

Shenzhen Hengxiangtong Antenna Technology Co., Ltd.

|                   |                |                |                 |
|-------------------|----------------|----------------|-----------------|
| CUSTOMER          |                | 奔啦啦            |                 |
| CS P/N            |                | ABGCOM-00192   |                 |
| HX P/N            |                | 3216F245C02    |                 |
| Checked by(RF)    | Checked by(ME) | Checked by(QA) | Approval led by |
|                   |                |                |                 |
| Customer Approval |                |                |                 |

## 2.4GHz 3216 Chip Antenna: FH200A

### Application:

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

### Features

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



### Part number Information

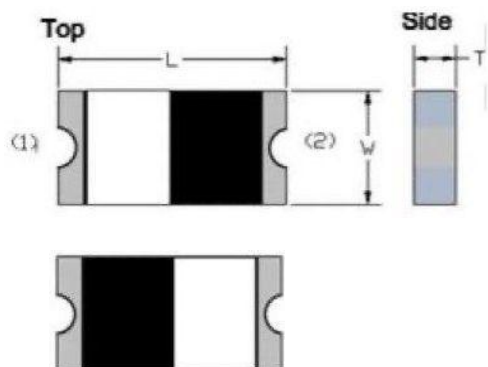
|              |                      |
|--------------|----------------------|
| Product Type | Ceramic Antenna      |
| Size Code    | 3.2x1.6mm(±0.2mm)    |
| Material     | High K material      |
| Frequency    | 2.4~2.5GHz           |
| Feeding mode | PIFA& Single Feeding |
| Antenna type | Type=0X              |

### Electrical Specification

|                               |                  |
|-------------------------------|------------------|
| Working Frequency Range       | 2400~2500 MHz    |
| Bandwidth                     | 120 MHz(Min.)    |
| Peak Gain                     | 1.25 dBi(Typ.)   |
| Impedance                     | 50 Ohm           |
| Return loss                   | 10 dB(Min)       |
| Polarization                  | Linear           |
| Azimuth Beamwidth             | Omni-directional |
| Operation Temperature(°C)     | -40~85°C         |
| Resistance to Soldering Heats | 10sec.(@280°C)   |
| Termination                   | Ni/Au(Leadless)  |

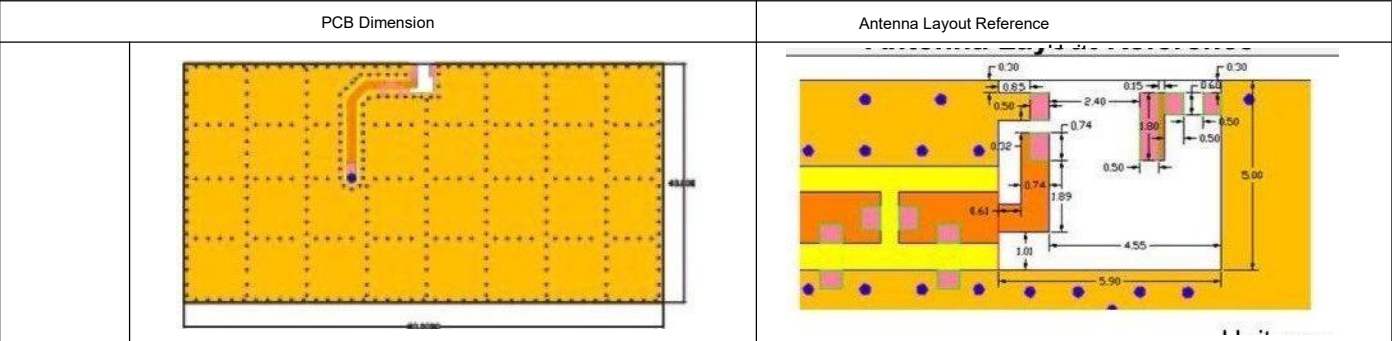
The specification is defined on EVB.

### Dimension and Terminal Configuration

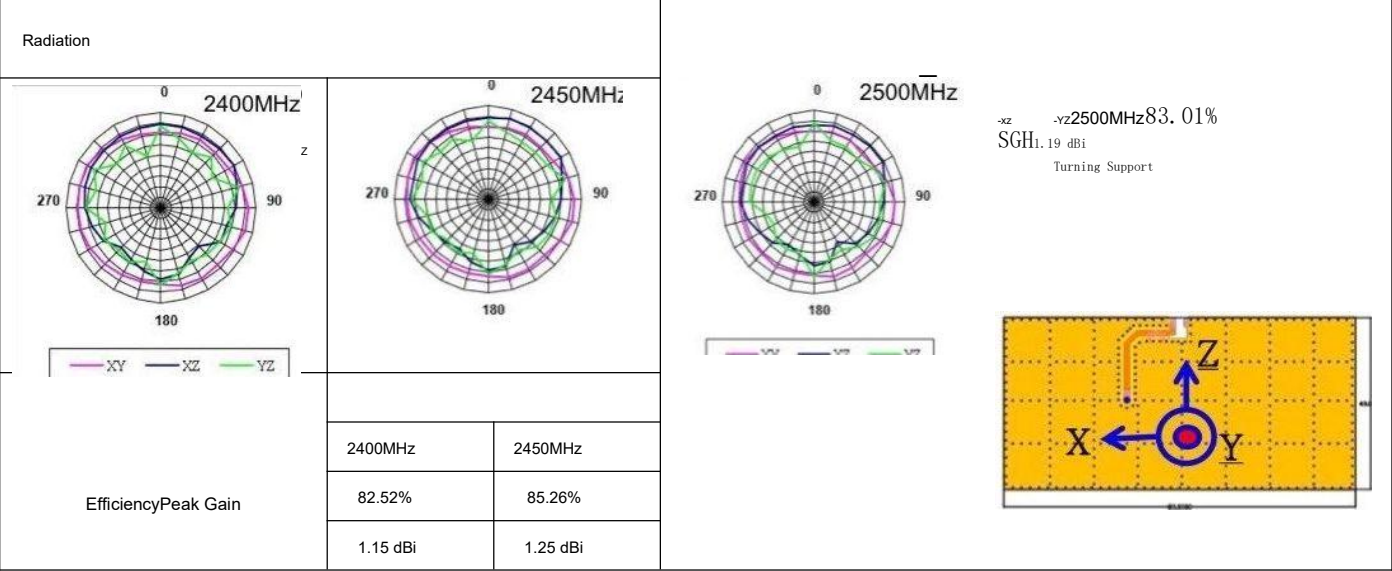
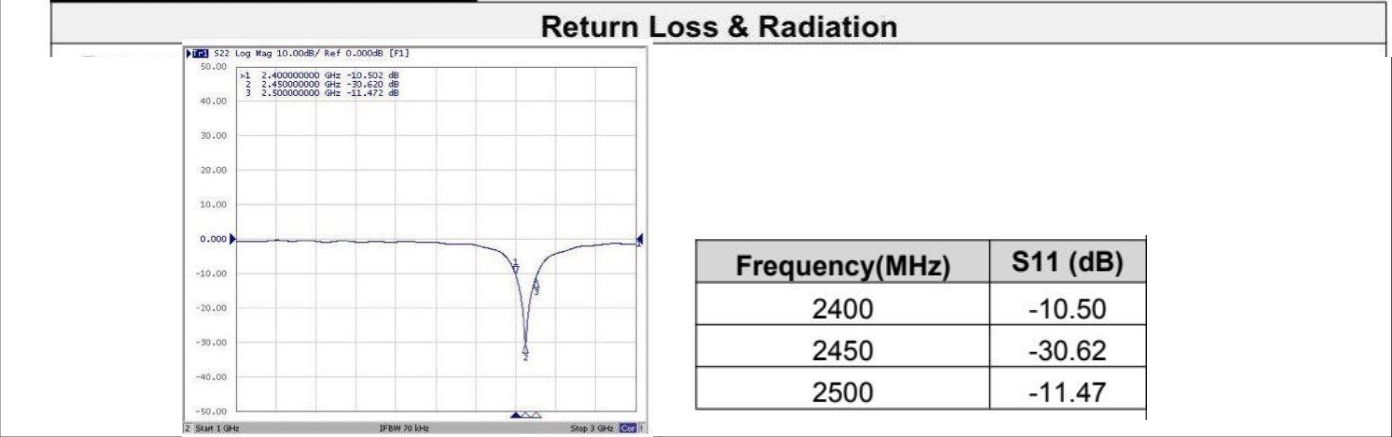
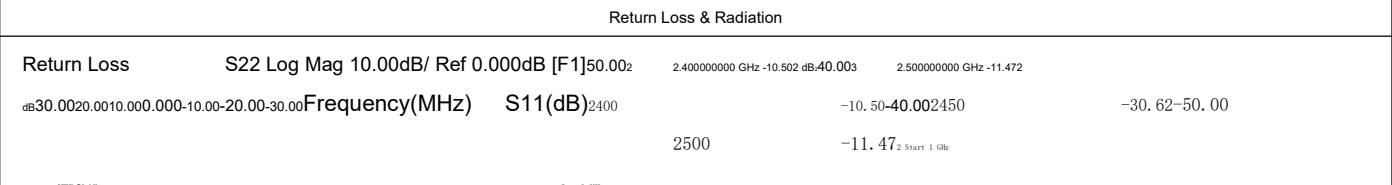


| Dimension(mm) |           |
|---------------|-----------|
| L             | 3.20±0.20 |
| W             | 1.60±0.20 |
| T             | 0.45±0.20 |

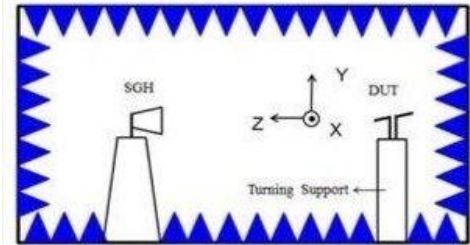
| No. | Terminal Name |
|-----|---------------|
| 1   | Feeding/GNG   |
| 2   | GND/Feeding   |



Electrical Characteristics

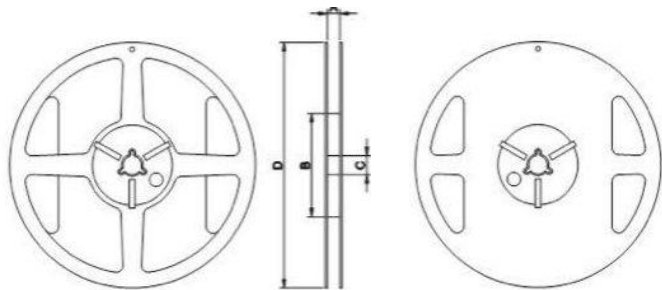


|             | 2400MHz  | 2450MHz  | 2500MHz  |
|-------------|----------|----------|----------|
| Efficiency  | 82.52%   | 85.26%   | 83.01%   |
| Peak Gain   | 1.15 dBi | 1.25 dBi | 1.19 dBi |
| Directivity | 1.89 dBi | 1.97 dBi | 1.91 dBi |



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Taping Specifications

| Reel and Taping Specification                                                      |      |        |         |         |      |          |       |
|------------------------------------------------------------------------------------|------|--------|---------|---------|------|----------|-------|
| Reel Specification                                                                 |      | 07x8mm |         |         |      |          |       |
|  |      |        |         |         |      |          |       |
|                                                                                    | TYPE | SIZE   |         | A       | B    | C        | D     |
|                                                                                    | 3216 | 7"     | 5K/Reel | 9.0±0.5 | 60±2 | 13.5±0.5 | 178±2 |

Tapping Specification

A

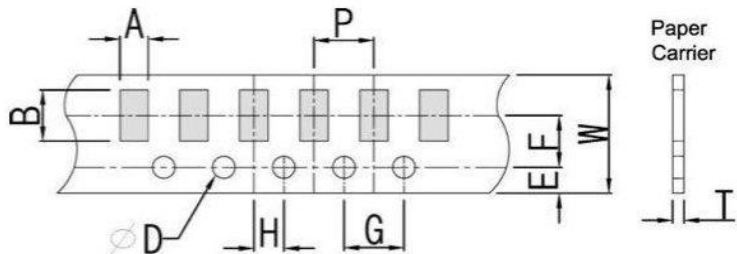
P

Paper Carrier

B

HG

I



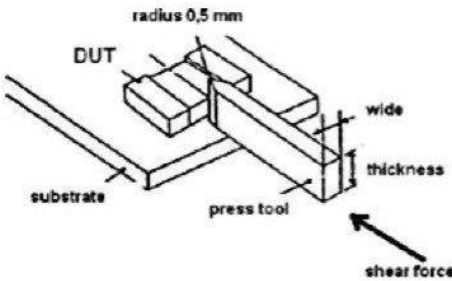
|            |      |           |           |          |           |          |          |          |           |           |         |
|------------|------|-----------|-----------|----------|-----------|----------|----------|----------|-----------|-----------|---------|
| Packaging  | Type | A         | B         | W        | E         | F        | G        | H        | T         | y/D       | 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 | 4.0±0.1 |

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### Reliability Table

| Test Item                      | Procedure                                                                                                                                                                                                                                                        | RequirementsCeramic Type                                            | Remark(Reference)     |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------|
| ElectricalCharacterization     |                                                                                                                                                                                                                                                                  | Fulfill the electricalspecification                                 | User Spec.            |
| ThermalShock                   | 1.Preconditioning:<br>50±10℃/1 hr, then keep for 24±1 hrs at room temp. 2. Initial measure:Spec:refer Initialspec. 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 electricalspecification.             | MIL-STD-202107        |
| TemperatureCycling             | 1.Initial measure: Spec:refer Initialspec.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 electricalspecification.              | JESD22JA104           |
| High TemperatureExposure       | 1.Initial measure: Spec:refer Initial spec.2.Unpowered;500hours@ T=+85℃3.Measurement at 24 ±2 hours aftertest.                                                                                                                                                   | No Visible Damage.Fulfill the electricalspecification.              | MIL-STD-202108        |
| Low TemperatureStorage         | 1.Initial measure: Spec: refer Initialspec.2.Unpowered:500hours @T=-30℃T=-30℃.3.Measurement at 24 ±2 hours aftertest.                                                                                                                                            | No Visible Damage. Fulfill the electricalspecification.             | MIL-STD-202108        |
| Solderability(SMD Bottom Side) | Dipping method:a.Temperature:235±5℃b.Dipping time:3±0.5s                                                                                                                                                                                                         | The solder should coverover 95% of the criticalarea of bottom side. | IEC 60384-21/224.10   |
| Soldering HeatResistance(RSH)  | Preheating temperature: 150 ± 10°0±10℃.Preheating time:1~2 min.Solder temperature:260 ±5℃.Dipping time:5±0.5s                                                                                                                                                    | No Visible Damage.                                                  | IEC 60384-21/224.10   |
| Vibration                      | 5g's for 20 min., 12 cycles each of 3 orientationsNote:Use 8"X5" PCB.031" thick 7 secure points on, one longside and 2 secure points at corners of opposite sides.Partsmounted within 2" from any secure point. Test from 10-2000Hz.                             | No Visible Damage.                                                  | MIL-STD-202Method 204 |
| MechanicalShock                | Three shocks in each direction shall be applied along the threemutually perpendicular axes of the test specimen (18 shocks)Peak value: 1,500g'sDuration:0.5msVelocity change:15.4 ft/sWaveform:Half-sine                                                         | No Visible Damage.                                                  | MIL-STD-202Method 213 |
| HumidityBias                   | 1.Humidity:85% R.H.,Temperature:85±2℃.2.Time:500±24 hours.3.Measurement at 24 ± 2hrs after test condition.                                                                                                                                                       | No Visible Damage.Fulfill the electricalspecification.              | MIL-STD-202Method 106 |

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|                   |                                                                                                                                                                                        |                                                                                                                                                                     |             |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| BoardFlex(SMD)    | 1. Mounting method:IR-Reflow.PCB Size (L:100 x W:40 x T:1.6mm)2. Apply the load in direction of the arrow until bending reaches2mm.                                                    | No Visible Damage.                                                                                                                                                  | AEC-Q200005 |
| Adhesion          | Force of 1.8Kg for 60 seconds.radius 0,5mmDUTthicknesssubstratepress toolshear force<br>             | No Visible DamageMagnification of 20X or greater may be employedfor inspection of the mechanical integrity of the device body terminals and body/terminal junction. | AEC-Q200006 |
| PhysicalDimension | Any applicable method using x10 magnification, micrometers, calipers, gauges, contour projectors, or other measuring equipment, capable of determining the actual specimen dimensions. | In accordance with specification.                                                                                                                                   | JESD22JB100 |

Revision History

| Revision | Date       | Content                         |
|----------|------------|---------------------------------|
| 1        | 2019/03/01 | New Datasheet                   |
| 2        | 2020/02/22 | Add 2D radiation characteristic |