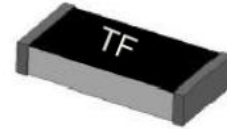


2.4GHz 2012 Chip Antenna: RF201221



Application:

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



Features

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

Part number

RF 2012 2 1
(1) (2) (3) (4)

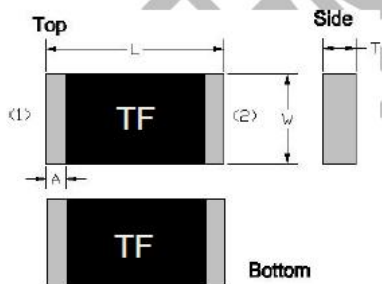
(1)Product Type	Chip Antenna
(2)Size Code	2.0x1.2mm
(3)Frequency	2.45GHz
(4)Internal code	1

Electrical Specification

Working Frequency Range	2400 ~2484 MHz
Peak Gain	1.06 dBi (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



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

No.	Terminal Name
1	Feeding/GNG
2	GND/Feeding

P.S : Top & down and left & right side are symmetrical, No direction

Manufacturer: Shenzhen Yongcheng International Technology Co., LTD

Address: Room 611, Building F, Yuxing Science and Technology Industrial Park, Baoan District, Shenzhen, Guangdong

Evaluation Board Reference

PCB Dimension	Antenna Layout Reference
Unit :mm	Unit :mm

Electrical Characteristics

Return Loss & Radiation									
<p>Trc2 dB Mag 10 dB / Ref 0 dB Invisible 1</p> <p>Trc3 dB Mag 10 dB / Ref 0 dB Cal int Offs</p> <p>S11</p> <ul style="list-style-type: none"> • M 1 2.400000 GHz -10.776 dB • M 2 2.442000 GHz -24.812 dB • M 3 2.484000 GHz -10.243 dB <p>Ch1 Start 2 GHz Pwr 0 dBm Stop 3GHz</p>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 50%; height: 20px;"> </td> <td style="width: 50%;"> </td> </tr> <tr> <td>2400</td> <td>-10.78</td> </tr> <tr> <td>2442</td> <td>-24.81</td> </tr> <tr> <td>2484</td> <td>-10.24</td> </tr> </table>			2400	-10.78	2442	-24.81	2484	-10.24
2400	-10.78								
2442	-24.81								
2484	-10.24								

Radiation

Max gain= 1.06dBi, at (60, 0)

MEG(mean effective gain)=-2.35dBi

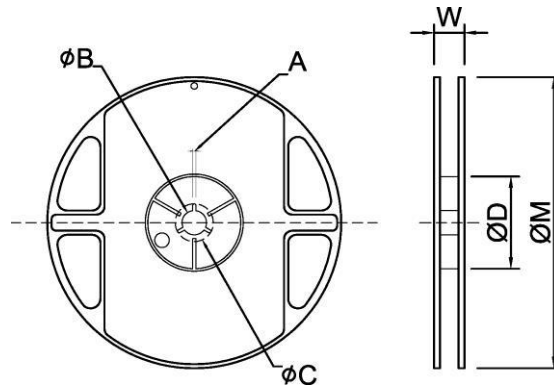
Directivity(dB)= 3.27

Efficiency=-2.21dB, 60.12%

Taping Specifications

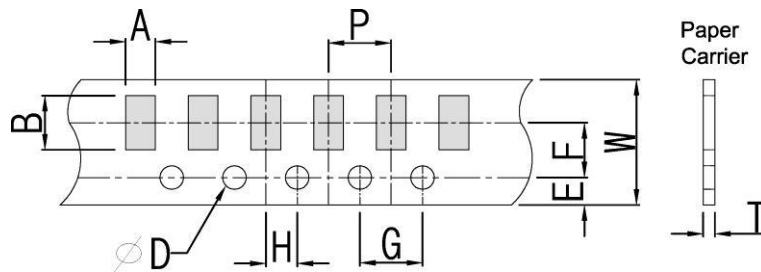
Reel and Taping Specification

Reel Specification



TYPE	SIZE		A	ψB	ψC	ψD	W	ψM
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

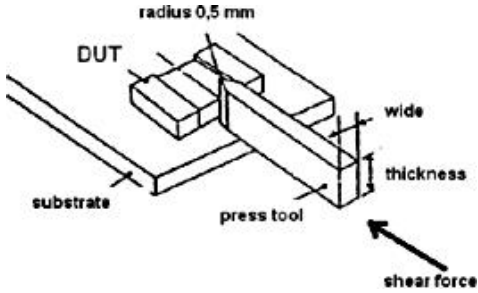


Packaging	Type	A	B	W	E	F	G	H	T	ψD	P
Paper Type	3216	1.90 ± 0.20	3.50 ± 0.20	8.0 ± 0.20	1.75 ± 0.10	3.5 ± 0.05	4.0 ± 0.10	2.0 ± 0.05	0.75 ± 0.10	$1.50^{+0.10}_{-0}$	4.0 ± 0.1

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 Initialspec. 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 Initialspec. 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 Initialspec. 2. Unpowered; 500hours @ $T=+85^{\circ}\text{C}$. 3. Measurement at 24 ± 2 hours aftertest.	No Visible Damage. Fulfill the electrical specification.	MIL-STD-202 108
Low Temperature Storage	1. Initial measure: Spec: refer Initialspec. 2. Unpowered: 500hours @ $T=-30^{\circ}\text{C}$. 3. Measurement at 24 ± 2 hours aftertest.	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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Board Flex (SMD)	<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>	<p>No Visible Damage.</p>	<p>AEC-Q200 005</p>
Adhesion	<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>
Physical Dimension	<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	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