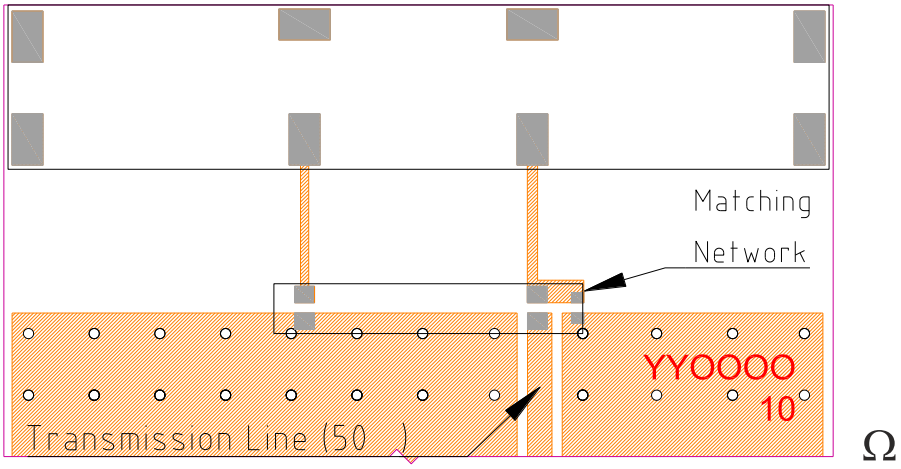
Tolerance of Linear Dimensions (unless otherwise indicated):

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

Layout dimensions for antenna integration (mm)

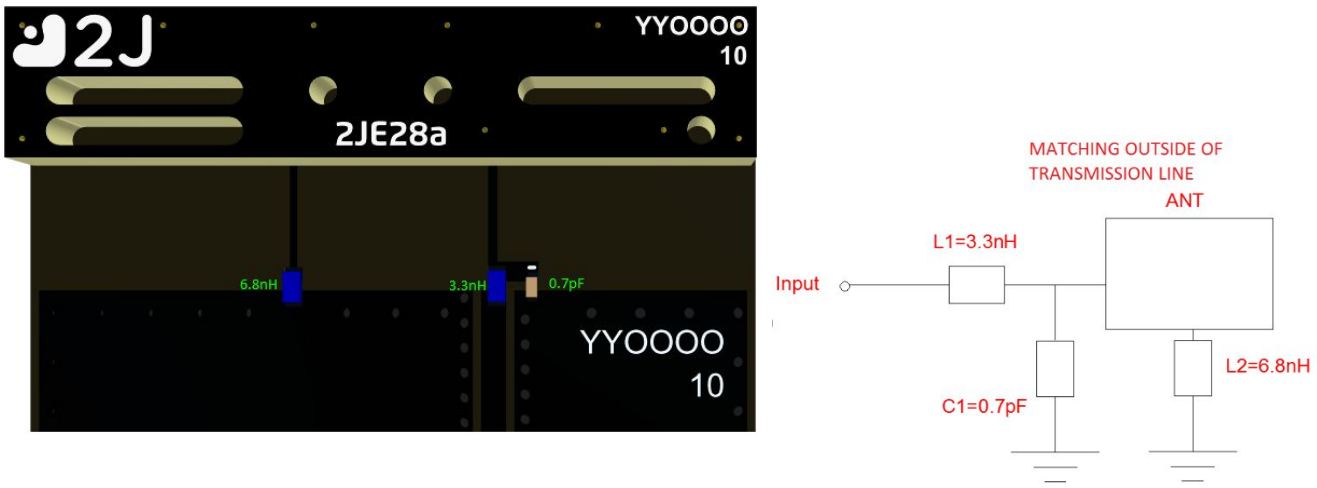
Solder Region
Copper Region
Copper-Free Region

5. Matching Network



Solder Region
Copper Region
Copper-Free Region

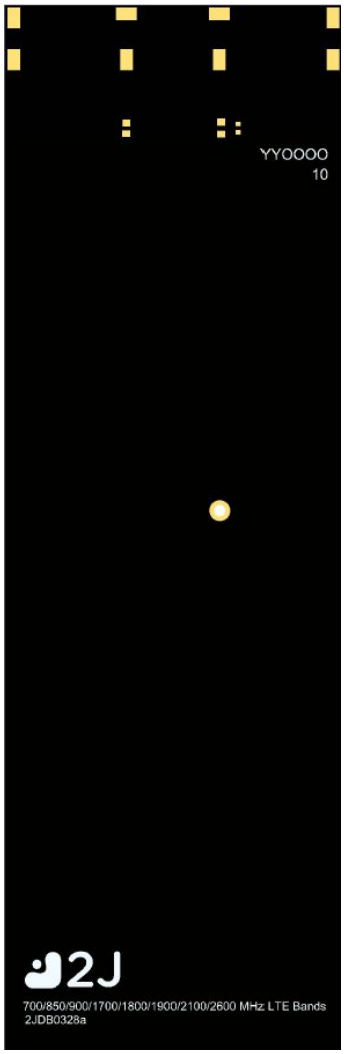
Matching network drawing



3D View of matching components and recommended values

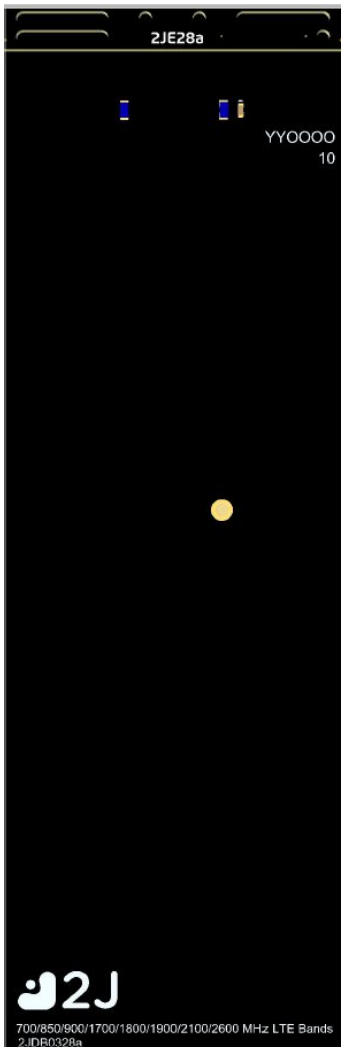
6. Evaluation Board

125mm x 40.4mm



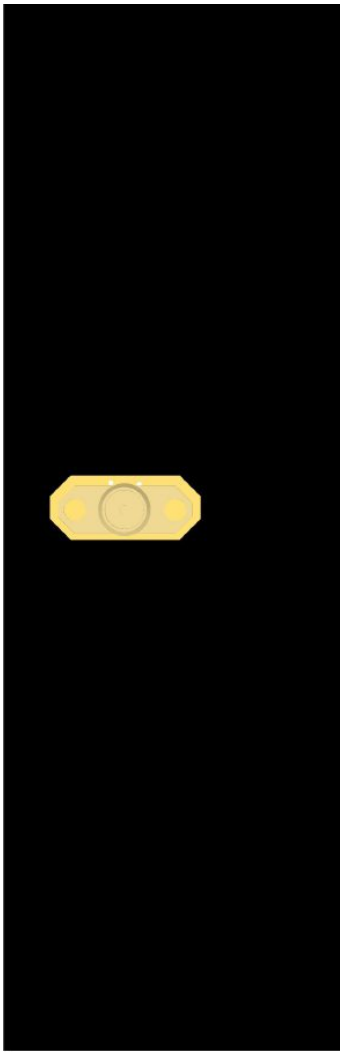
Front View without Antenna

125mm x 40.4mm



Front View with Antenna

125mm x 40.4mm



Back View

125mm x 40.4mm
(PCB: 1.0mm, Antenna: 3mm,
Connector: 9.5mm)

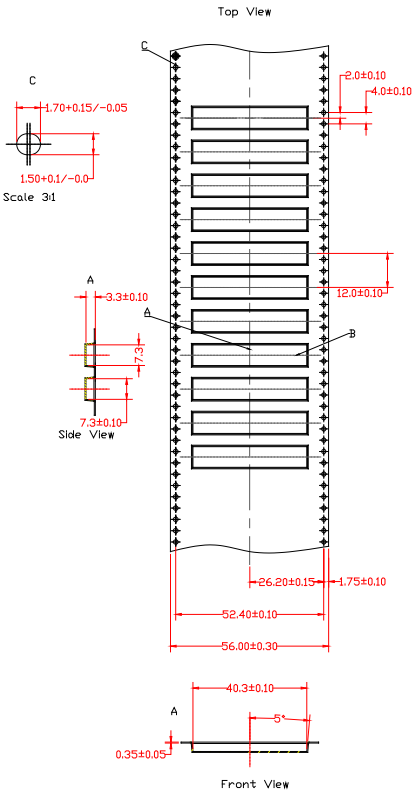


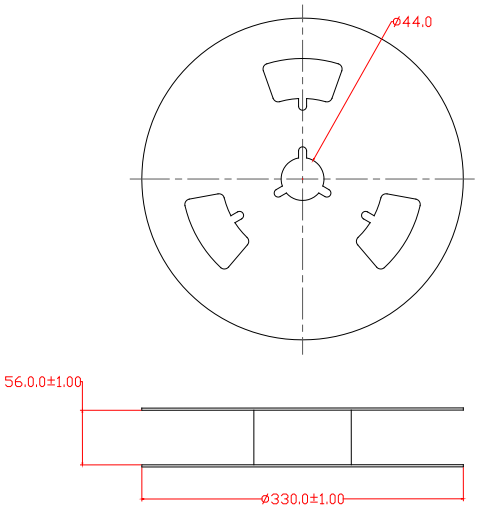
Side View

7. Packaging

PACKAGING SPECIFICATION	
Antenna	2JE28a
REEL	
Max Quantity per Reel	1000
REEL CARTON	
Reels per Carton	2
Max Quantity per Carton	2000
Reel Carton Dimensions (cm)	36.5 x 36.5 x 16
Reel Carton Weight (Kg)	5,6
PALLET	
Max Cartons per Pallet	42
Cartons per Layer	6
Number of Layers	7
Max Quantities per Pallet	84,000
Total Cartons Dimensions (cm)	109.5 x 73 x 112
Total Cartons Weight (Kg)	235,2
Pallet size and weight not included above	
Typical Pallet Size (cm)	120 x 100 x 14.4
Typical Pallet Weight (Kg)	5-25

8. Tape and Reel Information





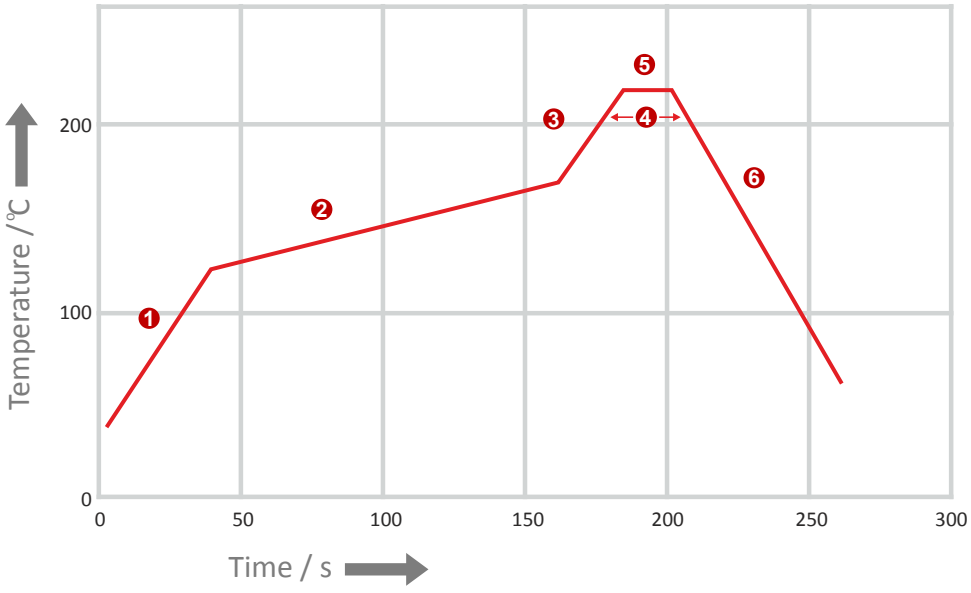
Tape and Reel Specifications

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

Not to scale. For reference only.

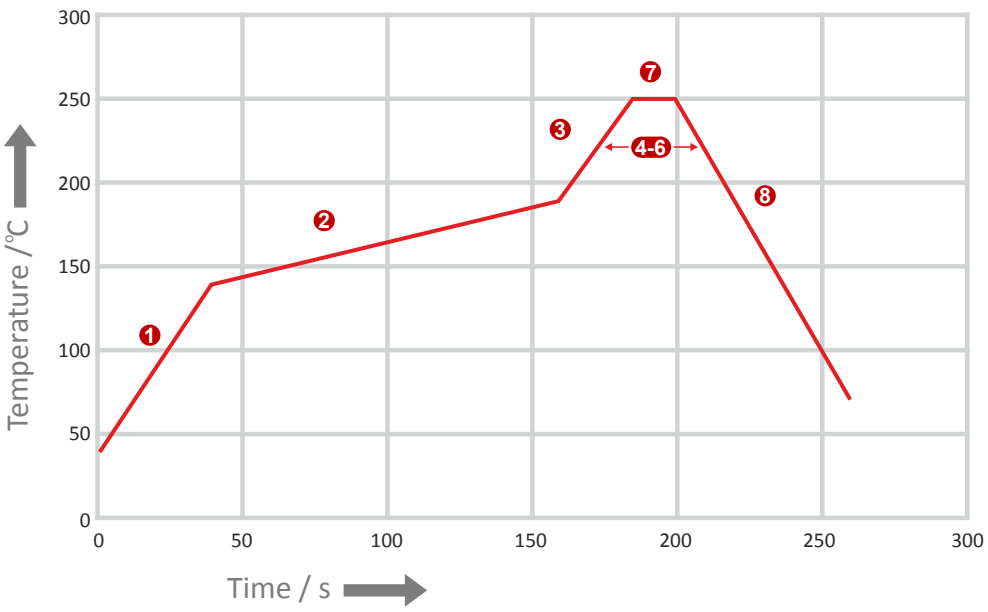


REFLOW TEMPERATURE PROFILE

Maximum Recommended Reflow Profile

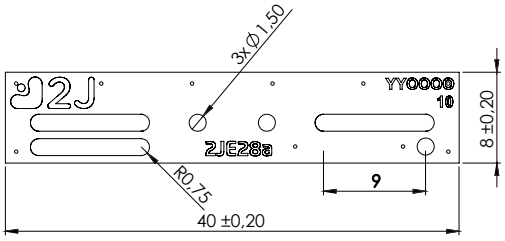
	Method of heat transfer	Controlled hot air convection
1	Average temperature gradient in preheating	2.5 °C/s
2	Soak time	2-3 minutes
3	Max temperature gradient in reflow	3 °C/s
4	Time above 217 °C	Max 60 sec
5	Time above 230 °C	Max 50 sec
6	Time above 250 °C	Max 10 sec
7	Peak temperature in reflow	260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

Not to scale. For reference only.

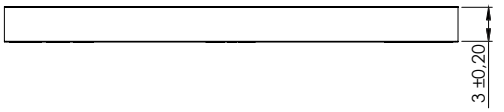


9. Antenna drawings

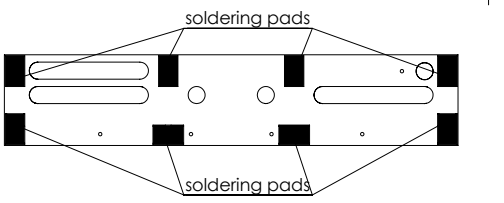
Top View



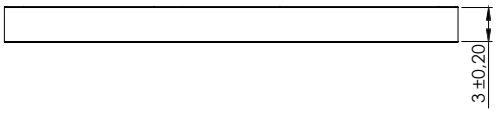
Front View



Bottom View



Back View



Dimensions for fiberglass antenna 40 × 8 × 3 mm +/-0.2mm

10. Antenna Images

