SMD Antenna Data Sheet

CrossAirTM SMD Antenna
Series RoHS Compliant

PN: CA-C03

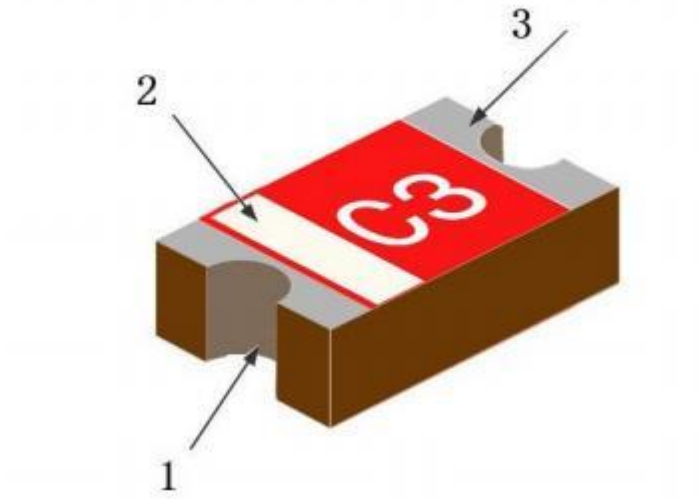
Features

1. Small size SMD patch antenna with the size of only 5.5 X 2.0 X 1.0 mm3.
2. Low energy loss, high antenna efficiency.
3. High stability under temperature and humidity changes.

Applications

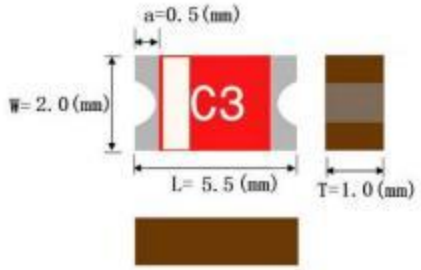
1. 2.4GHz ISM band antenna applications
2. Bluetooth, ZigBee, wireless applications, smart home applications, etc.
3. WIFI (2.4G only)

structure



1. Antenna feed end
2. Feed identification mark
3. Antenna welding fixed end

size

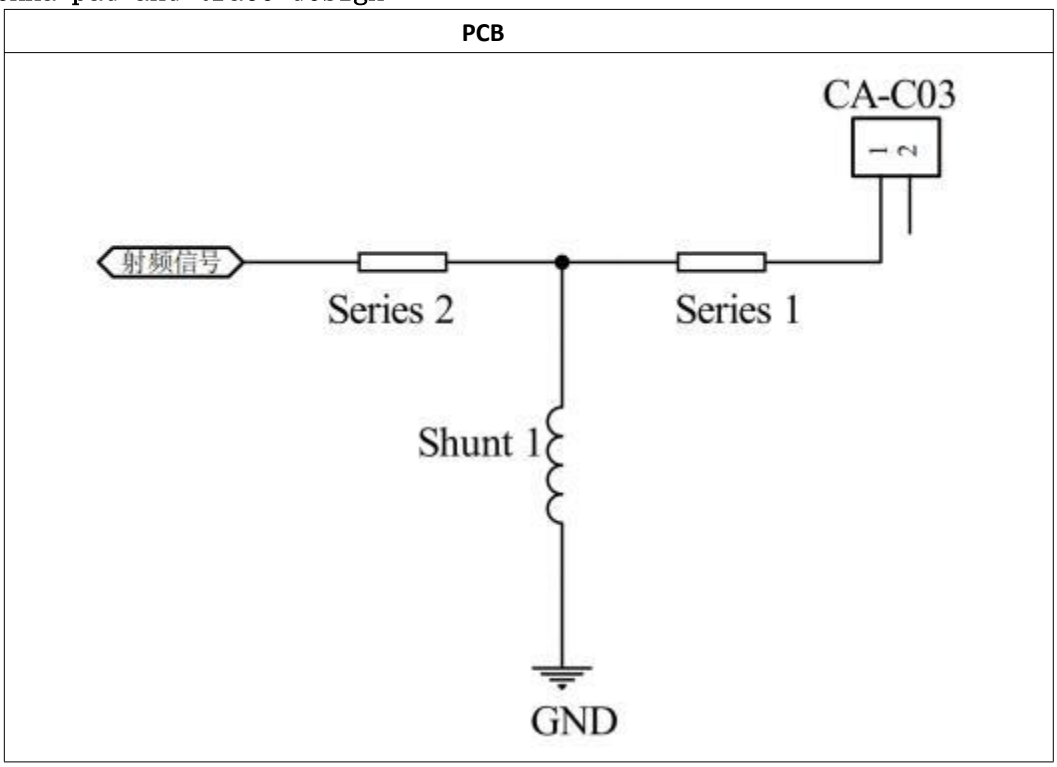
Three views	symbol	Dimensions (mm)
	L	5.5±0.2
	w	2.0±0.1
	T	1.0±0.1
	a	0.5±0.1

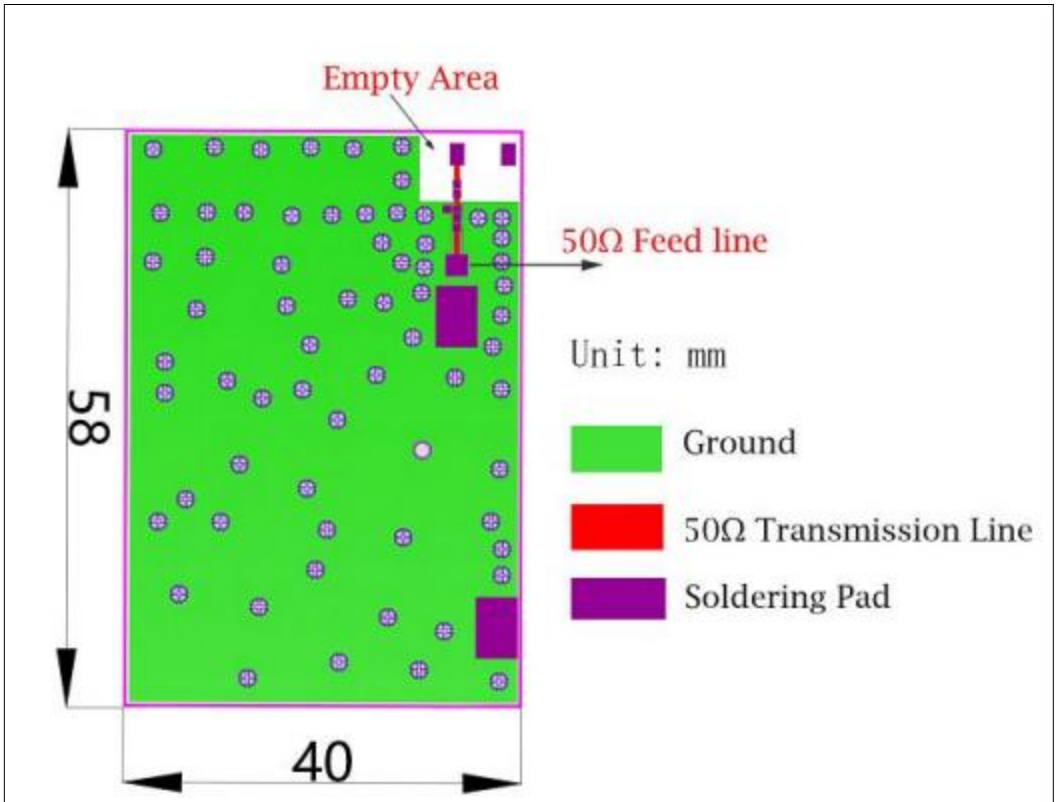
Electrical Characteristics

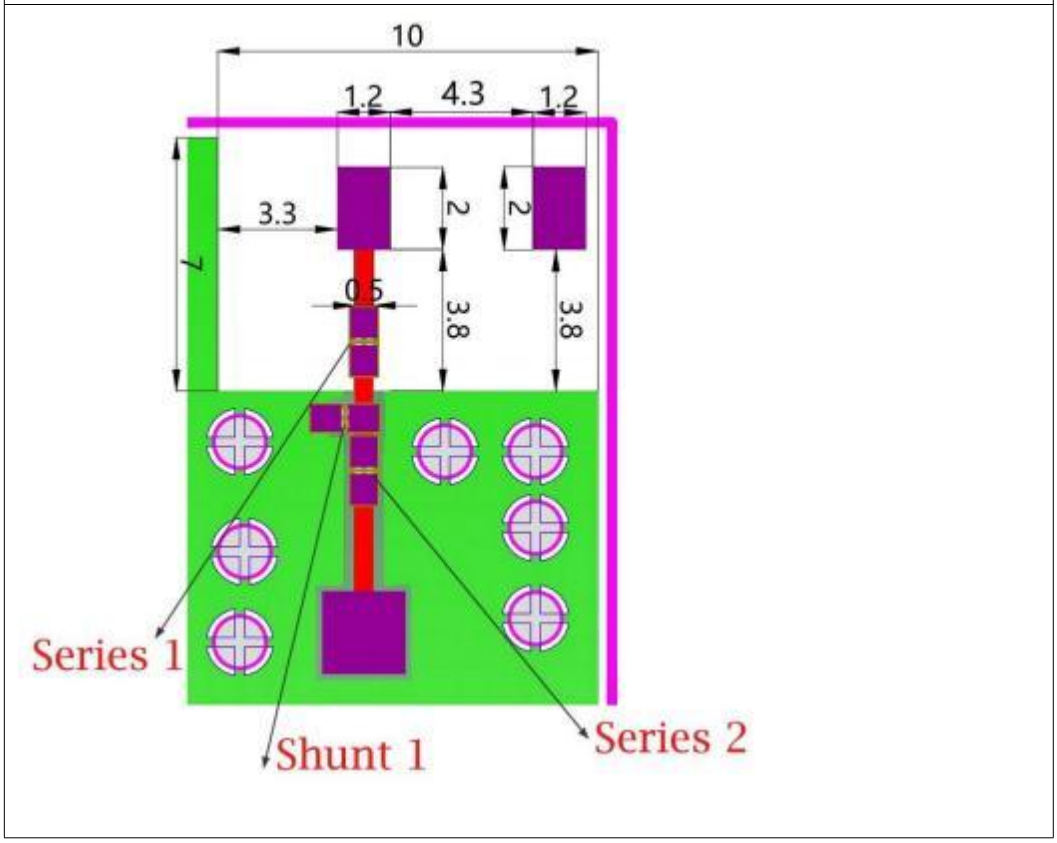
CA-C03	Specification
Working Frequency	2402-2483.5Mhz
Band Width	>100MHz
Impedance	50 Ω
Gain(dBi)	4.3（peak）
VSWR	<2
Operation Temperature	-40℃~+95℃
Power Capacity	3W
Manufacturer	Guangzhou Cambrian Electronic Technology Co., Ltd.

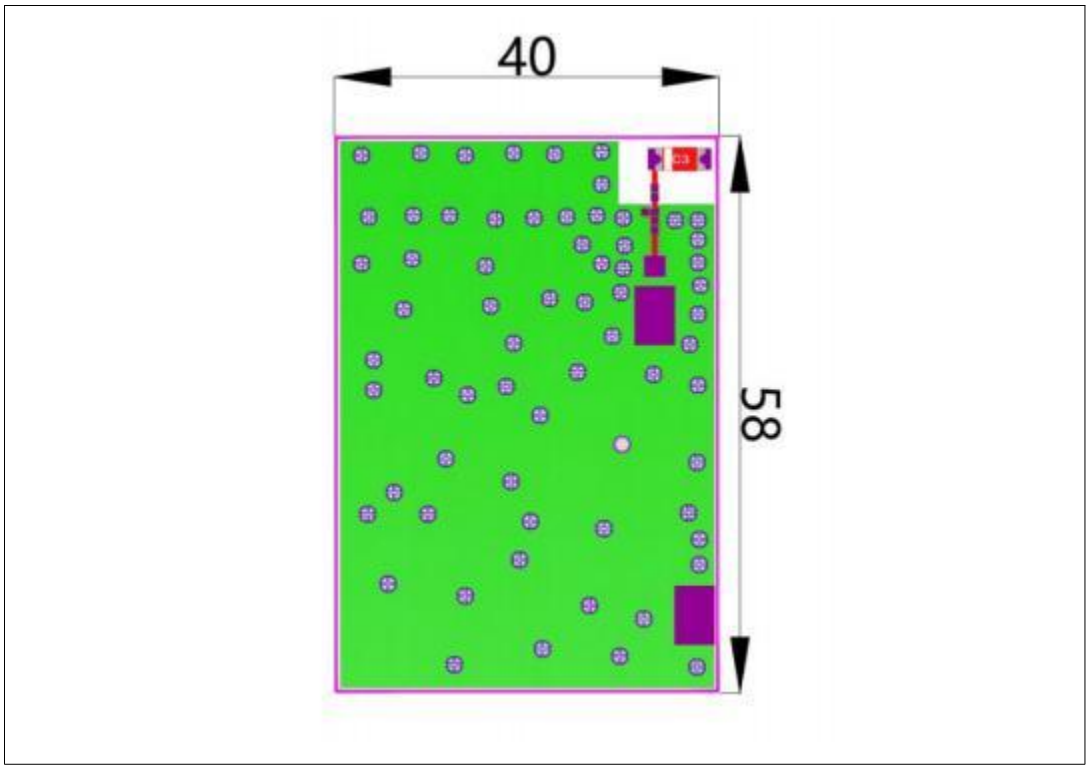
The antenna 2.4G operating frequency needs to be achieved through impedance matching device debugging.

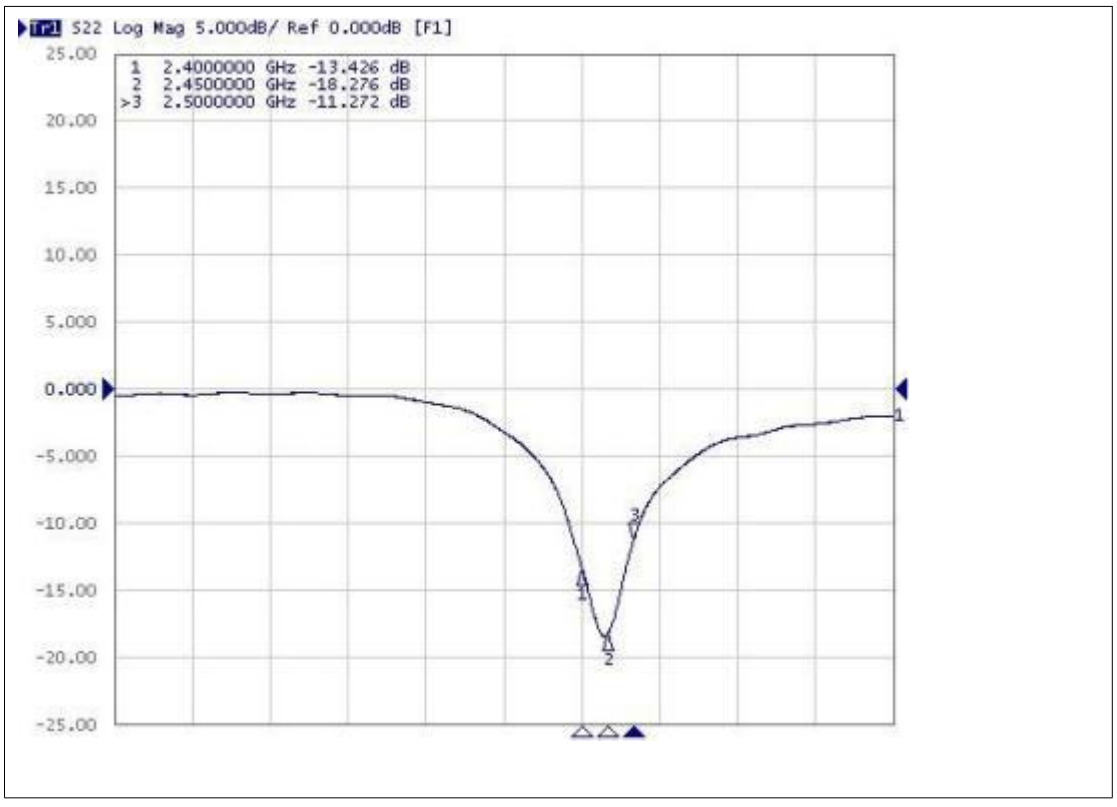
Antenna pad and trace design

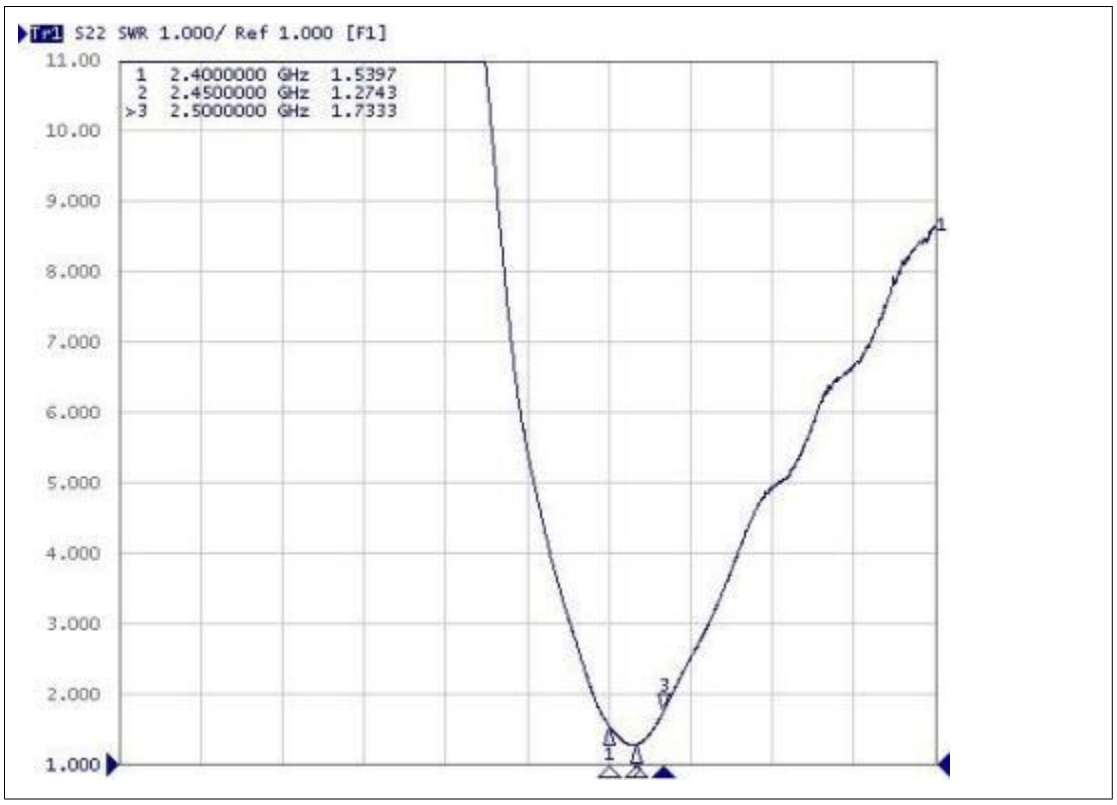



Empty Area
50Ω Feed line
Unit: mm
Ground
50Ω Transmission Line
Soldering Pad
58
40


10
1.2
4.3
1.2
3.3
2
2
7
0.5
3.8
3.8
Series 1
Shunt 1
Series 2

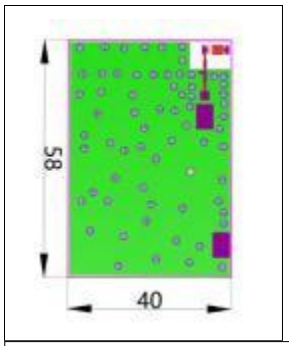

40
58

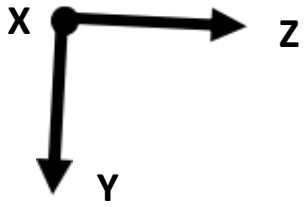

Tr1 S22 Log Mag 5.000dB/ Ref 0.000dB [F1]
1 2.4000000 GHz -13.426 dB
2 2.4500000 GHz -18.276 dB
>3 2.5000000 GHz -11.272 dB
25.00
20.00
15.00
10.00
5.000
0.000
-5.000
-10.00
-15.00
-20.00
-25.00



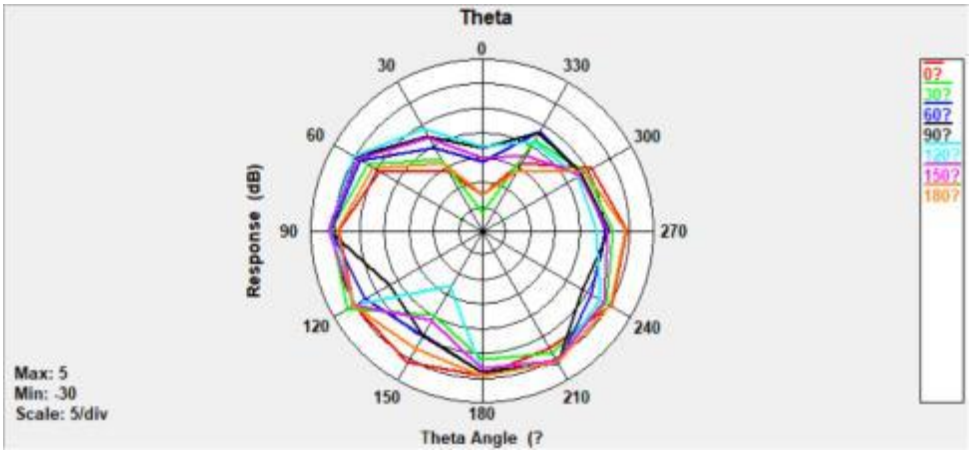
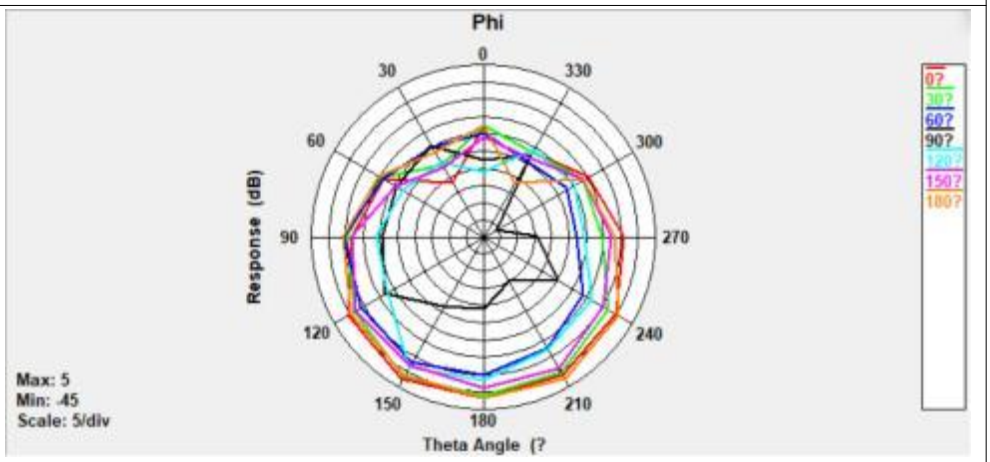
Efficiency and radiation pattern

The performance of efficiency, radiation pattern, gain, etc. is based on the test board design. The specification and characteristic test data of the CA-C03 antenna are based on the test PCB board size and the test direction shown in the figure below. The following data is completed in the ETS 3D microwave anechoic chamber test.





Gain and efficiency	2.4G-2.5GHz
Peak Gain	4.3dBi
Average Gain across the band	4.1dBi
Gain Range across the band	3.9dBi~4.3dBi
Peak Efficiency	81.7%
Average Efficiency across the band	80.2%
Efficiency Range across the band	**78.6%~81.7%**

Theta @2.405 GHz	
Phi @2.450 GHz	
Total @2.480 GHz