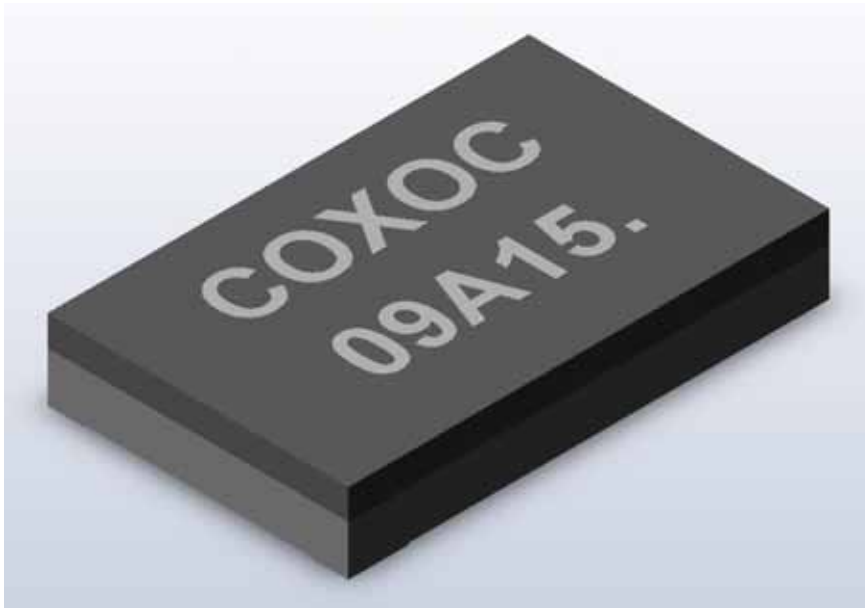




Patent

Approval Sheet

2.4/5.2/5.8GHz ISM Bands Chip Antenna



920D01E09A15013

Ver. 1.02

2005/11/07

DESCRIPTIONS

The exciting **920D01E09A15013** is one of the world's high-performance 2.4/5.2/5.8GHz small chip antennas. It is for all 2.4/5.2/5.8GHz applications, including Bluetooth, IEEE802.11a/b/g, home RF, ZigBee and other popular and emerging standards. This chip antenna comprises a radiating structure of multiple meandered conducting strips, which are developed on a tiny piece of Printed Circuit Board (PCB) and packed with a Liquid Crystal Polymer (LCP) dielectric composite material to achieve size, performance characteristics and cost effectiveness superior to other designs. The incredibly compact surface mountable package measures a merely 8mm (L) x 5mm (W) in dimensions and is fully compatible with hand- and reflow-attachment processes. Also, no additional impedance-matching circuit is required so that the occupied length for using this antenna on PCB is just 8mm. The antenna's favorable electrical specifications, stability and cost-effectiveness make it the logical choice for a wide variety of applications in the 2.4/5.2/5.8GHz ISM bands.

FEATURES

- Low Profile, Ultra-Thin, Light Weight (0.05g)
- Miniaturized Size (8×5mm²)
- Omni-Directional Antenna Patterns
- Low Loss (Gain > 1 dBi)
- 50Ω Characteristic Impedance
- Impedance-Matching Free
- Wide Bandwidth
- Favorable Linear Polarization
- Fully Manual and Surface Mount Compatible
- Incredibly Compact SMD Package
- Highly Stable with Variations in Temperature and Humidity
- LCP Insert Molding Technology
- Cost-Effective

APPLICATIONS

- Bluetooth
- IEEE802.11a/b/g
- Wireless PCMCIA Cards
- Telemetry
- Data Collection
- Industrial Process Monitoring
- Compact Wireless Products
- External Antenna Elimination
- ZigBee

SPECIFICATIONS

- 920D01E09A15013



KEY FEATURES:

- Low Profile, Ultra-Thin, Light Weight (0.05g)
- Miniaturized Size (8×5mm²)
- Impedance-Matching Free
- SMD Type
- Cost-Effective

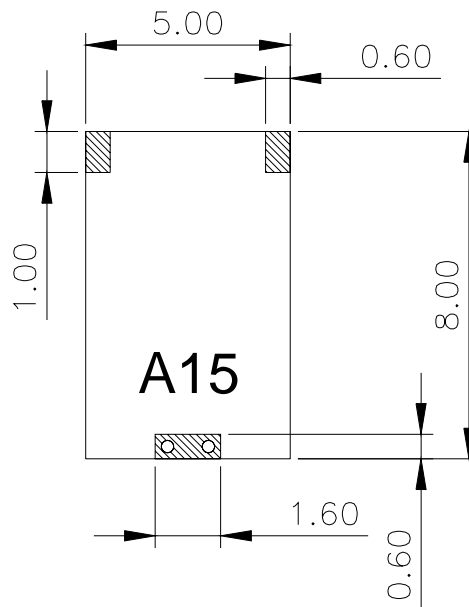
MAIN APPLICATIONS:

- Wireless communications in 2.4/5.2/5.8GHz ISM Bands

	Multi-Band Planar Chip Antenna		
Dimension (mm ³)	8×5		
Central Frequency (GHz)	2.45	5.25	5.8
Bandwidth (MHz)	>200	>300	>300
Gain (dBi) (Typical)	0	1	2
VSWR	2.0 (max.)		
Return Loss (dB)	-10 (max.)		
Polarizaion	Linear		
Pattern	Omni-Directional		
Impedance ()	50		
Operating Temperature ()	-25 ~ +85		
Construction	LCP Insert Molding		

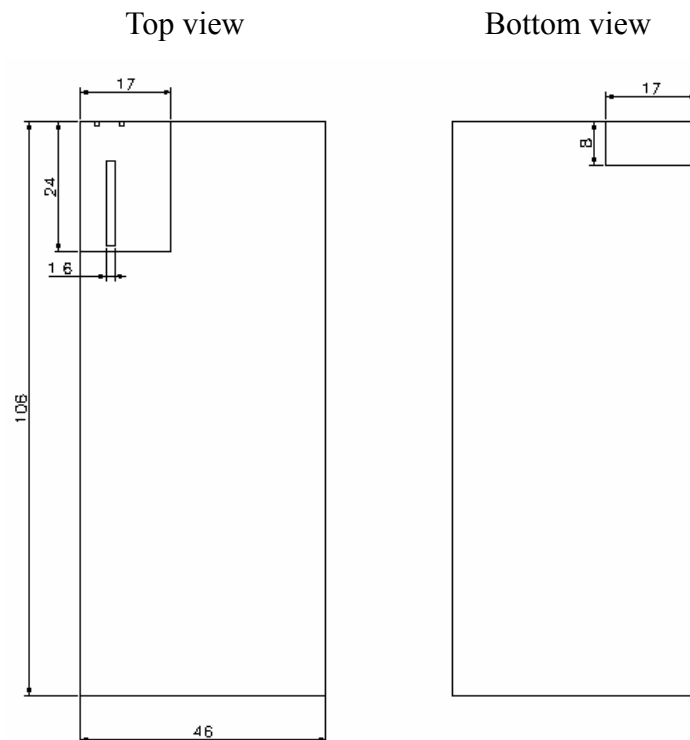
CHARACTERISTICS

Pad Layout (unit: mm)

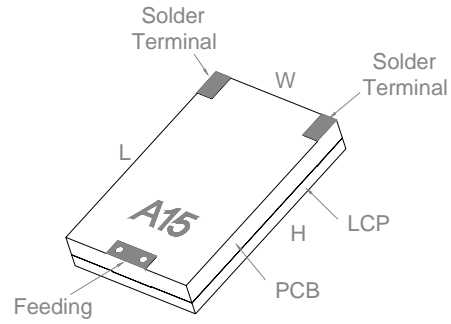


Land Pattern (unit: mm)

For best results, the chip antenna 920D01E09A15013 should be mounted on one corner of 0.8mm thick FR4 PCB with $8.0 \times 17 \text{mm}^2$ empty area and 50Ω microstrip-line input, as shown below.



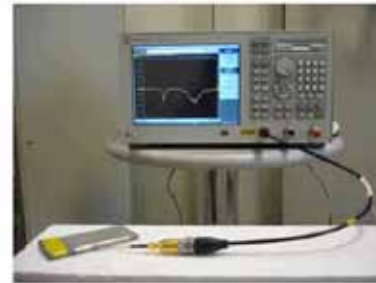
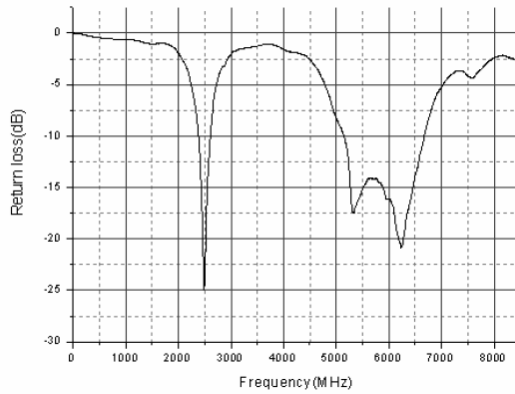
Construction



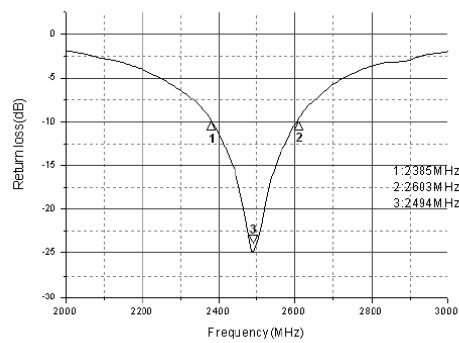
Antenna size: 8mm(L)×5mm(W)

Return Loss and Bandwidth

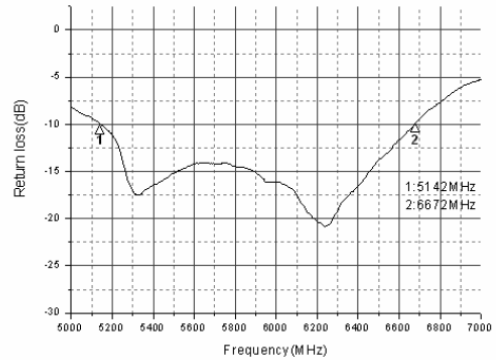
920D01E09A15013 S11



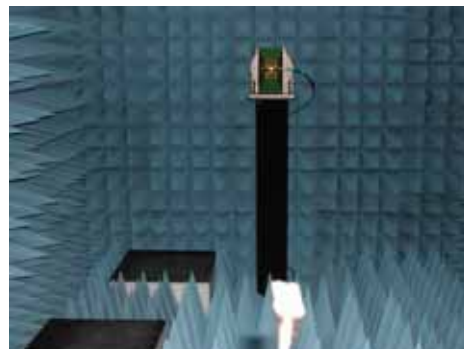
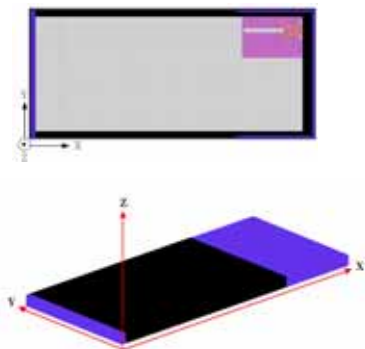
S11@2.45 GHz



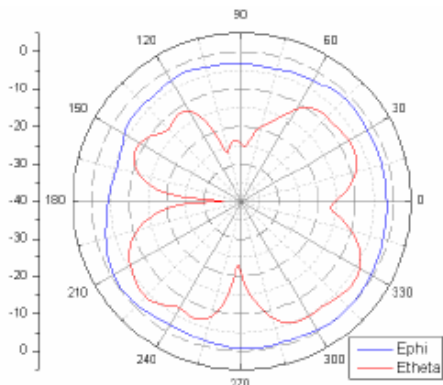
S11@5.2/5.8 GHz



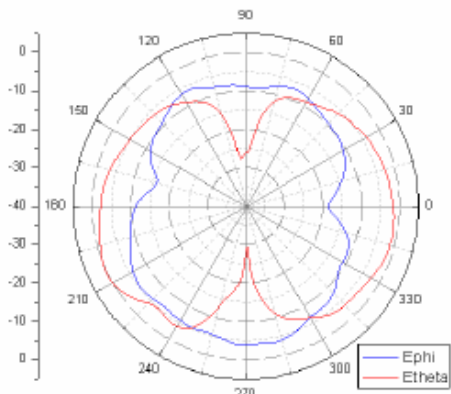
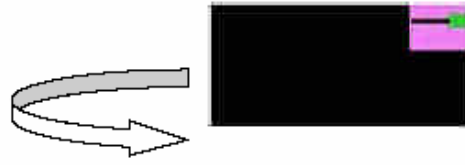
Radiation Pattern (unit: dBi)



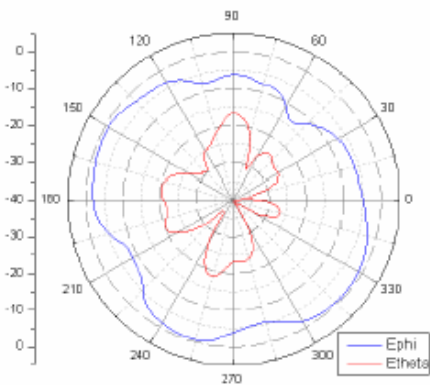
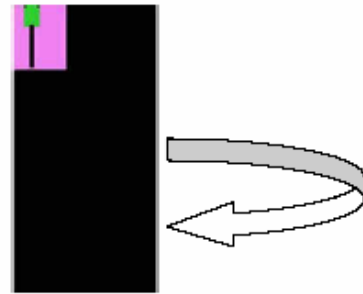
@2.45GHz



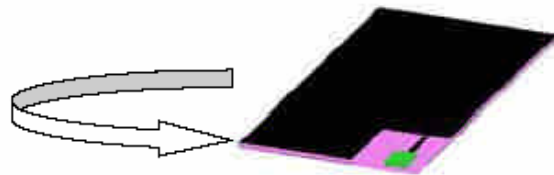
Phi=0, Theta=0 to 360, Frequency=2.45GHz



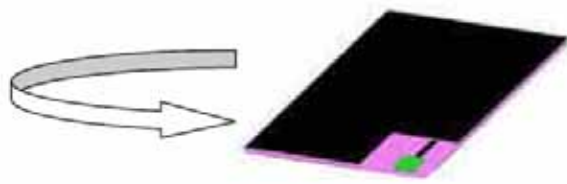
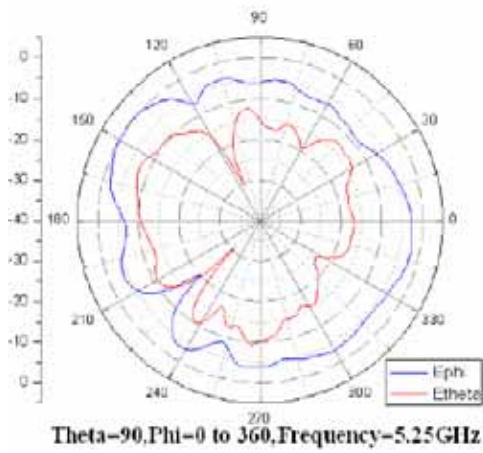
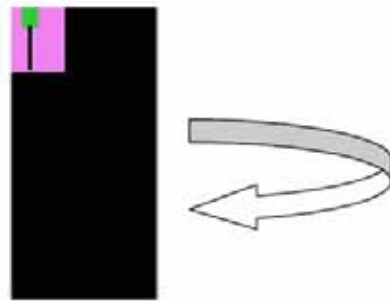
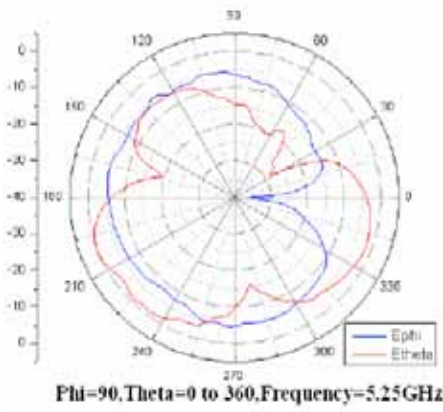
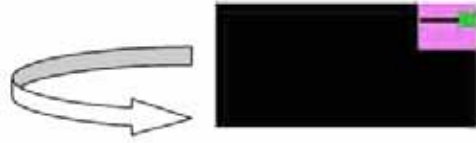
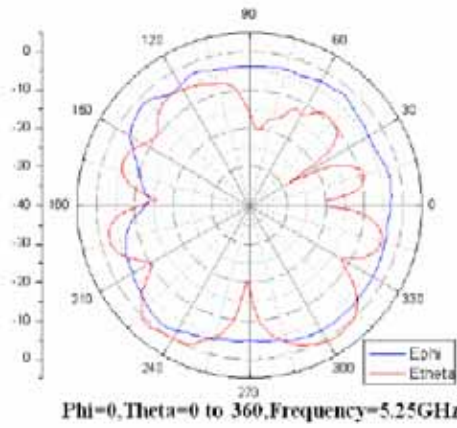
Phi=90, Theta=0 to 360, Frequency=2.45GHz



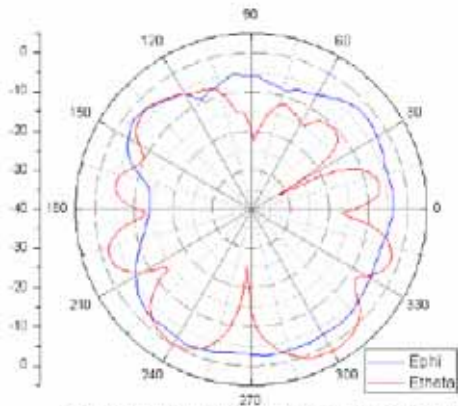
Theta=90, Phi=0 to 360, Frequency=2.45GHz



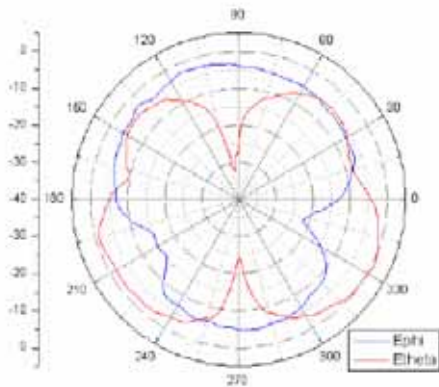
@5.25GHz



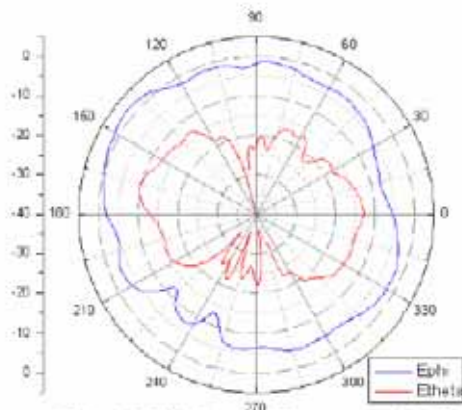
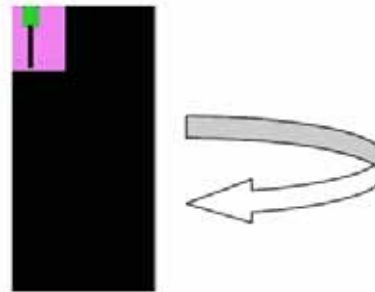
@5.8GHz



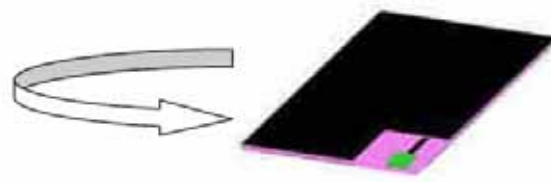
$\Phi=0, \Theta=0$ to 360 , Frequency=5.8GHz



$\Phi=90, \Theta=0$ to 360 , Frequency=5.8GHz

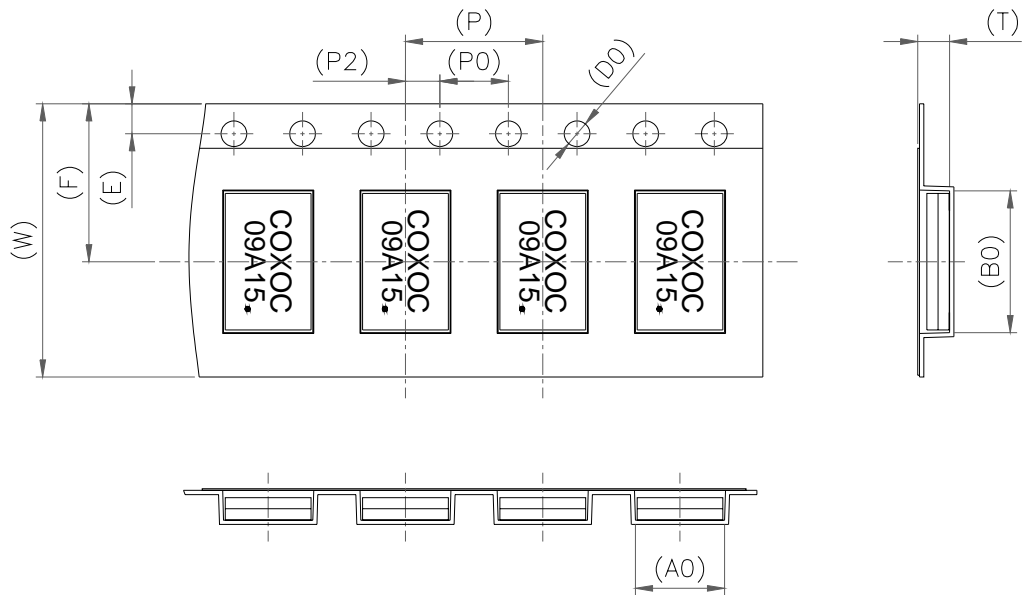


$\Theta=90, \Phi=0$ to 360 , Frequency=5.8GHz



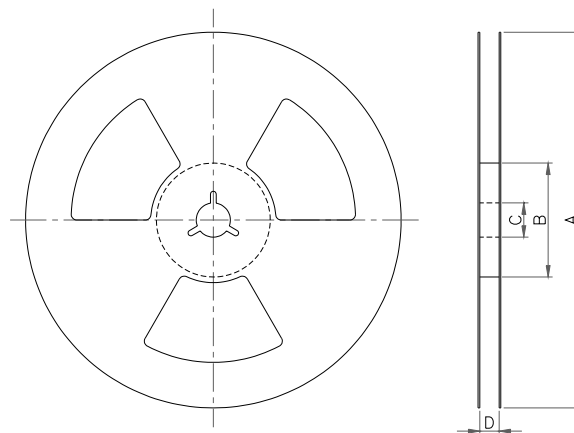
PACKAGING

Plastic Tape Specification (unit: mm)



Index	W	E	F	T	P
Dimension(mm)	16.00 ± 0.30	1.75 ± 0.10	7.50 ± 0.10	1.80 ± 0.10	8.00 ± 0.10
Index	P0	P2	D0	A0	B0
Dimension(mm)	4.00 ± 0.10	2.00 ± 0.10	Φ1.50	5.20 ± 0.10	8.30 ± 0.10

REEL DIMENSIONS (unit: mm)



Index	A	B	C	D
Dimension(mm)	Φ330	Φ100	Φ13.5	17.0 ± 0.5

Taping Quantity: MOQ=2K and MAX 5K pieces per 13" reel.

HOW TO ORDER

920 D01 E 09 A15 0 1 3

1 2 3 4 5

1.SERIES NO.

920=Chip Antenna

2.TYPE:

D01=SMD TYPE (5X8mm)

3.ENVIRONMENT PROTECTION MATERIAL:

E=RoHS

4.THICKNESS:

09=0.9mm

5.CENTRE FREQUENCY:

A15 = 2.4/5.2/5.8GHz

HONG KONG & CHINA contact :

Distributor :

SINOPEX ENTERPRISE CO. LTD.

(HK) TEL: 852-23488233 (Shenzhen) TEL : 86-755-83882079

(HK) FAX : 852-23488030 (Shenzhen) FAX : 86-755-83560959

E-MAIL:sales@sinopex-ent.com
