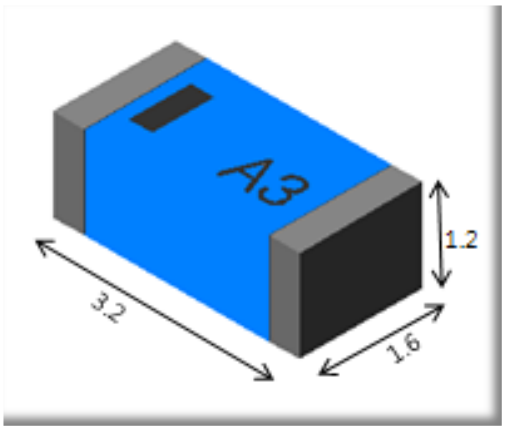
DATASHEET 2JE07a



Application

Bluetooth
Zigbee
WLAN (IEEE 802.11 b/g)
ISM 2.4GHz Wireless Devices

Features

Helical Structure
Small Size (3.2*1.6*1.2mm^3)
Easy Optimizing
with external lumped matching components
SMT Available under Pb-free Condition
RoHS Compliant

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Revision History

Rev. No	Date	Title	Contents	Page
7	'09.04.07	Format	Changed document format	

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1. Specifications

1.1 Electrical Specifications

No	Item	Spec.	Remark
1	Frequency Range [GHz]	2.4 ~2.485	
2	VSWR	Max 3.0:1	
3	Peak Gain [dBi]	typ. 2.3	
4	Total Avg. Gain [dBi]	typ. -0.6	
5	Efficiency [%]	typ. 84	
6	Polarization	Linear	
7	Impedance [Ω]	Nominal 50	

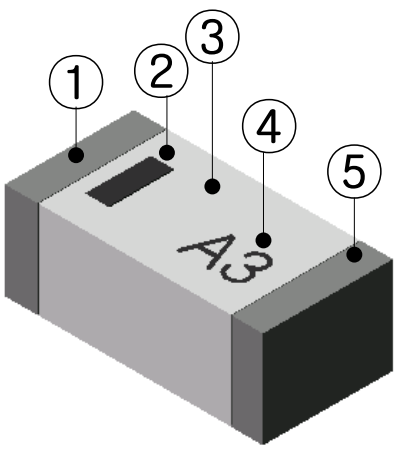
✓ The results are measured on the 10x43mm^2 evaluation board(EVB).
✓ See Page 6. for more detail gain parameter

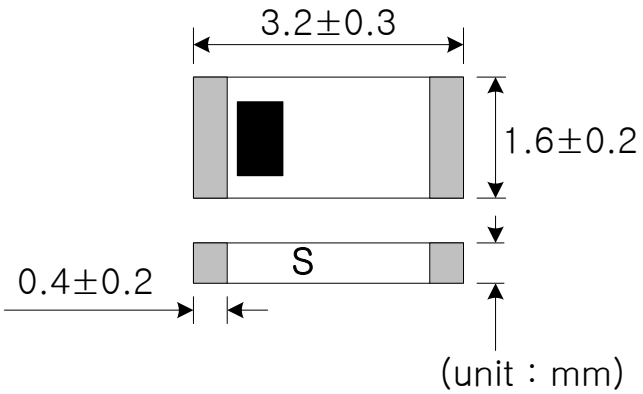
1.2 Mechanical Specifications

No	Item	Spec.	Remark
1	Dimensions (LxWxH)	3.2x1.6x1.2 mm^3	
2	Unit Weight	typ. 20 mg	
3	Operating Temperature	-35 ~ +85 ℃	

1.3 Appearance & Material

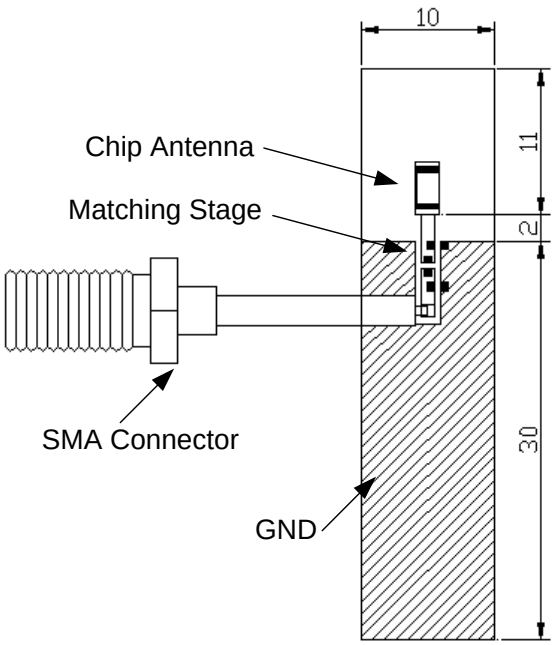
No	Item	Function	Material
①	External Electrode	Soldering, Input Port	Ag/Ni/Sn
②	Direction index	Indication of	Ceramic
③	Ceramic Body	-	Ceramic
④	Model No. index	-	Ceramic
⑤	External Electrode	Soldering	Ag/Ni/Sn





2. PCB Design for Test

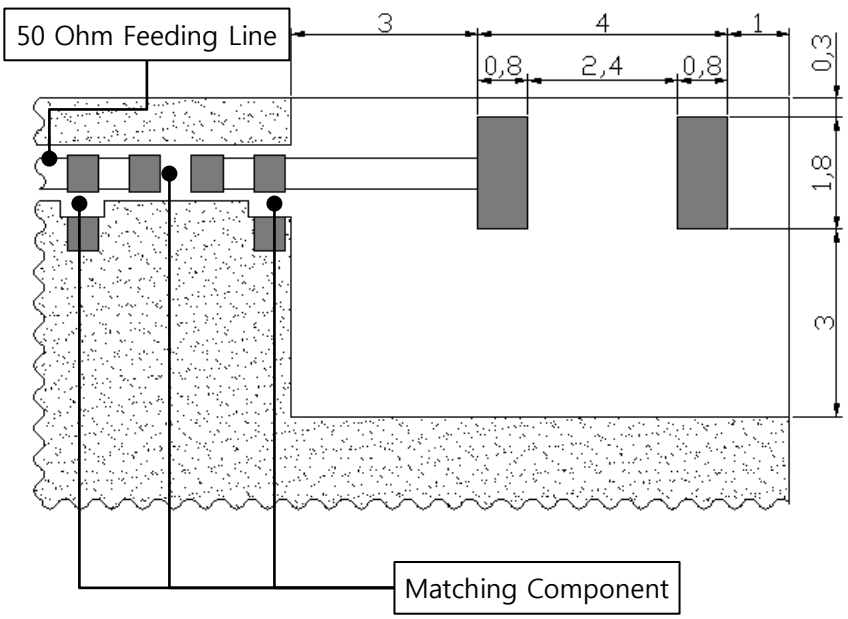
2.1 Evaluation Board Dimension

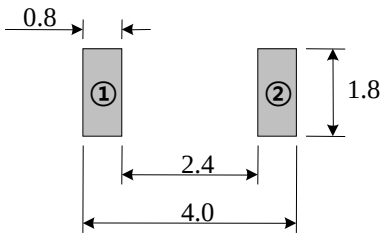


[Unit : mm]

✓ Evaluation board size ~ 10x43
✓ Fill Cut Area (GND Clearance) ~ 10x13

2.2 PCB Design Guide





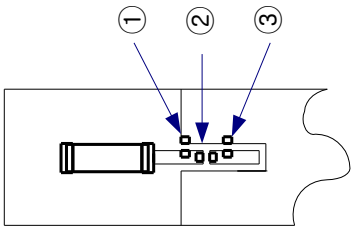
[PCB Solder Land]

No	Pin Assignment
①	Feeding
②	N.C

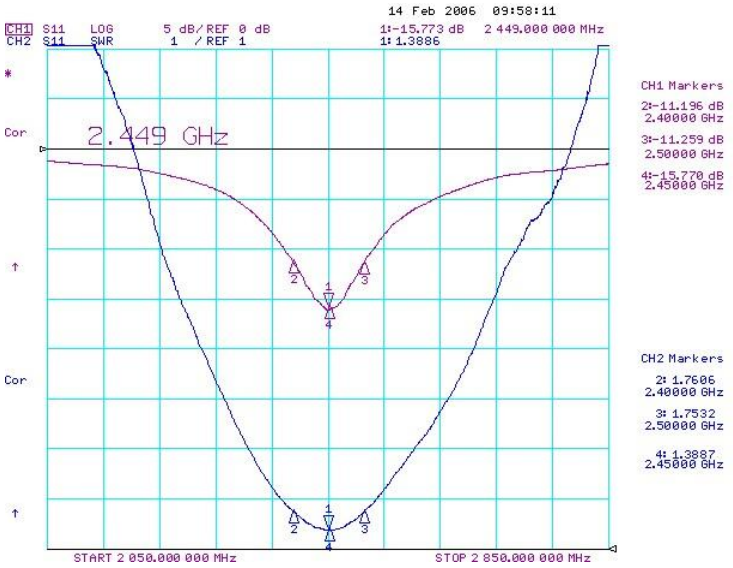
[unit : mm]

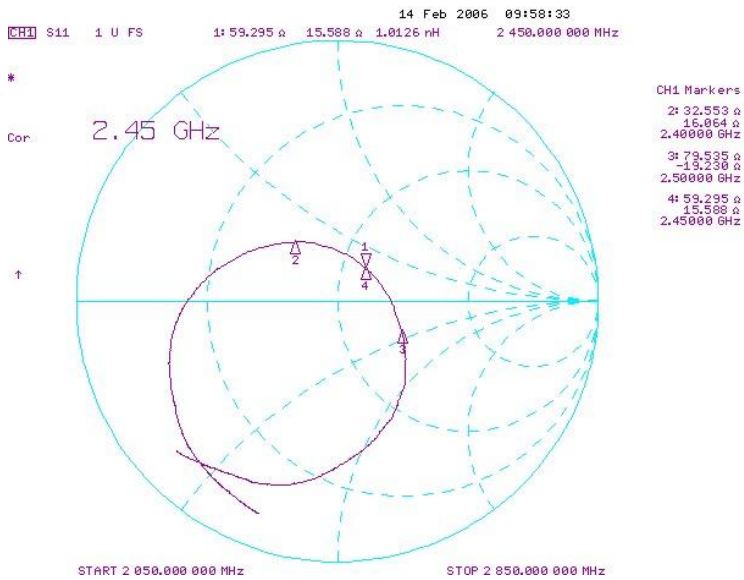
3. Measurement Result

3.1 Typical Measurement Result (VSWR/RL, Smithchart)



No	Matching Value
①	N.C
②	5.6 nH
③	1.8 nH

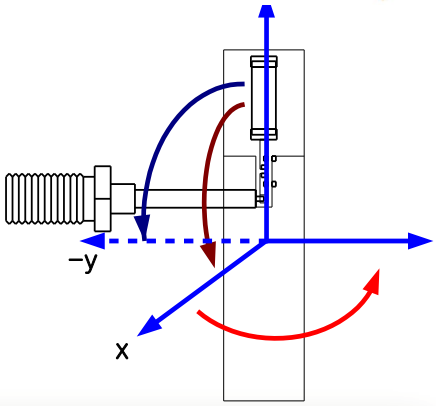


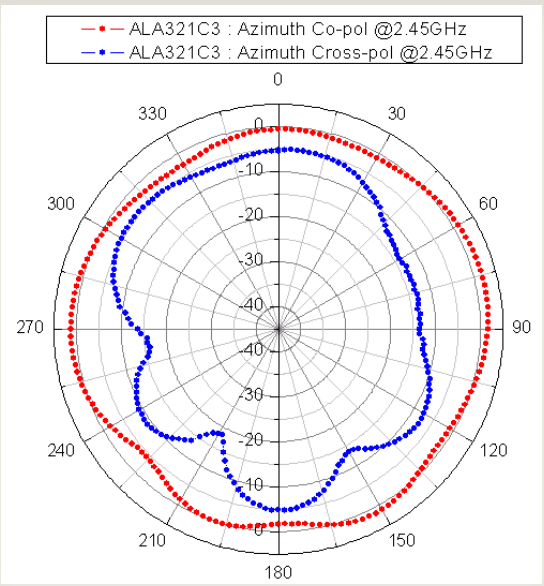


✓ The results are measured on the 10x43mm^2 evaluation board(EVB).

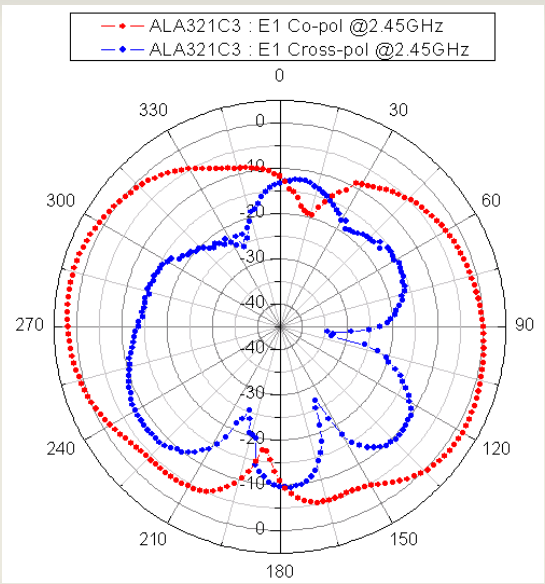
3.2 Typical Measurement Result (Gain, Radiation Pattern)

	Peak Gain (dBi)	Avg. Gain (dBi)	Total Avg. Gain (dBi)	Efficiency (%)
Azimuth	2.0	-0.2	-0.6	84
Elevation 1	2.3	-1.8		
Elevation 2	0.9	-2.7		

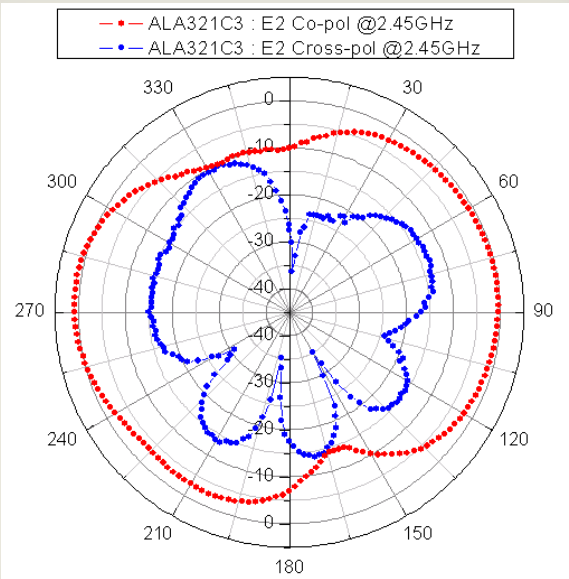




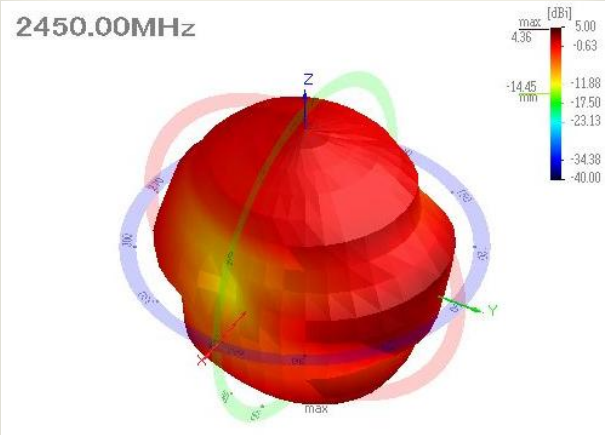
[Azimuth plane @2.45GHz]



[Elevation1 plane @2.45GHz]

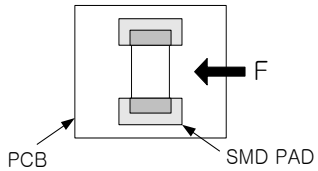


[Elevation2 plane @2.45GHz]

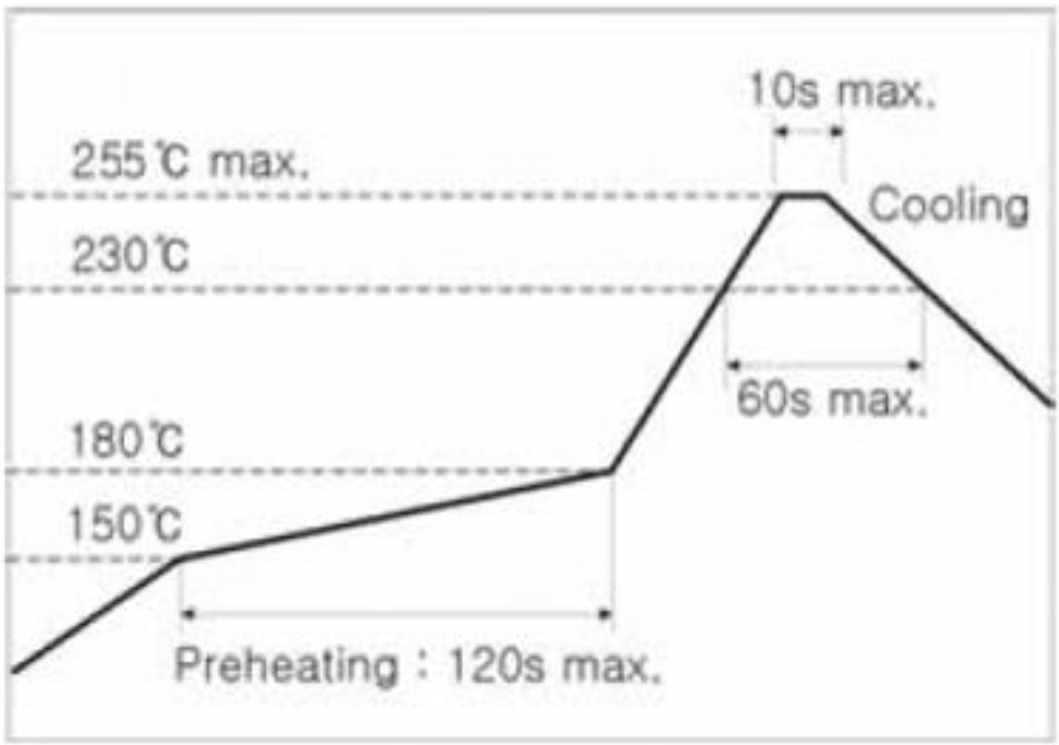


[3D Radiation Pattern]

4. Reliability

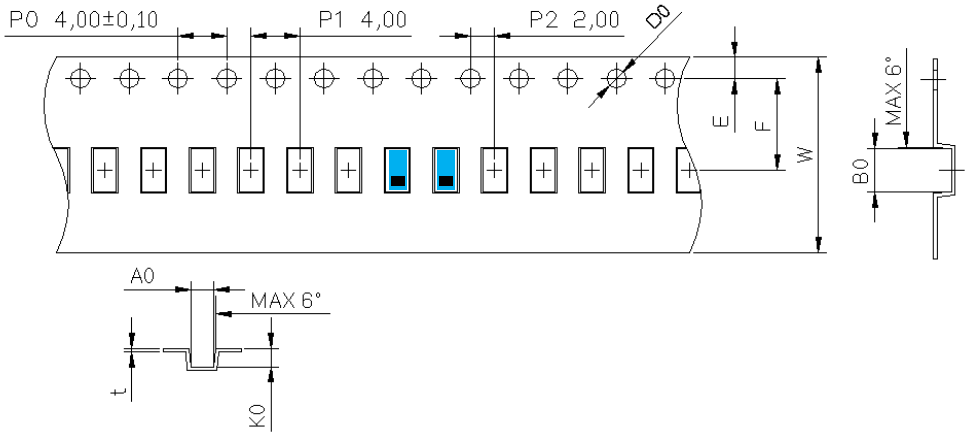
No	Item	Test Condition	Test Requirements
1	Adhesive Strength of Termination	1. Applied force on SMT chip till detached point from PCB. 	1. No mechanical damage by applied force 2. Strength (F) > 3 kgf
2	Thermal Shock (Cycle)	1. Step 1 : -40 ± 3℃, 30 min Step 2 : +125 ± 3℃, 30 min 2. Number of cycle : 30	1. No visual damage 2. Within electric spec (VSWR)
3	High Temperature Resistance	1. Temperature : +125 ± 5℃ 2. Time : 1000 ± 24 hrs	1. No visual damage 2. Within electric spec (VSWR)
4	Low Temperature Resistance	1. Temperature : -40 ± 5℃ 2. Time : 1000 ± 24 hrs	1. No visual damage 2. Within electric spec (VSWR)
5	Humidity	1. Humidity : 85 % RH Temperature : +85 ± 3℃ 2. Time : 1000 ± 24 hrs	1. No visual damage 2. Within electric spec (VSWR)

5. Soldering Reflow Profile



6. Packaging

6.1 Carrier Tape Dimension



Item	Spec.	Item	Spec.	Item	Spec.
A0	1.90±0.10	P0	4.00 ±0.10	E	1.75±0.10
B0	3.50±0.10	P1	4.00 ±0.10	F	7.50±0.10
K0	1.50±0.10	P2	2.00 ±0.10	W	16.00±0.30
D0	1.55±0.05	-	-	t	0.30±0.05

6.2 Packaging Quantity

Item	Quantity	Dimension
Reel	2,000ea	Φ7" * 12mm
Inner Box	6,000ea (3 reel)	185 * 185 * 68 (mm^3)
Outer Box1	30,000ea (5 Inner Box)	375 * 200 * 205 (mm^3)
Outer Box2	60,000ea (10 Inner Box)	390 * 375 * 205 (mm^3)