

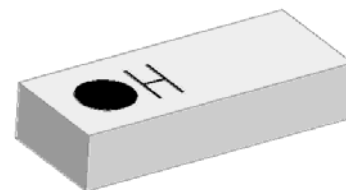
**Chip Antenna model: ANT5020R24001KM1****Application:**

Manufacturer: HEKANG ELECTRONICS CO.,LTD

Address: 1F C Buiding ORICO Internet Innovation Industrial Park,24th,tangjiao Road,  
Changping Town,Dongguan City, Guangdong Province,China

**Features**

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

**Part number**

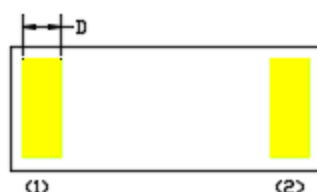
ANT 5020 R 2400 1K M1  
(1) (2) (3) (4) (5)

|                    |               |
|--------------------|---------------|
| (1) Size Code      | 5.0x2.0mm     |
| (2) Packing        | Tape and reel |
| (3) Frequency      | 2400MHz       |
| (4) Packing Number | 1K            |
| (5) Code           | M1            |

**Electrical Specification**

|                           |                  |
|---------------------------|------------------|
| Working Frequency Range   | 2400~2484 MHz    |
| Peak Gain                 | 0.9 dBi (Typ.)   |
| Impedance                 | 50 Ohm           |
| VSWR                      | 2.5 ( Max)       |
| Polarization              | Linear           |
| Azimuth Beamwidth         | Omni-directional |
| Operation Temperature(°C) | -40 ~85°C        |

The specification is defined on HEK EVB.

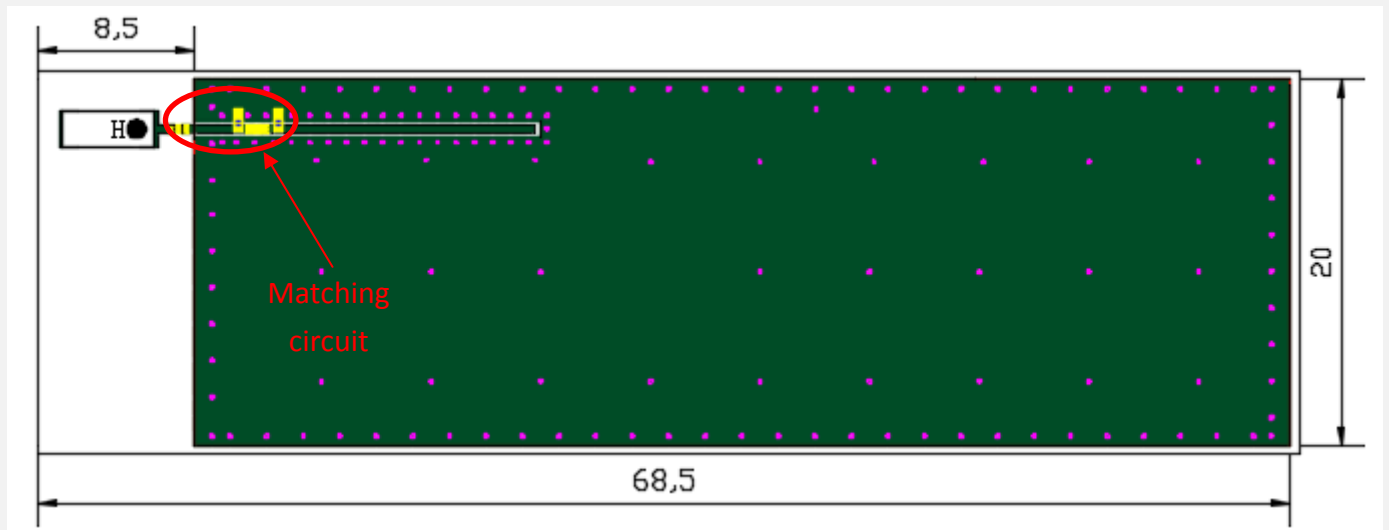
**Dimension and Terminal Configuration**

| Dimension (mm) |            |
|----------------|------------|
| L              | 5.0+/-0.15 |
| W              | 2.0+/-0.15 |
| T              | 1.0+/-0.10 |
| D              | 0.6+/-0.15 |

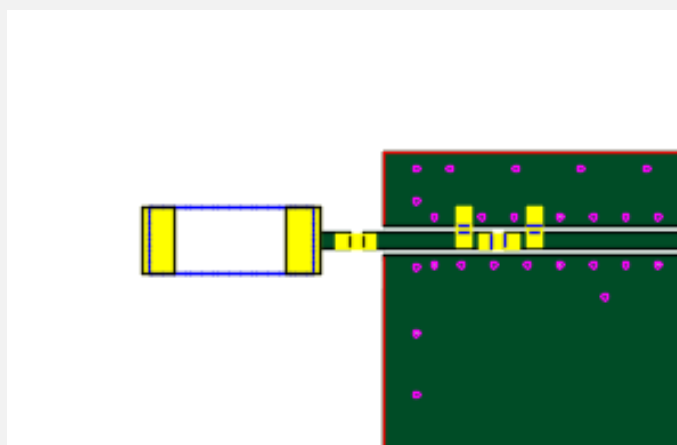
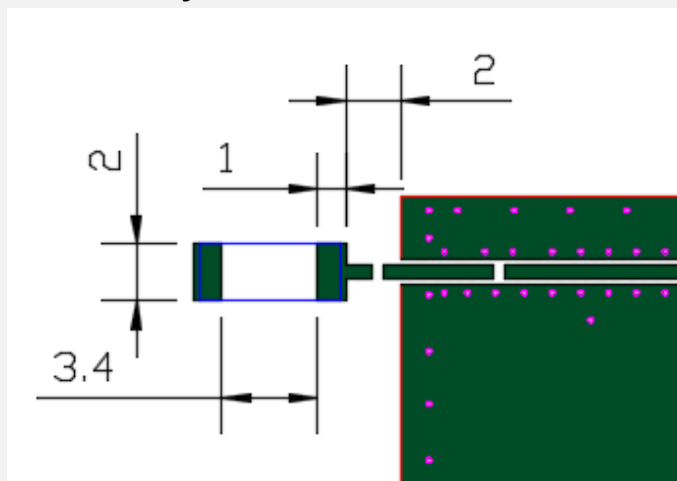
| No. | Terminal Name |
|-----|---------------|
| 1   | Feeding       |
| 2   | Soldering     |

**Evaluation Board Reference**

## PCB Dimension



## Antenna Layout Reference



Unit : mm

 : Chip Antenna

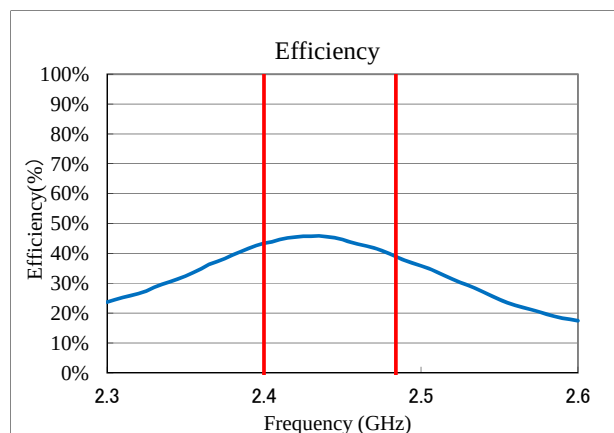
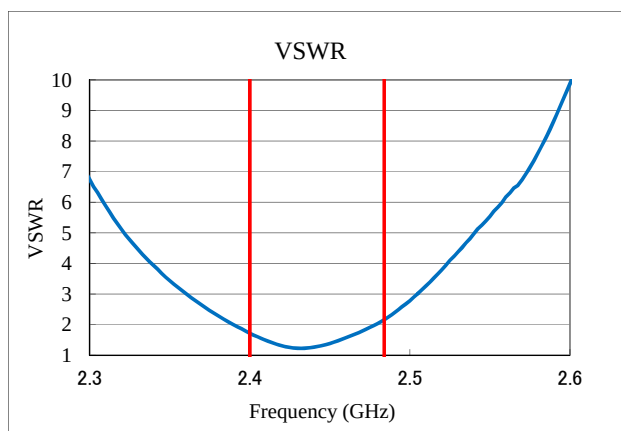
 : Land Pattern

## 2.4GHz 5020 Chip Antenna: ANT5020R24001KM1

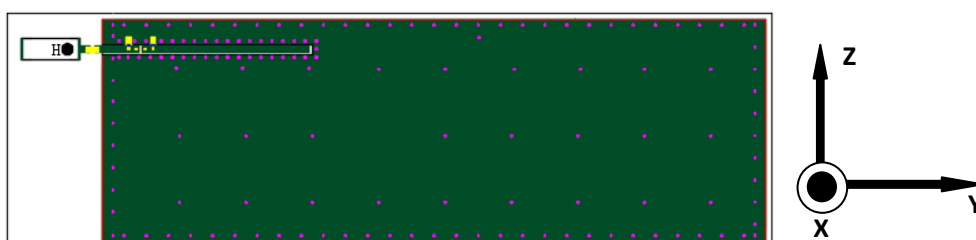
### Electrical Characteristics

#### Return Loss & Radiation

##### VSWR&Efficiency

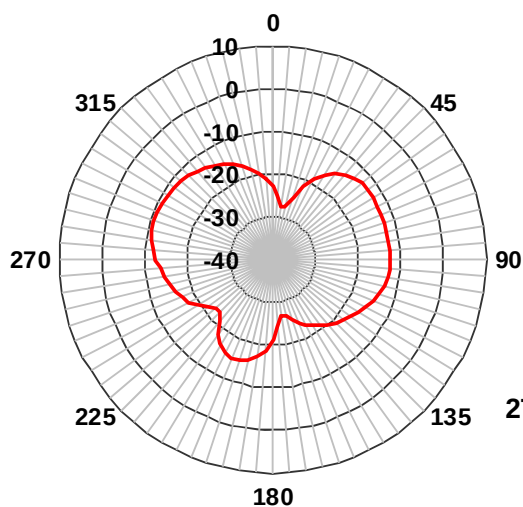


##### Radiation Pattern

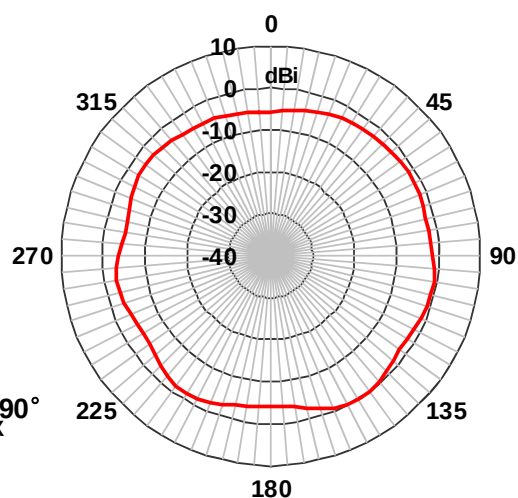
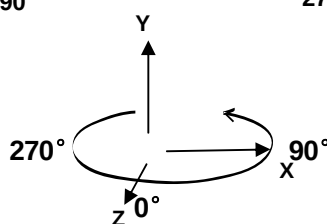


Frequency=2440MHz

##### ZX-Plane

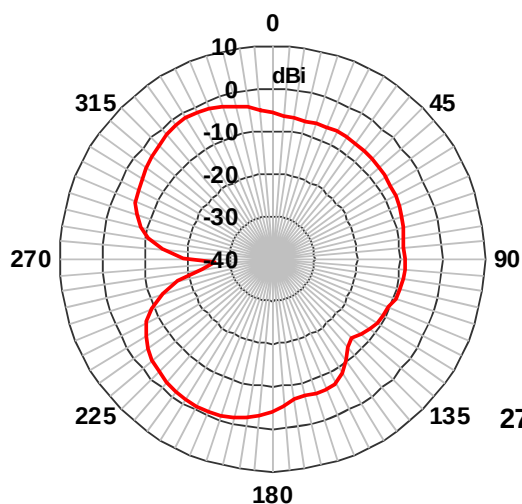


Horizontal Polarization

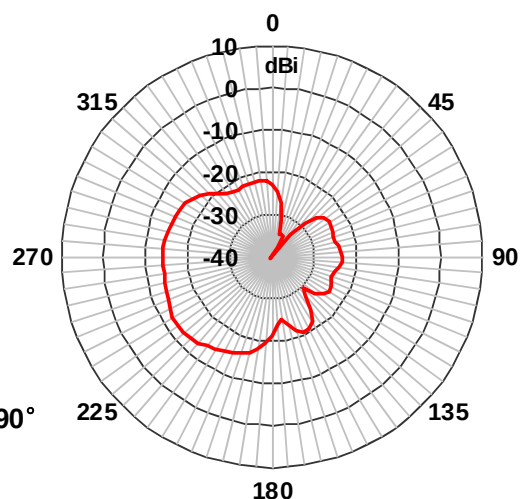
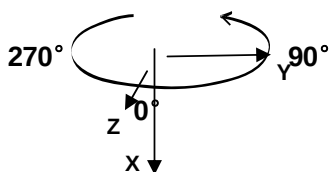


Vertical Polarization

## ZY-Plane

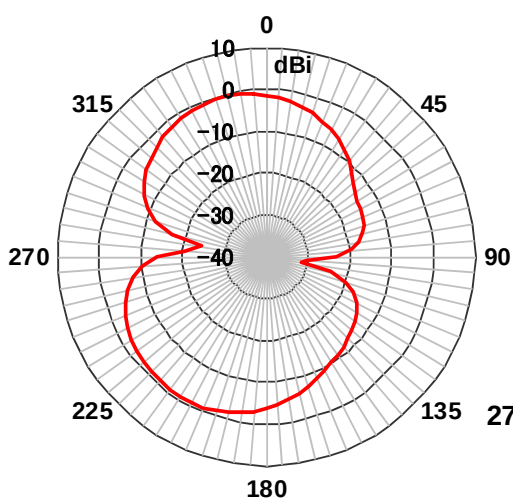


Horizontal Polarization

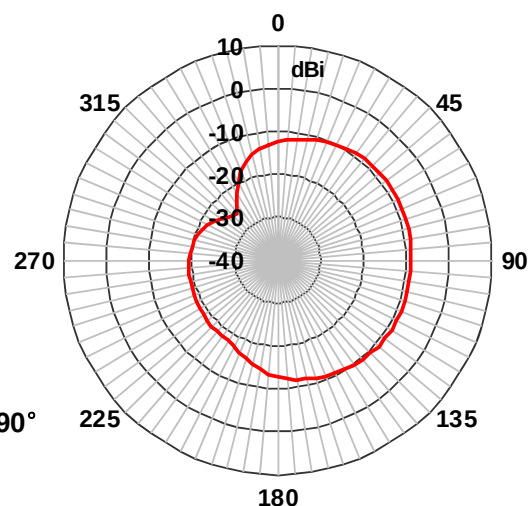
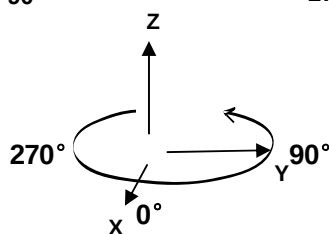


Vertical Polarization

## XY-Plane



Horizontal Polarization

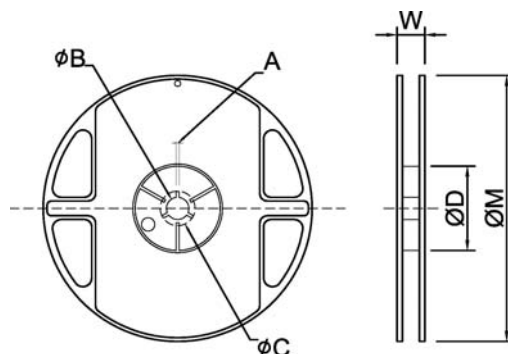


Vertical Polarization

Taping Specifications

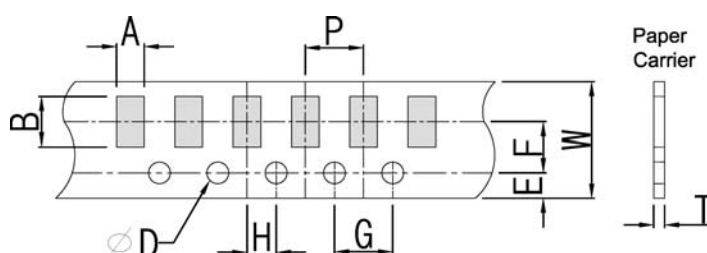
## Reel and Taping Specification

## Reel Specification



| TYPE | SIZE |         | A       | φ B      | φ C    | φ D    | W        | φ M     |
|------|------|---------|---------|----------|--------|--------|----------|---------|
| 5020 | 7"   | 1K/Reel | 2.0±0.5 | 13.0±1.0 | 21±1.0 | 60±1.0 | 16.5±2.0 | 178±2.0 |

## Taping Specification

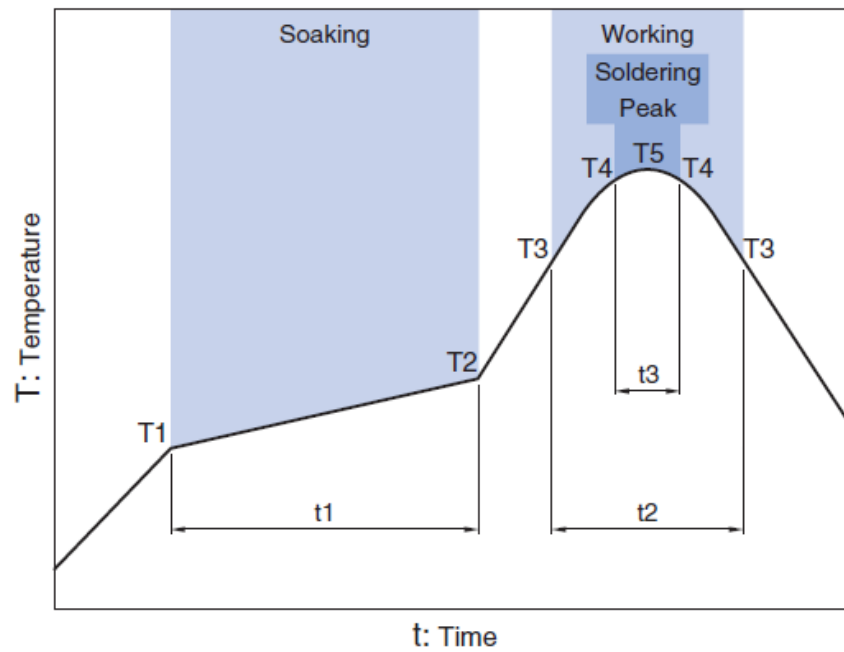


| Packaging  | Type | A         | B         | W         | E         | F        | G        | H        | T         | φD                                  | P      |
|------------|------|-----------|-----------|-----------|-----------|----------|----------|----------|-----------|-------------------------------------|--------|
| Paper Type | 5020 | 2.30±0.20 | 5.30±0.20 | 12.0±0.20 | 1.75±0.10 | 5.5±0.05 | 4.0±0.10 | 2.0±0.05 | 0.30±0.10 | 1.50 <sup>+0.10</sup> <sub>-0</sub> | 10±0.1 |

## 2.4GHz 5020 Chip Antenna: ANT5020R24001KM1

### Recommended Reflow Profile

Pb free solder



| Soaking |       |              | Working |                 | Soldering    |              | Peak       |
|---------|-------|--------------|---------|-----------------|--------------|--------------|------------|
| Temp.   |       | Time         | Temp.   | Time            | Temp.        | Time         | Temp.      |
| T1      | T2    | t1           | T3      | t2              | T4           | t3           | T5         |
| 150°C   | 180°C | 60 to 120sec | 230°C   | more than 30sec | 247 to 253°C | within 10sec | 260°C Max. |