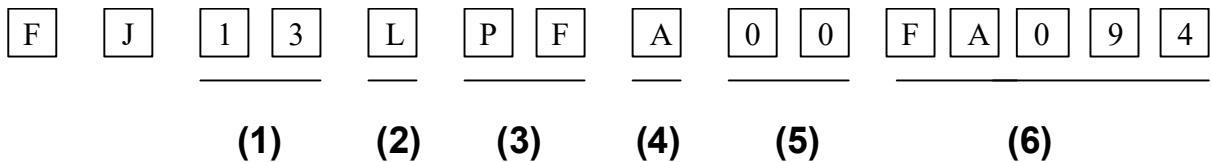


2.4GHz Chip Antenna(FA094)

1. Explanation of Product Number



Product Code:

(1) Dimensions:

13: 3.2x1.6x0.4(mm)

(2) Polarization:

L: Linear Polarization

(3) Product Categories:

PF: Polymer Substrate

(4) Working Frequency:

A: 2400~2500MHz

(5) Applications:

00: WiFi IEEE802.11 b/g / Bluetooth / ZigBee

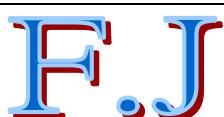
(6) Antenna Series:

FA094: serial number(loop antenna)

Tolerances (Unless otherwise specified)

X : ± X.X : ± X.XX : ±

Angle : ± Hole Dia. : ±



东莞市方久电子科技有限公司
FANGJIU ELECTRIC TECHNOLOGY CO.LTD
Website:www.fj-dg.com

Scale :

Unit : mm

Prepared By : Frank

Checked By : C.H

Designed By : Hsin

Approved By : D.G

THIS SPECIFICATION IS THE PROPERTY OF FANGJIU ELECTRIC TECHNOLOGY CORPORATION AND SHALL NOT BE REPRODUCED OR USED IN ALL CIRCUMSTANCES WITHOUT WRITTEN PERMISSION

TITLE: 2.4GHz Chip Antenna(FA094)

DOCUMENT
NO.

FJ13LPFA00FA094S

REV.
A

2. Features

- *Stable and reliable in performances
- *Low profile, compact size
- *RoHS compliance
- *Low temperature coefficient of frequency
- *SMD type

3. Applications

- *Bluetooth earphone systems
- *Hand-held devices when Bluetooth/WiFi functions are needed, e.g., Smart phone.
- *IEEE802.11 b/g/n
- *ZigBee
- *Wireless PCMCIA cards or USB dongle

4. Description

FANGJIU's chip antenna series are specially designed for Bluetooth/WiFi applications. Based on FANGJIU's proprietary design and processes, this chip antenna has excellent stability and sensitivity to consistently provide high signal reception efficiency.

5. Electrical Specifications

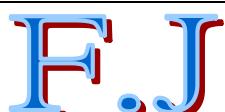
Characteristics		Specifications	Unit
Antenna Dimensions		3.2x1.6x0.4	mm
Ground Plane		85x45	mm
Center Frequency		2442	MHz
Bandwidth (under -10dB return loss)		100 min.	MHz
VSWR		2 max.	
Impedance		50	Ω
Polarization		Linear Polarization	
Gain	Peak	2.6 (typical)	dBi
	Efficiency	85 (typical)	%
Temperature Coefficient of Frequency		0±20 max (@ -40°C~85°C)	ppm/°C

*Center frequency will be offset to working frequency according to the conditions of user's ground plane and radome.

Tolerances (Unless otherwise specified)

X : ± X.X : ± X.XX : ±

Angle : ± Hole Dia. : ±



東莞市方久電子科技有限公司
FANGJIU ELECTRIC TECHNOLOGY CO.LTD
Website:www.fj-dg.com

Scale :

Unit : mm

Prepared By : Frank

Checked By : C.H

THIS SPECIFICATION IS THE PROPERTY OF FANGJIU ELECTRIC TECHNOLOGY CORPORATION AND SHALL NOT BE REPRODUCED OR USED IN ALL CIRCUMSTANCES WITHOUT WRITTEN PERMISSION

Designed By : Hsin

Approved By : D.G

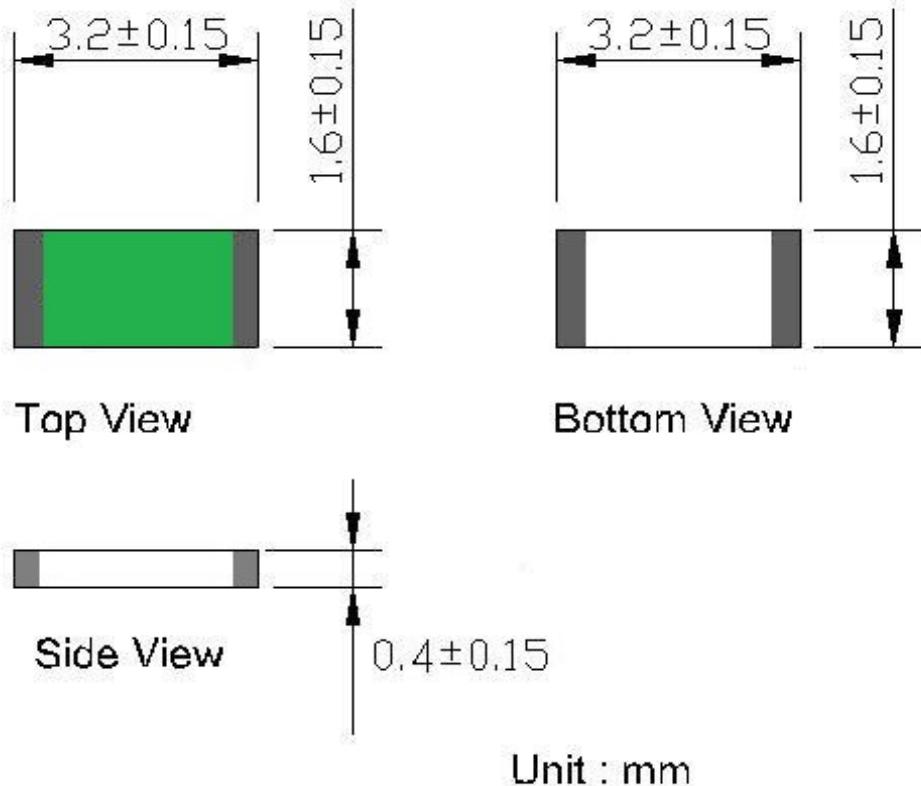
TITLE: 2.4GHz Chip Antenna(FA094)

DOCUMENT NO.

FJ13LPFA00FA094S

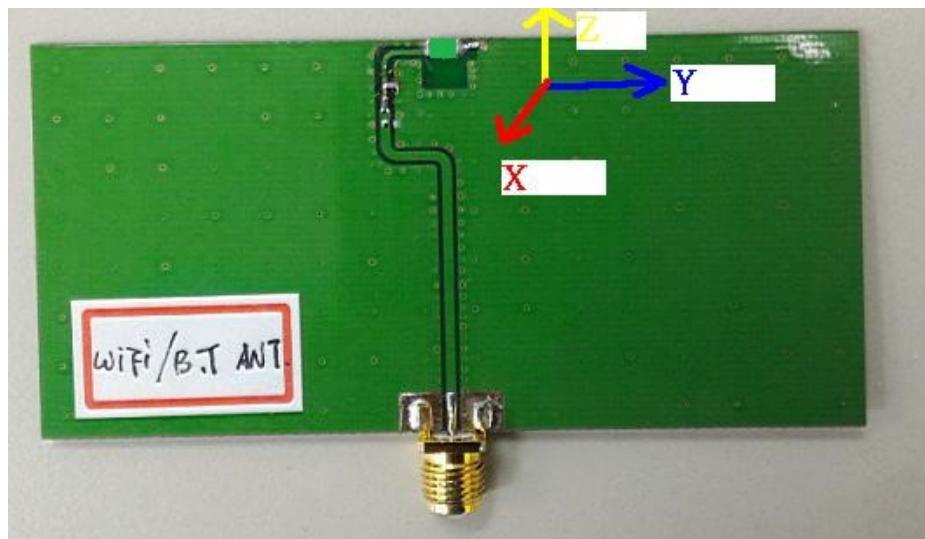
REV.
A

6. Antenna Dimensions

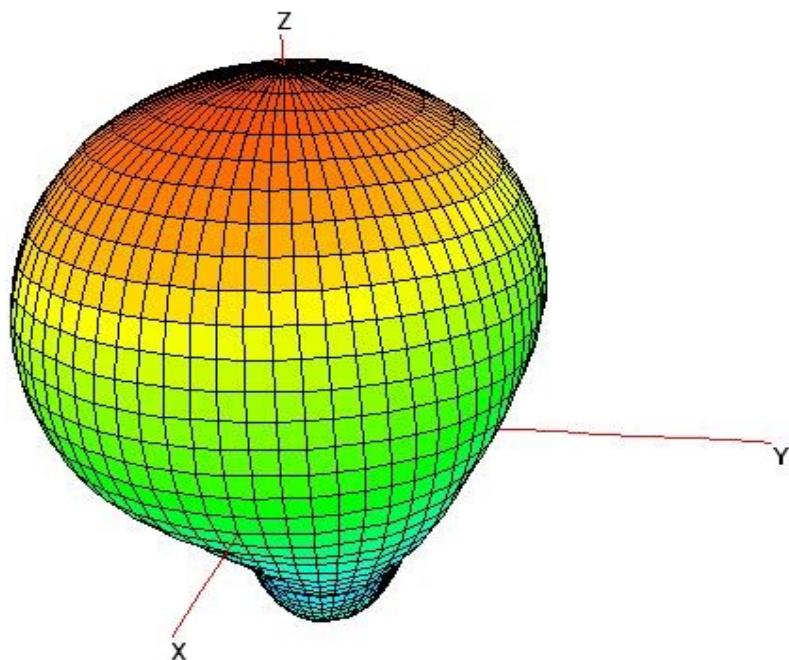


7. Measurement Results:

7-1. 3D Gain Pattern



Tolerances (Unless otherwise specified) X : ± X.X : ± X.XX : ±			 東莞市方久電子科技有限公司 FANGJIU ELECTRIC TECHNOLOGY CO.LTD Website: www.fj-dg.com
Angle : ±	Hole Dia. : ±		
Scale :	Unit : mm		
Prepared By : Frank	Checked By : C.H		THIS SPECIFICATION IS THE PROPERTY OF FANGJIU ELECTRIC TECHNOLOGY CORPORATION AND SHALL NOT BE REPRODUCED OR USED IN ALL CIRCUMSTANCES WITHOUT WRITTEN PERMISSION
Designed By : HSin	Approved By : D.G		
TITLE: 2.4GHz Chip Antenna(FA094)		DOCUMENT NO.	FJ13LPFA00FA094S
			REV. A



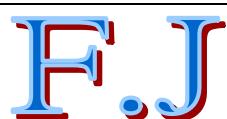
7-2. Efficiency Table

Frequency(GHz)	2400MHz	2421MHz	2442MHz	2471MHz	2500MHz
Average Gain(dBi)	-1.36	-0.86	-0.70	-1.02	-1.42
Efficiency(%)	73	82	85	79	72
Peak Gain(dBi)	1.71 dBi	2.21	2.60 dBi	2.10 dBi	1.42 dBi

Tolerances (Unless otherwise specified)

X : ± X.X : ± X.XX : ±

Angle : ± Hole Dia. : ±



东莞市方久电子科技有限公司
FANGJIU ELECTRIC TECHNOLOGY CO.LTD
Website:www.fj-dg.com

Scale :

Unit : mm

Prepared By : Frank

Checked By : C.H

Designed By : Hsin

Approved By : D.G

THIS SPECIFICATION IS THE PROPERTY OF FANGJIU ELECTRIC TECHNOLOGY CORPORATION AND SHALL NOT BE REPRODUCED OR USED IN ALL CIRCUMSTANCES WITHOUT WRITTEN PERMISSION

TITLE: 2.4GHz Chip Antenna(FA094)

DOCUMENT
NO.

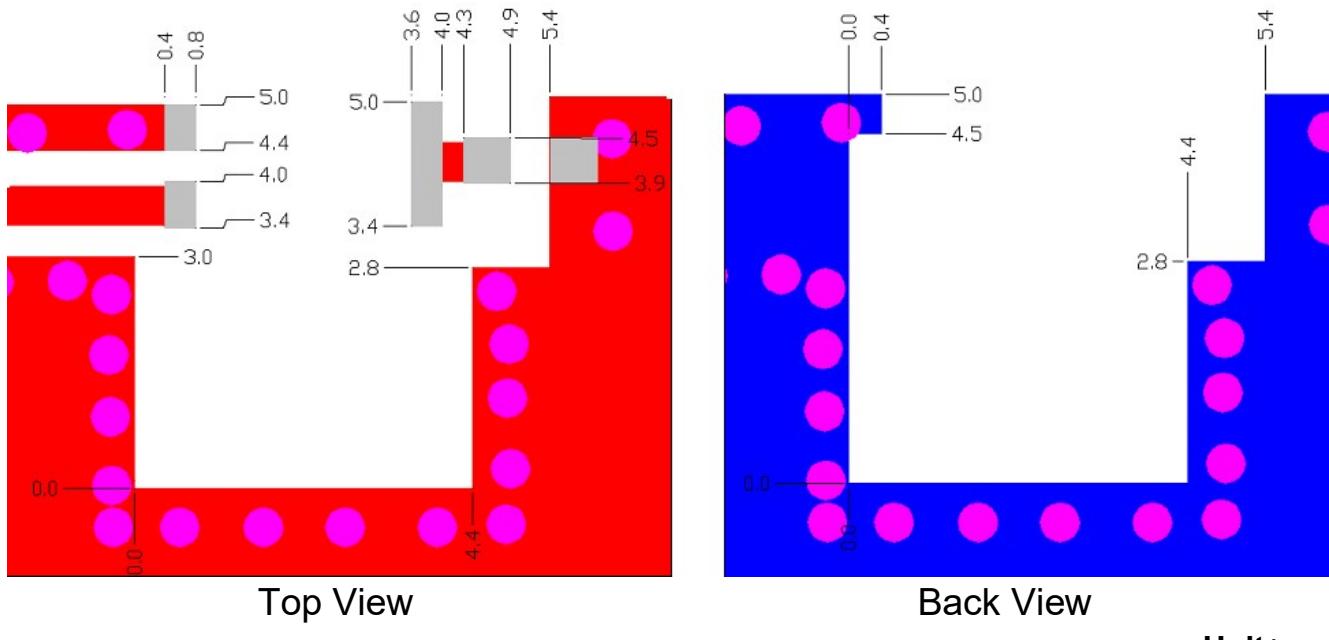
FJ13LPFA00FA094S

REV.
A

8. Layout Guide:

a. Solder Land Pattern:

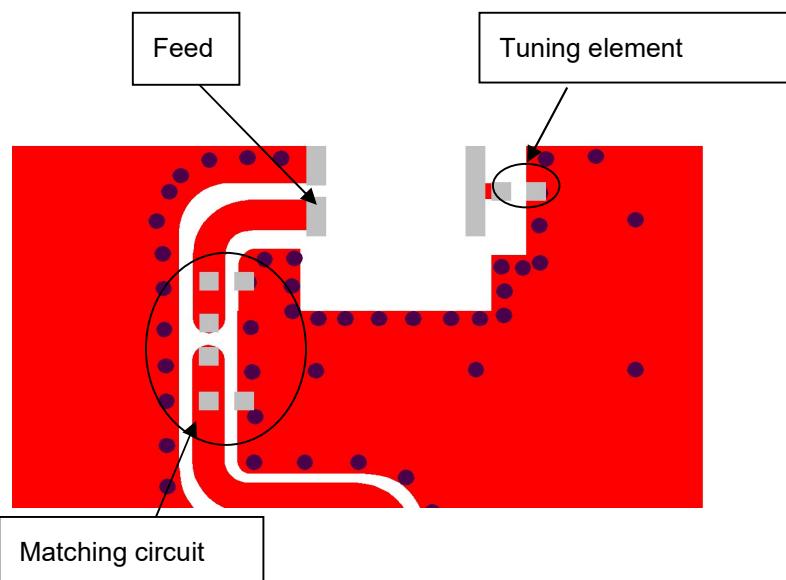
Land pattern for soldering (gray marking areas) is as shown below. Depending on Customer's requirement, matching circuit as shown below is also recommended.



Unit: mm

9. Frequency tuning:

a. Chip antenna tuning scenario :

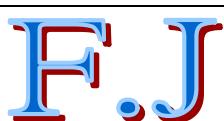


Tolerances (Unless otherwise specified)

X : \pm X.X : \pm X.XX : \pm

Angle : \pm

Hole Dia. : \pm



东莞市方久电子科技有限公司
FANGJIU ELECTRIC TECHNOLOGY CO.LTD
Website: www.fj-dg.com

Scale :

Unit : mm

Prepared By : Frank

Checked By : C.H

Designed By : Hsin

Approved By : D.G

THIS SPECIFICATION IS THE PROPERTY OF FANGJIU ELECTRIC TECHNOLOGY CORPORATION AND SHALL NOT BE REPRODUCED OR USED IN ALL CIRCUMSTANCES WITHOUT WRITTEN PERMISSION

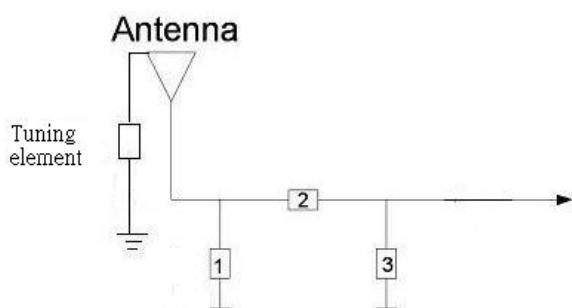
TITLE: 2.4GHz Chip Antenna(FA094)

DOCUMENT NO.

FJ13LPFA00FA094S

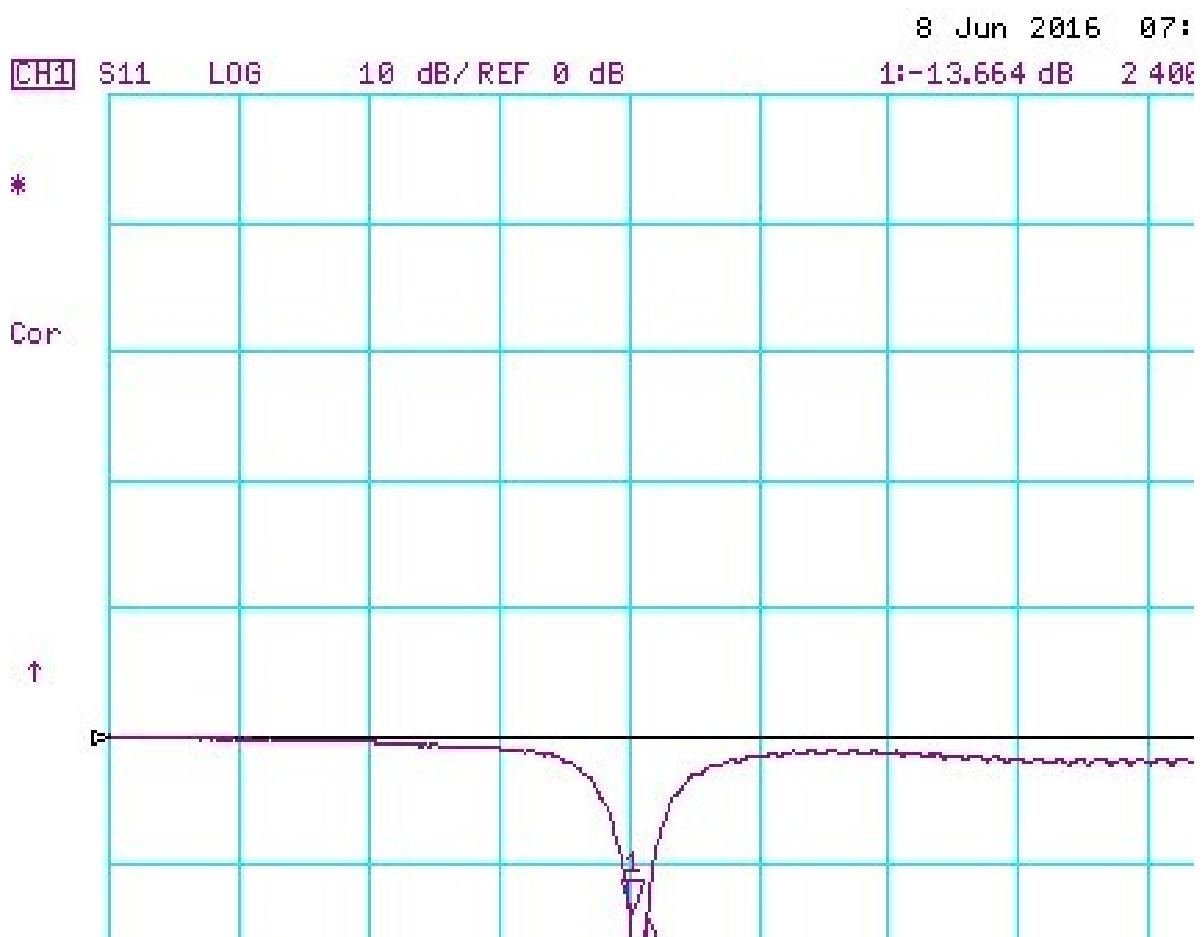
REV.
A

b. Matching circuit : (Center frequency is about 2442MHz on 85x45(mm) ground plane)



System Matching Circuit Component		
Location	Description	Vendor
1	0.3pF	Darfond (0402)
2	0.56pF	Darfond (0402)
3	N/A	(0402)
Tuning element	1.5pF	Darfond(0402)

Return Loss(S_{11})

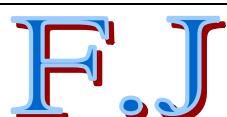


Tolerances (Unless otherwise specified)

X : \pm X.X : \pm X.XX : \pm

Angle : \pm

Hole Dia. : \pm



东莞市方久电子科技有限公司
FANGJIU ELECTRIC TECHNOLOGY CO.LTD
Website:www.fj-dg.com

Scale :

Unit : mm

Prepared By : Frank

Checked By : C.H

Designed By : Hsin

Approved By : D.G

THIS SPECIFICATION IS THE PROPERTY OF FANGJIU ELECTRIC TECHNOLOGY CORPORATION AND SHALL NOT BE REPRODUCED OR USED IN ALL CIRCUMSTANCES WITHOUT WRITTEN PERMISSION

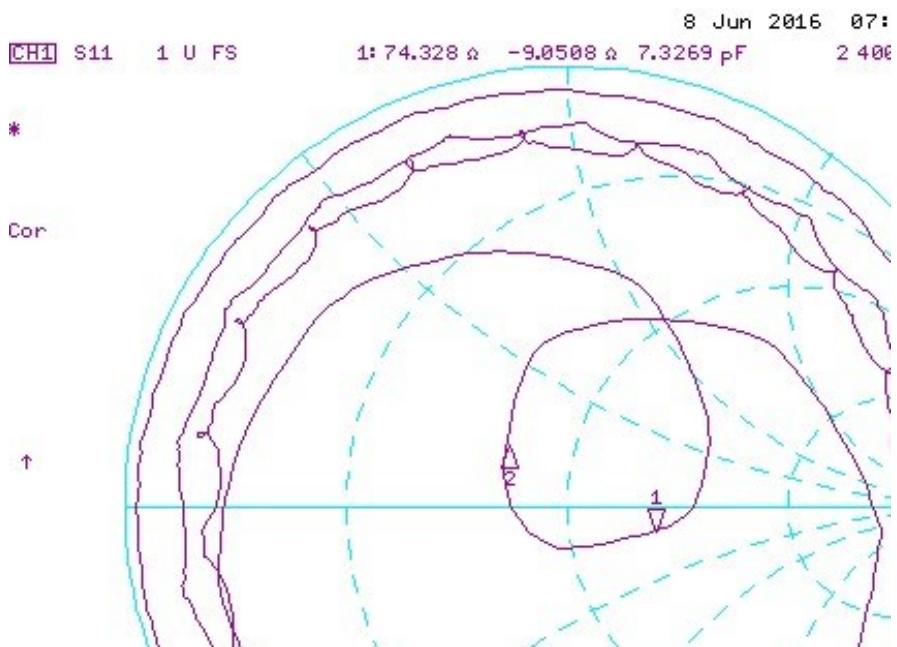
TITLE: 2.4GHz Chip Antenna(FA094)

DOCUMENT NO.

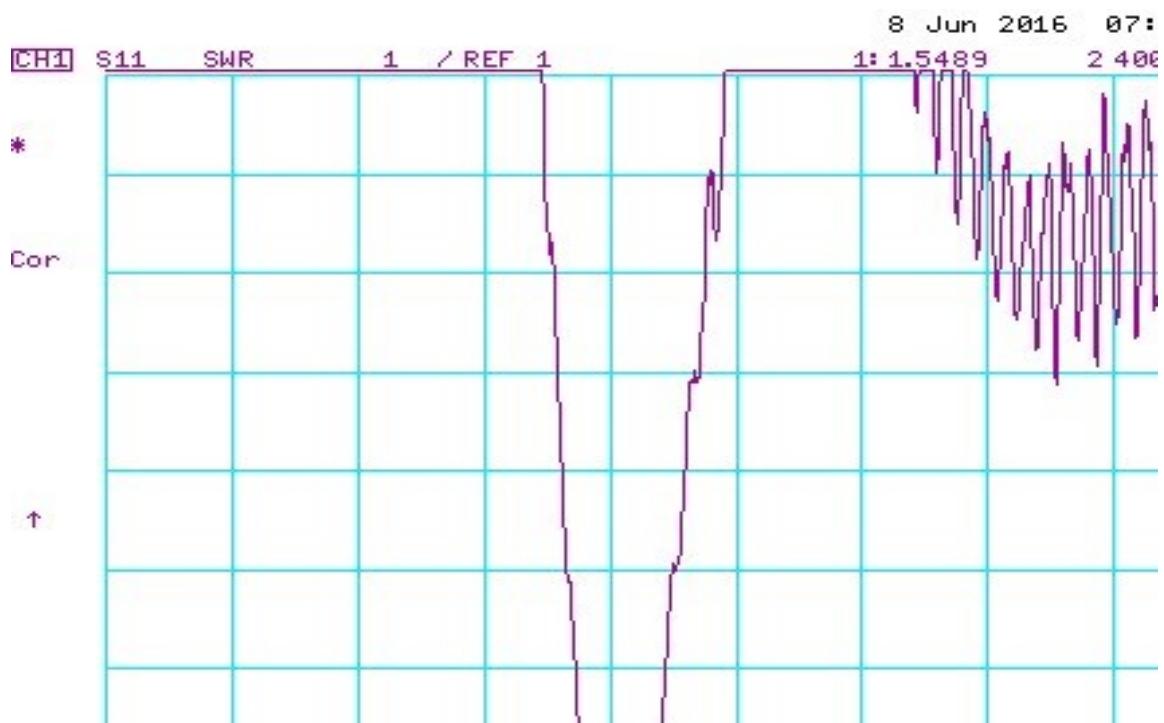
FJ13LPFA00FA094S

REV.
A

Smith chart(S11)



VSWR(S11)



Tolerances (Unless otherwise specified)

X : \pm X.X : \pm X.XX : \pm

Angle : \pm

Hole Dia. : \pm

F.J

東莞市方久電子科技有限公司
FANGJIU ELECTRIC TECHNOLOGY CO.LTD
Website: www.fj-dg.com

Scale :

Unit : mm

Prepared By : Frank

Checked By : C.H

Designed By : Hsin

Approved By : D.G

THIS SPECIFICATION IS THE PROPERTY OF FANGJIU ELECTRIC TECHNOLOGY CORPORATION AND SHALL NOT BE REPRODUCED OR USED IN ALL CIRCUMSTANCES WITHOUT WRITTEN PERMISSION

TITLE: 2.4GHz Chip Antenna(FA094)

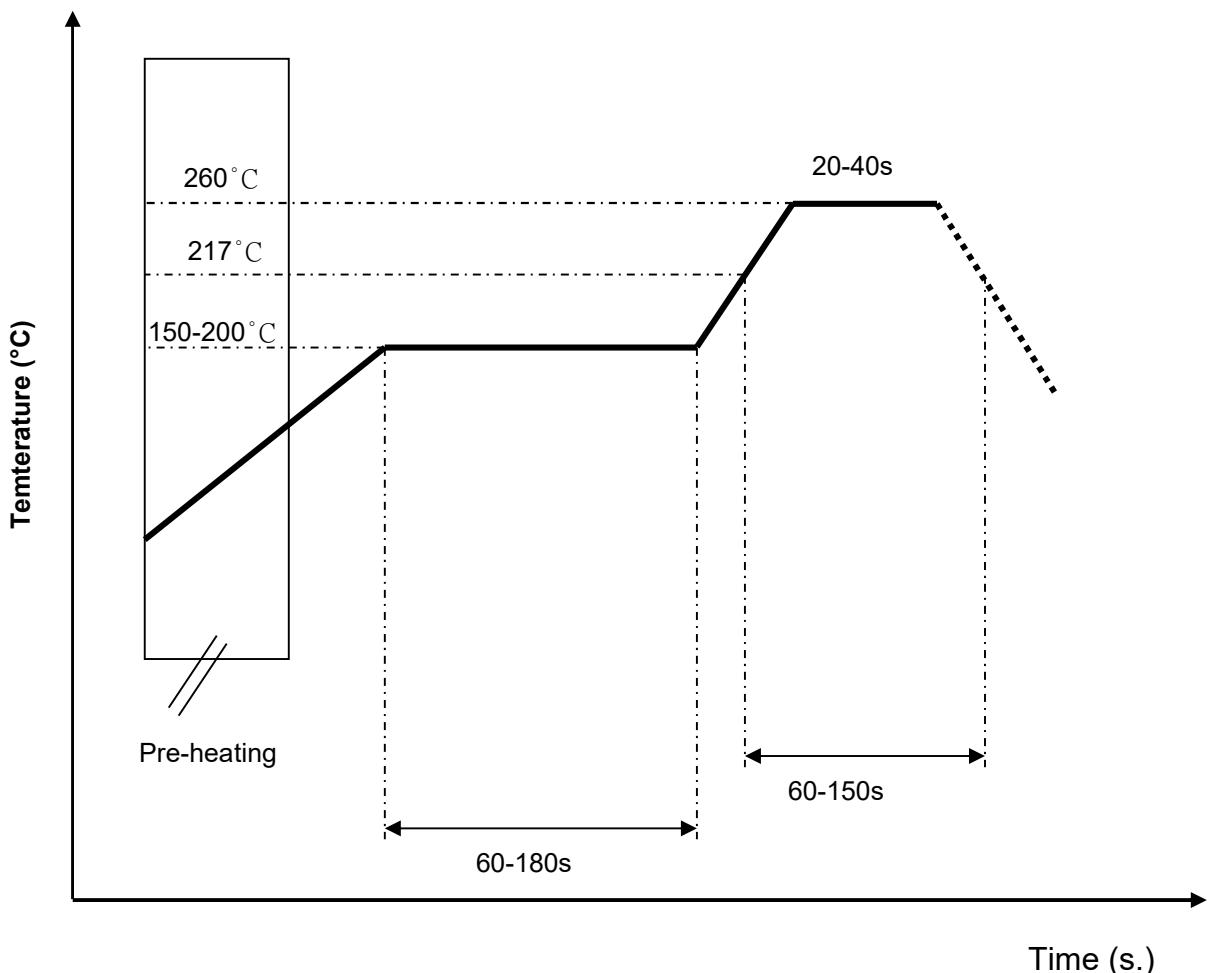
DOCUMENT NO.

FJ13LPFA00FA094S

REV.
A

10. Soldering Conditions:

Typical Soldering Profile for Lead-free Process

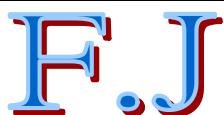


Tolerances (Unless otherwise specified)

X : \pm X.X : \pm X.XX : \pm

Angle : \pm

Hole Dia. : \pm



東莞市方久電子科技有限公司
FANGJIU ELECTRIC TECHNOLOGY CO.LTD
Website: www.fj-dg.com

Scale :

Unit : mm

Prepared By : Frank

Checked By : C.H

Designed By : Hsin

Approved By : D.G

THIS SPECIFICATION IS THE PROPERTY OF FANGJIU ELECTRIC TECHNOLOGY CORPORATION AND SHALL NOT BE REPRODUCED OR USED IN ALL CIRCUMSTANCES WITHOUT WRITTEN PERMISSION

TITLE: 2.4GHz Chip Antenna(FA094)

DOCUMENT
NO.

FJ13LPFA00FA094S

REV.
A