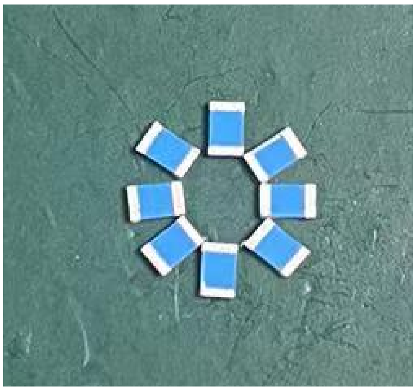
2.4GHz 2012 Chip Antenna: AAN2012F0P2G45



Application:

WLAN, 802.11b/g, Bluetooth, etc…

Features

SMD, high reliability, ultra Impact, Omni-directional…

Part number

AAN	2012	F0	P	2G45
(1)	(2)	(3)	(4)	(5)

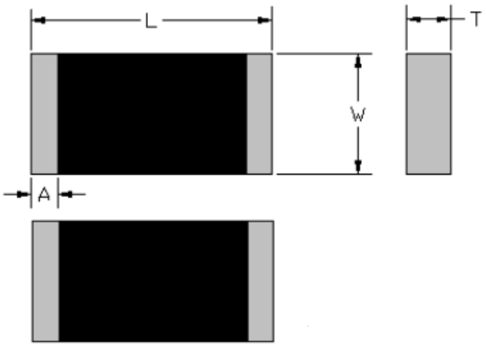
(1)Product Type	Chip Antenna
(2)Size Code	2.0x1.2mm
(3)Type Code	F0
(4)Packing	Paper &Reel
(5)Frequency	2.45GHz
(6)Internal code	

Electrical Specification

Working Frequency Range	2400 ~2483MHz
Peak Gain	1.32 dBi (Typ.)
Impedance	50 Ohm
Return loss	10 dB (Min)
Polarization	Linear
Azimuth Beamwidth	Omni-directional
Operation Temperature(℃)	-40 ~85℃

The specification is defined on EVB.

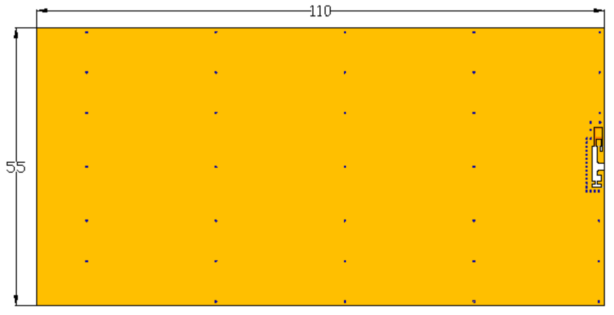
Dimension and Terminal Configuration



Dimension (mm)	
L	2.05+-0.15
W	1.20+-0.15
T	0.50+-0.10
A	0.20+-0.10

Evaluation Board Reference

PCB Dimension

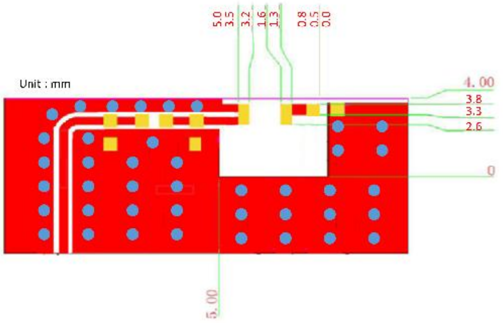


Unit :mm

Antenna Layout Reference

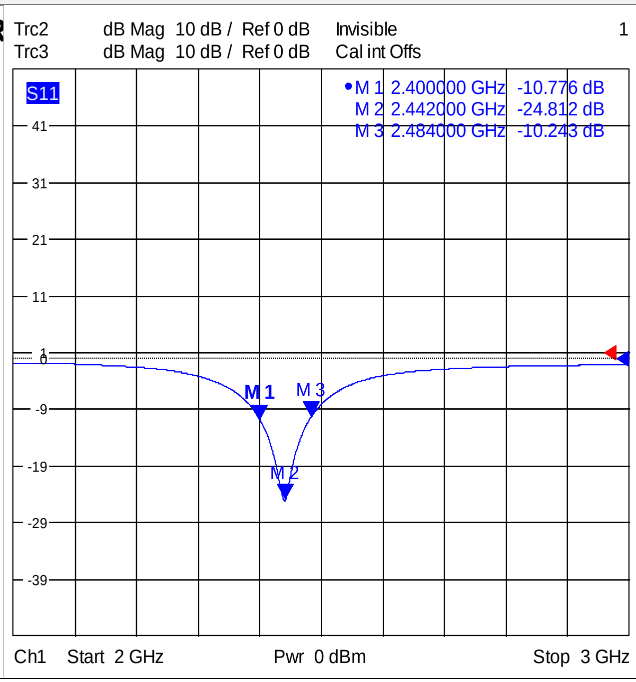
2). PCB Top View :

Type1 :



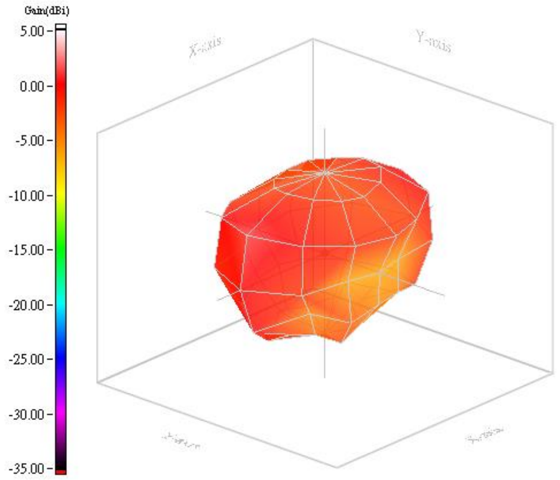
Electrical Characteristics

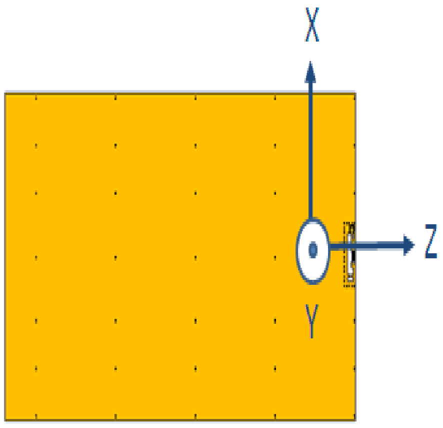
Return Loss & Radiation



Frequency (MHz)	S11 (dB)
2400	-10.78
2442	-24.81
2484	-10.24

Radiation

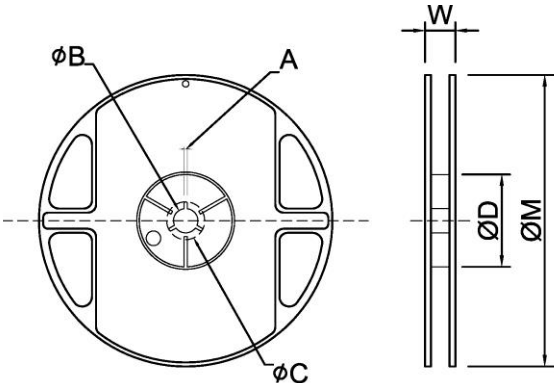




Taping Specifications

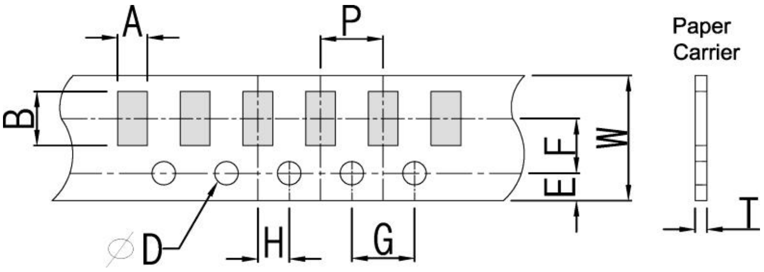
Reel and Taping Specification

Reel Specification



TYPE	SIZE		A	ϕB	ϕC	ϕD	W	ϕM
2012	7”	5K/Reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0

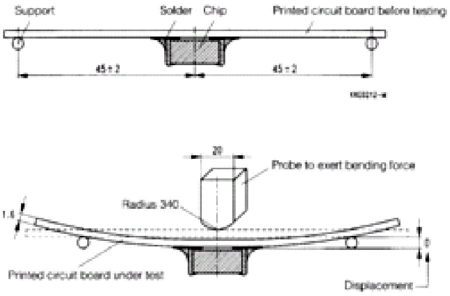
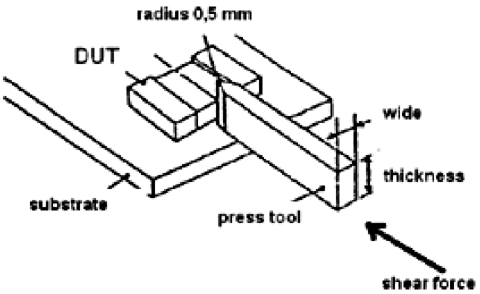
Tapping Specification



Packaging	Type	A	B	W	E	F	G	H	T	ϕD	P
Paper Type	2012	1.90±0.20	3.50±0.20	8.0±0.20	1.75±0.10	3.5±0.05	4.0±0.10	2.0±0.05	0.75±0.10	$1.50^{+0.10}_{-0}$	4.0±0.1

Reliability Table

Test Item	Procedure	Requirements Ceramic Type	Remark (Reference)
Electrical Characterization		Fulfill the electrical specification	User Spec.
Thermal Shock	1. Preconditioning: 50 ± 10℃ / 1 hr , then keep for 24 ± 1 hrs at room temp. 2. Initial measure: Spec: refer Initial spec. 3. Rapid change of temperature test: -30℃ to +85℃; 100 cycles; 15 minutes at Lower category temperature; 15 minutes at Upper category temperature.	No Visible Damage. Fulfill the electrical specification.	MIL-STD-202 107
Temperature Cycling	1. Initial measure: Spec: refer Initial spec. 2. 100 Cycles (-30℃ to +85℃), Soak Mode=1 (2 Cycle/hours). 3. Measurement at 24 ± 2Hours after test condition.	No Visible Damage. Fulfill the electrical specification.	JESD22 JA104
High Temperature Exposure	1. Initial measure: Spec: refer Initial spec. 2. Unpowered; 500hours @ T=+85℃. 3. Measurement at 24 ± 2 hours after test.	No Visible Damage. Fulfill the electrical specification.	MIL-STD-202 108
Low Temperature Storage	1. Initial measure: Spec: refer Initial spec. 2. Unpowered: 500hours @ T= -30℃. 3. Measurement at 24 ± 2 hours after test.	No Visible Damage. Fulfill the electrical specification.	MIL-STD-202 108
Solderability (SMD Bottom Side)	Dipping method: a. Temperature: 235 ± 5°C b. Dipping time: 3 ± 0.5s	The solder should cover over 95% of the critical area of bottom side.	IEC 60384-21/22 4.10
Soldering Heat Resistance (RSH)	Preheating temperature: 150 ± 10°C. Preheating time: 1~2 min. Solder temperature: 260 ± 5°C. Dipping time: 5 ± 0.5s	No Visible Damage.	IEC 60384-21/22 4.10
Vibration	5g's for 20 min., 12 cycles each of 3 orientations Note: Use 8"X5" PCB .031" thick 7 secure points on, one long side and 2 secure points at corners of opposite sides. Parts mounted within 2" from any secure point. Test from 10-2000 Hz.	No Visible Damage.	MIL-STD-202 Method 204
Mechanical Shock	Three shocks in each direction shall be applied along the three mutually perpendicular axes of the test specimen (18 shocks) Peak value: 1,500g's Duration: 0.5ms Velocity change: 15.4 ft/s Waveform: Half-sine	No Visible Damage.	MIL-STD-202 Method 213
Humidity Bias	1. Humidity: 85% R.H., Temperature: 85 ± 2 °C. 2. Time: 500 ± 24 hours. 3. Measurement at 24 ± 2hrs after test condition.	No Visible Damage. Fulfill the electrical specification.	MIL-STD-202 Method 106

<table>
<tr>
<td>Board
Flex
(SMD)</td>
<td>1. Mounting method:
IR-Reflow. PCB Size (L:100 × W:40 × T:1.6mm)
2. Apply the load in direction of the arrow until bending reaches 2 mm.
 </td>
<td>No Visible Damage.</td>
<td>AEC-Q200
005</td>
</tr>
<tr>
<td>Adhesion</td>
<td>Force of 1.8Kg for 60 seconds.
 </td>
<td>No Visible Damage
Magnification of 20X or greater may be employed for inspection of the mechanical integrity of the device body terminals and body/terminal junction.</td>
<td>AEC-Q200
006</td>
</tr>
<tr>
<td>Physical
Dimension</td>
<td>Any applicable method using x10 magnification, micrometers, calipers, gauges, contour projectors, or other measuring equipment, capable of determining the actual specimen dimensions.</td>
<td>In accordance with specification.</td>
<td>JESD22
JB100</td>
</tr>
</table>

Revision History

Revision	Date	Content
1	2015/8/20	New issue
2	2017/4/20	Update detail dimension on antenna layout
3	2018/3/1	Part number and coding rule updated