

2.4GHz 2012 Chip Antenna:YL2012F1P2G45

Application:

WLAN, 802.11b/g, Bluetooth, etc...

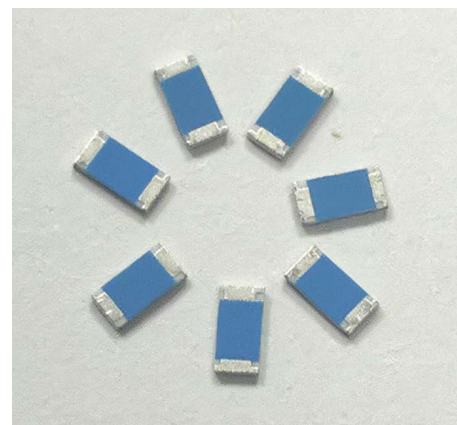
Features

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

Part number

YL 2012 - F1 P 2G45
(1) (2) (3) (4) (5)

(1)Product Type	Chip Antenna
(2)Size Code	2.0x1.2mm
(3)Type Code	F1
(4)Packing	Paper Tape
(5)Frequency	2.45GHz

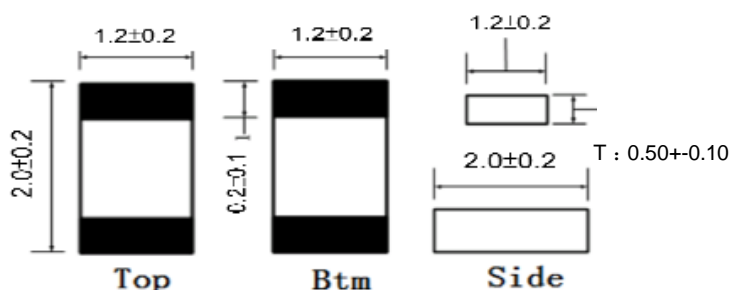


Electrical Specification

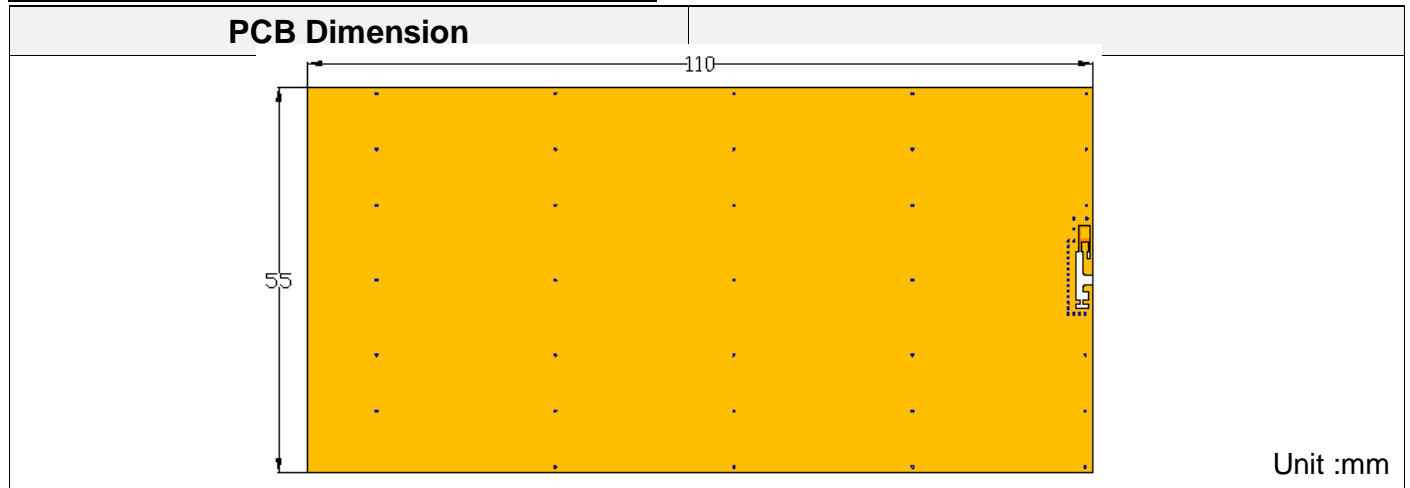
Working Frequency Range	2400 ~2484 MHz
Peak Gain	2.58dBi (Typ.)
Impedance	50 Ohm
Return loss	10 dB (Min)
Polarization	Linear
Azimuth Beamwidth	Omni-directional
Operation Temperature(°C)	-40 ~85°C

The specification is defined on EVB.

Dimension and Terminal Configuration



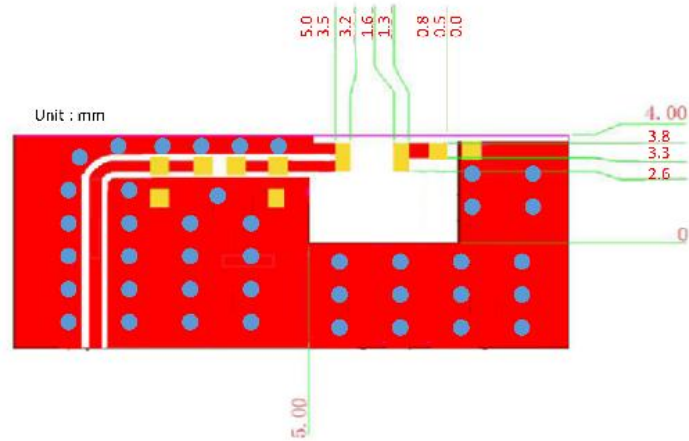
Evaluation Board Reference



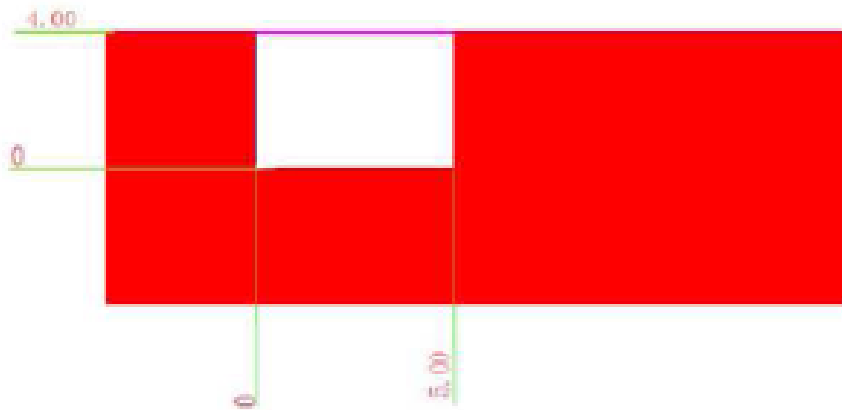
Electrical Characteristics

2). PCB Top View :

Type1 :



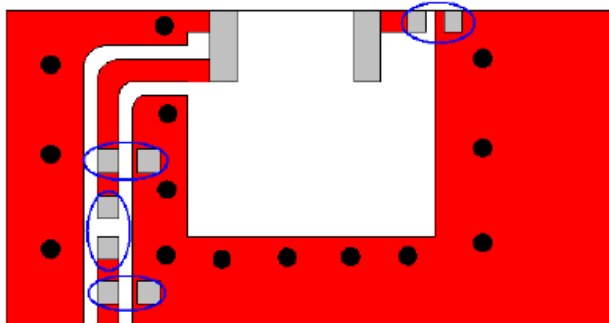
Unit : mm



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Evaluation Board Reference

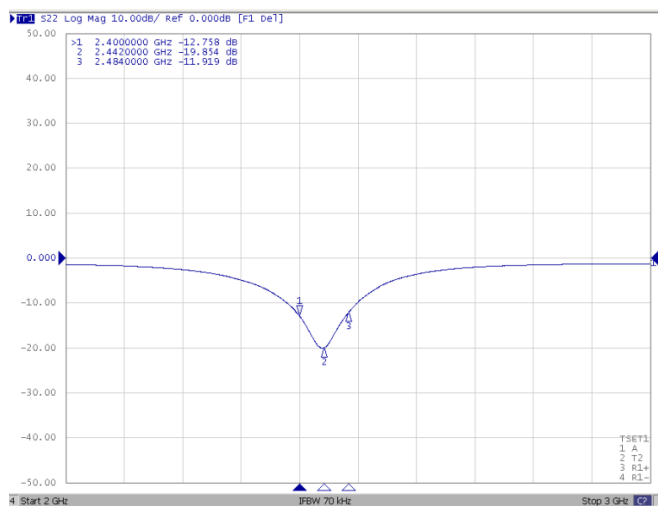
PCB Dimension & Antenna Layout Reference



Electrical Characteristics

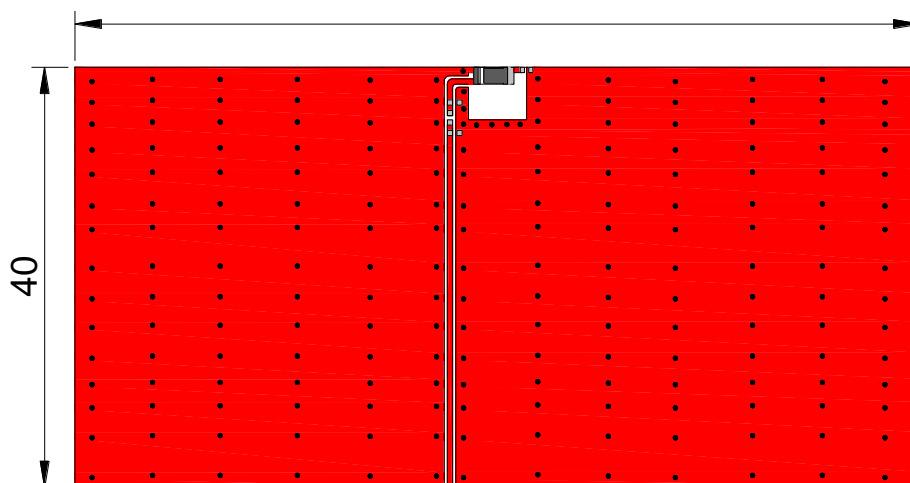
Return Loss & Radiation

Return Loss

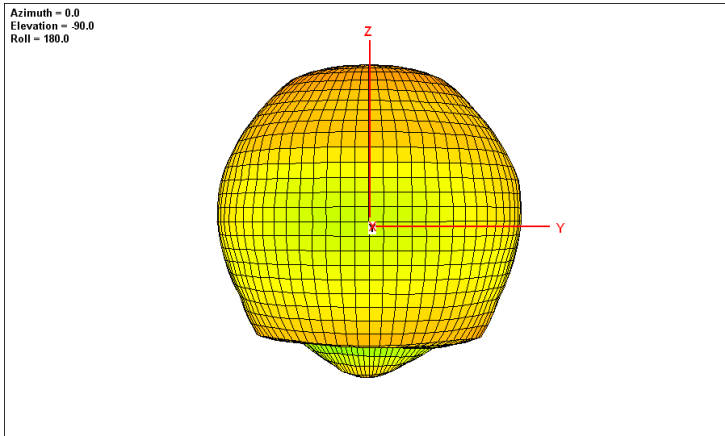


Frequency (MHz)	S11 (dB)
2400	-12.8
2442	-19.8
2484	-11.9

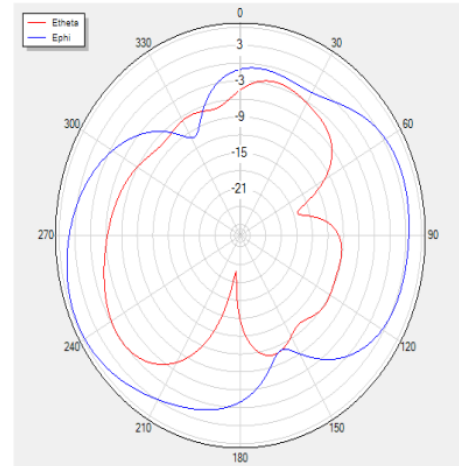
Test Board with Antenna



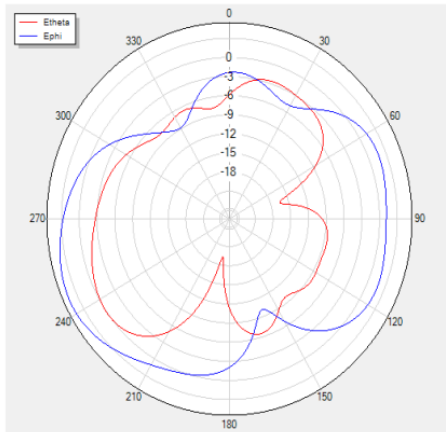
3D&2D Radiation Drawing



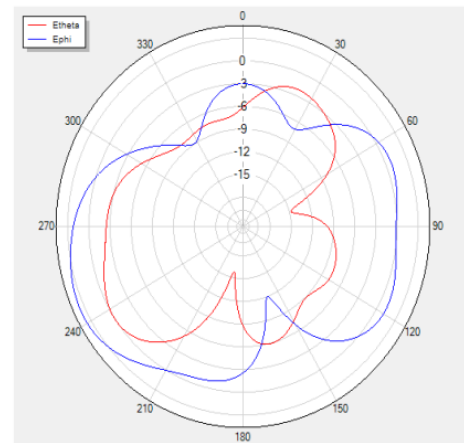
H Theta=90 freq=2400MHz



H Theta=90 freq=2450MHz



H Theta=90 freq=2480MHz

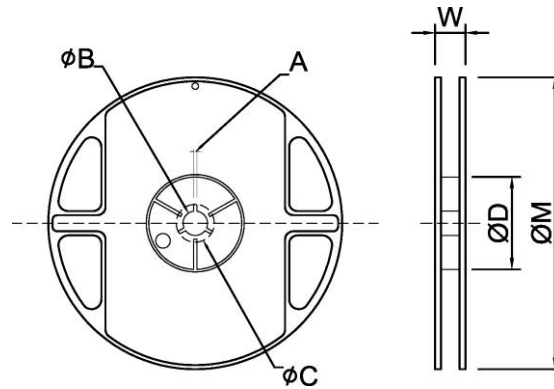


Frequency(MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Efficiency (dB)	-1.4	-1.0	-0.9	-0.7	-0.7	-0.8	-0.9	-1.1	-1.2	-1.3	-1.4
Efficiency (%)	72.8	73.7	74.3	74.4	75.5	75.0	74.0	73.6	73.1	72.6	71.5
Gain (dBi)	2.15	2.24	2.30	2.41	2.58	2.56	2.42	1.95	1.86	1.67	1.68

Taping Specifications

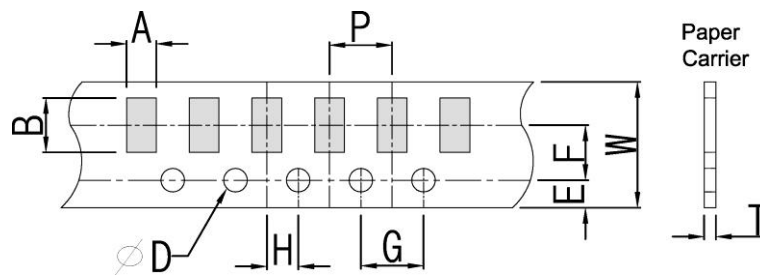
Reel and Taping Specification

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

Taping Specification

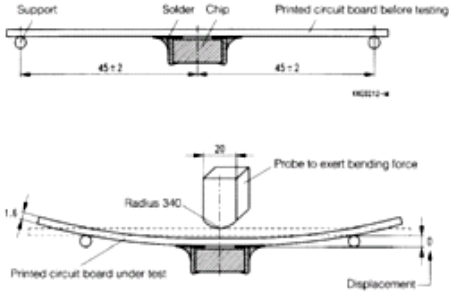
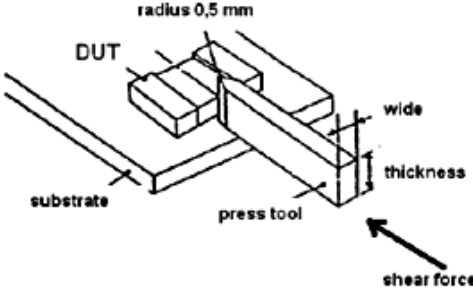


Packaging	Type	A	B	W	E	F	G	H	T	ϕD	P
Paper Type	2012	1.90±0.20	3.50±0.20	8.0±0.20	1.75±0.10	3.5±0.05	4.0±0.10	2.0±0.05	0.75±0.10	1.50 +0.10 -0	4.0±0.1

Reliability Table

Test Item	Procedure	Requirements Ceramic Type	Remark (Reference)
Electrical Characterization		Fulfill the electrical specification	User Spec.
Thermal Shock	1. Preconditioning: $50 \pm 10^\circ\text{C}$ / 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°C to $+85^\circ\text{C}$; 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°C to $+85^\circ\text{C}$), Soak Mode=1 (2 Cycle/hours). 3. Measurement at 24 ± 2 Hours 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 @ $T=+85^\circ\text{C}$. 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 @ $T= -30^\circ\text{C}$. 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: $235 \pm 5^\circ\text{C}$ b. Dipping time: $3 \pm 0.5\text{s}$	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: $150 \pm 10^\circ\text{C}$. Preheating time: 1~2 min. Solder temperature: $260 \pm 5^\circ\text{C}$. Dipping time: $5 \pm 0.5\text{s}$	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: $85 \pm 2^\circ\text{C}$. 2. Time: 500 ± 24 hours. 3. Measurement at 24 ± 2 hrs after test condition.	No Visible Damage. Fulfill the electrical specification.	MIL-STD-202 Method 106

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<p>Board Flex (SMD)</p>	<p>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.</p> 	<p>No Visible Damage.</p>	<p>AEC-Q200 005</p>
<p>Adhesion</p>	<p>Force of 1.8Kg for 60 seconds.</p> 	<p>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.</p>	<p>AEC-Q200 006</p>
<p>Physical Dimension</p>	<p>Any applicable method using x10 magnification, micrometers, calipers, gauges, contour projectors, or other measuring equipment, capable of determining the actual specimen dimensions.</p>	<p>In accordance with specification.</p>	<p>JESD22 JB100</p>

Revision History

Revision	Date	Content
1	2022/1/20	New issue