

## 2.4GHz Chip Antenna: YL5022H1R2G45

### Application:

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

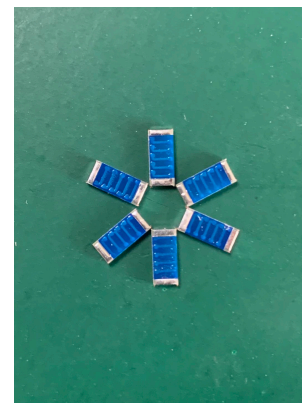
### Features

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

### Part number

YL 5022 H1 R 2G45  
 (1) (2) (3) (4) (5)

(1) Product Type	Chip Antenna
(2) Size Code	5.0x2.0mm
(3) Type Code	H1
(4) Packing	Tape and reel
(5) Frequency	2.45GHz

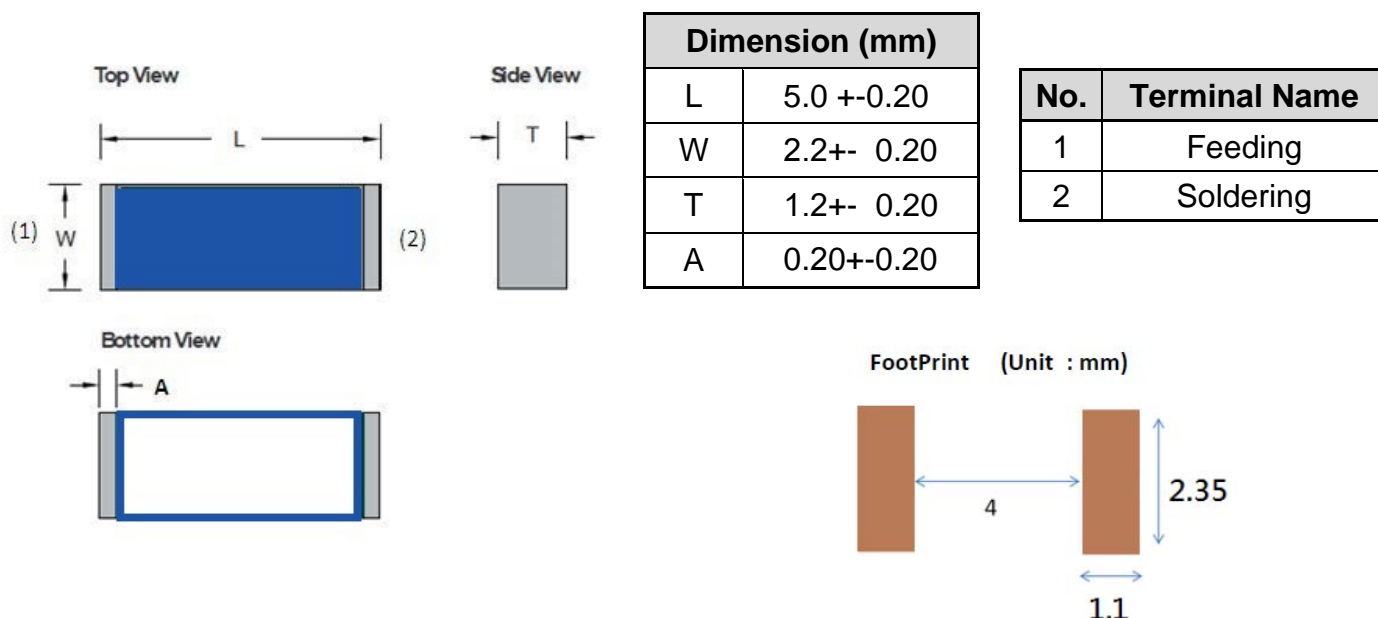


### Electrical Specification

Working Frequency Range	2400 ~2484 MHz
Peak Gain	3.5dBi (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.

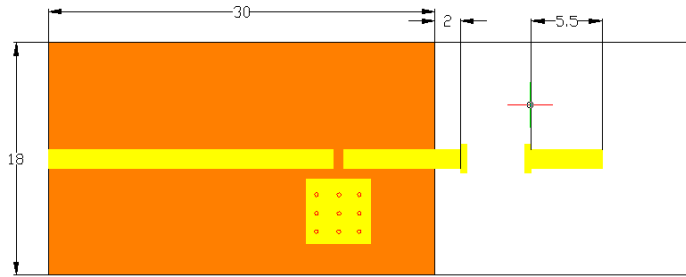
### Dimension and Terminal Configuration



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## Evaluation Board Reference

### PCB Dimension & Antenna Layout Reference

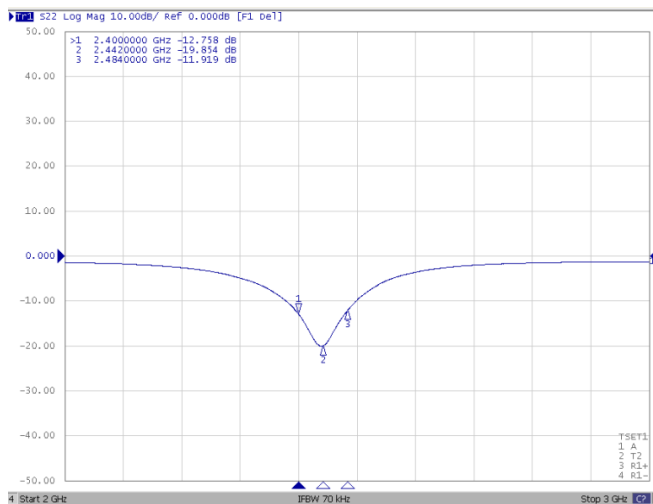


unit :mm

## Electrical Characteristics

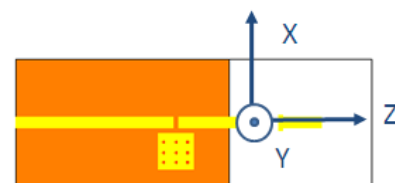
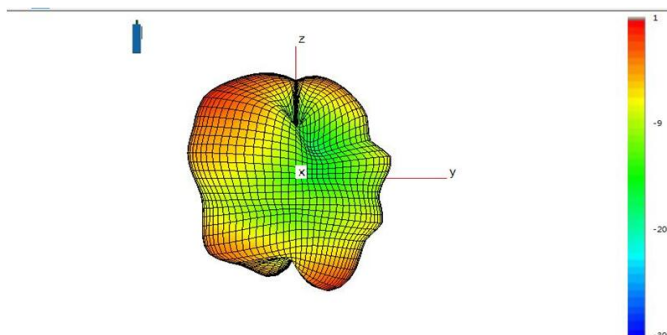
### Return Loss & Radiation

#### Return Loss



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

#### Radiation

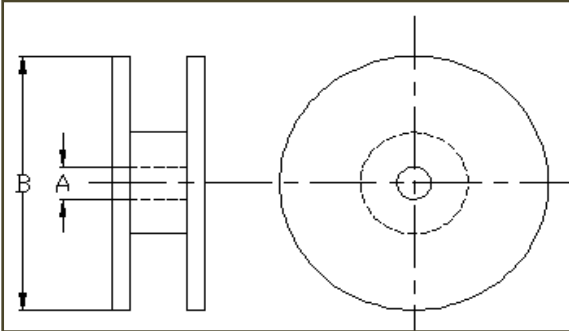
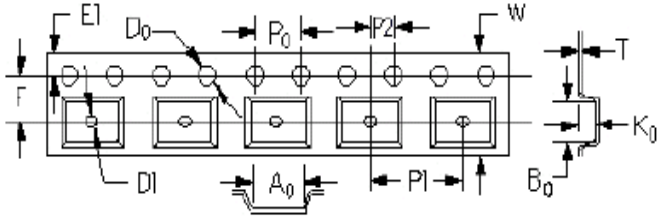


#### 2.45GHz

Frequency	2445MHz
Peak gain	3.5dBi
Efficiency	80.2%

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### Taping Specifications

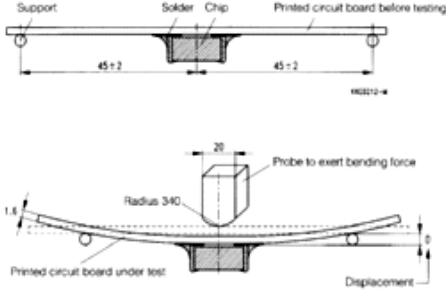
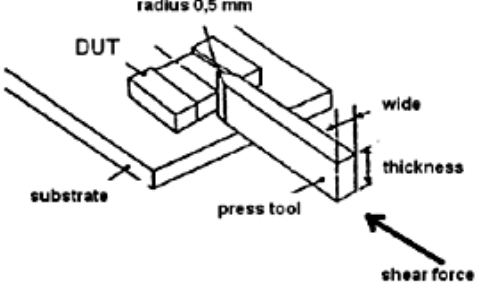
Reel		Taping Blister Tape	
			
Checking note	Index	Spec (mm)	
Internal diameter of reel	A	$60.20 \pm 0.50$	
External diameter of reel	B	$178 \pm 1.00$	
Quantity/per reel	3000 pcs		
Tape material	Plastic (embossed)		
Checking note	Index	Spec (mm)	
Sprocket hole	D0	$1.50 +0.10/-0.00$	
Distance sprocket hole to outside	E1	$1.75 \pm 0.10$	
Distance sprocket hole to pocket	F	$5.50 \pm 0.05$	
Distance sprocket hole to sprocket hole	P0	$4.00 \pm 0.10$	
Distance pocket to pocket	P1	$4.00 \pm 0.10$	
Distance sprocket hole to pocket	P2	$2.00 \pm 0.05$	
Tape width	W	$12.00 +0.30/-0.10$	
Pocket width nominal clearance	A0	$2.28 \pm 0.13$	
Pocket length nominal clearance	B0	$5.70 \pm 0.13$	
Pocket depth minimum clearance	K0	$1.58 \pm 0.10$	
Thickness of tape	T	$0.23 \pm 0.02$	

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### Reliability Table

Test Item	Procedure	Requirements Ceramic Type	Remark (Reference)
<b>Electrical Characterization</b>		Fulfill the electrical specification	User Spec.
<b>Thermal Shock</b>	1. Preconditioning: $50 \pm 10^\circ\text{C}$ / 1 hr , then keep for $24 \pm 1$ hrs at room temp. 2. Initial measure: Spec: refer Initial spec. 3. Rapid change of temperature test: $-30^\circ\text{C}$ 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
<b>Temperature Cycling</b>	1. Initial measure: Spec: refer Initial spec. 2. 100 Cycles ( $-30^\circ\text{C}$ to $+85^\circ\text{C}$ ), Soak Mode=1 (2 Cycle/hours). 3. Measurement at $24 \pm 2$ Hours after test condition.	No Visible Damage. Fulfill the electrical specification.	JESD22 JA104
<b>High Temperature Exposure</b>	1. Initial measure: Spec: refer Initial spec. 2. Unpowered; 500hours @ $T=+85^\circ\text{C}$ . 3. Measurement at $24 \pm 2$ hours after test.	No Visible Damage. Fulfill the electrical specification.	MIL-STD-202 108
<b>Low Temperature Storage</b>	1. Initial measure: Spec: refer Initial spec. 2. Unpowered: 500hours @ $T= -30^\circ\text{C}$ . 3. Measurement at $24 \pm 2$ hours after test.	No Visible Damage. Fulfill the electrical specification.	MIL-STD-202 108
<b>Solderability (SMD Bottom Side)</b>	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
<b>Soldering Heat Resistance (RSH)</b>	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
<b>Vibration</b>	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
<b>Mechanical Shock</b>	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
<b>Humidity Bias</b>	1. Humidity: 85% R.H., Temperature: $85 \pm 2^\circ\text{C}$ . 2. Time: $500 \pm 24$ hours. 3. Measurement at $24 \pm 2$ hrs after test condition.	No Visible Damage. Fulfill the electrical specification.	MIL-STD-202 Method 106

## 2.4GHz 2.45HHz Chip Antenna: YL5022H1R2G45

<b>Board Flex (SMD)</b>	<p>1. Mounting method: IR-Reflow. PCB Size (L:100 × W:40 × T:1.6mm)</p> <p>2. Apply the load in direction of the arrow until bending reaches 2 mm.</p> 	No Visible Damage.	AEC-Q200 005
<b>Adhesion</b>	<p>Force of 1.8Kg for 60 seconds.</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.	AEC-Q200 006
<b>Physical Dimension</b>	<p>Any applicable method using x10 magnification, micrometers, calipers, gauges, contour projectors, or other measuring equipment, capable of determining the actual specimen dimensions.</p>	In accordance with specification.	JESD22 JB100

### Revision History

Revision	Date	Content
1	2019/7/20	New issue