



ShenZhen City FeiMin Technology CO.,LTD.

SPECIFICATION FOR APPROVED

CUSTOMER: \_\_\_\_\_ Angsi Technology (Dingnan) Co., Ltd.

PRODUCTS: \_\_\_\_\_ Chip antenna

PART NO: \_\_\_\_\_

Spec. : \_\_\_\_\_ FM-S1882-BL-2092 (F05)

Data: \_\_\_\_\_ 2025.11.4

| SUPPLIER    |            |             |
|-------------|------------|-------------|
| PREPARED BY | CHECKED BY | APPROVED BY |
|             |            |             |

| CUSTOMER    |            |             |
|-------------|------------|-------------|
| ACCEPTED BY | CHECKED BY | APPROVED BY |
|             |            |             |

REMARK:Please send us one(or copy)of this approval with stamp after accepting,other copies filed by the customer.

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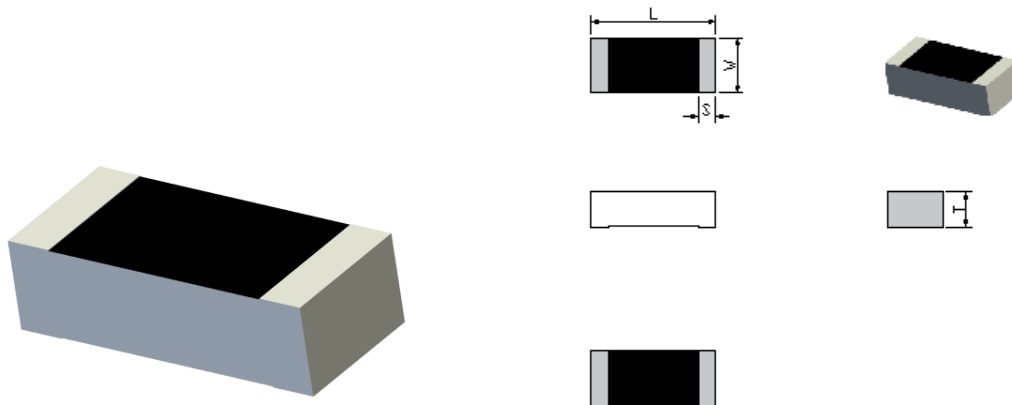
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# 1. Project Information

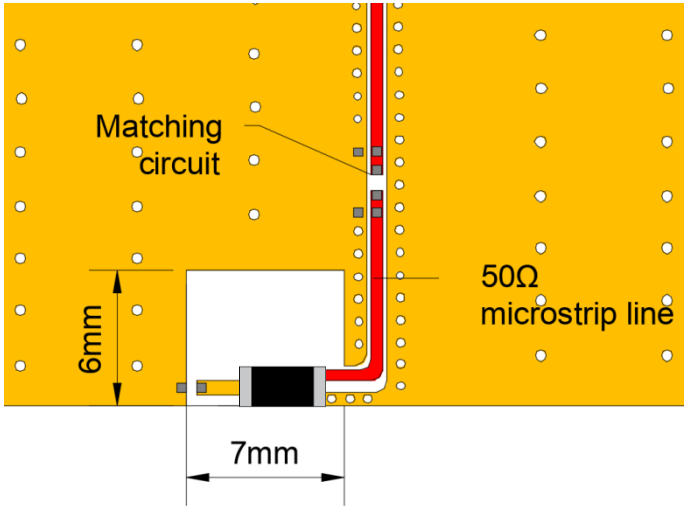
## 1.1. Appearance and Dimensions



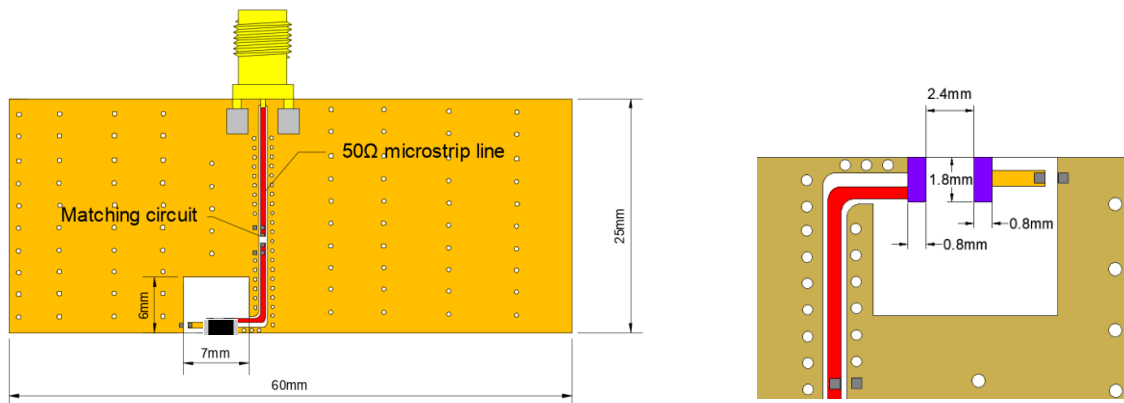
| Symbol                  | Dimension (mm) |
|-------------------------|----------------|
| Length                  | $3.2 \pm 0.20$ |
| Width                   | $1.6 \pm 0.20$ |
| Thickness               | $1.0 \pm 0.20$ |
| Width of the electrodes | $0.4 \pm 0.20$ |

## 1.2. antenna Clearance area

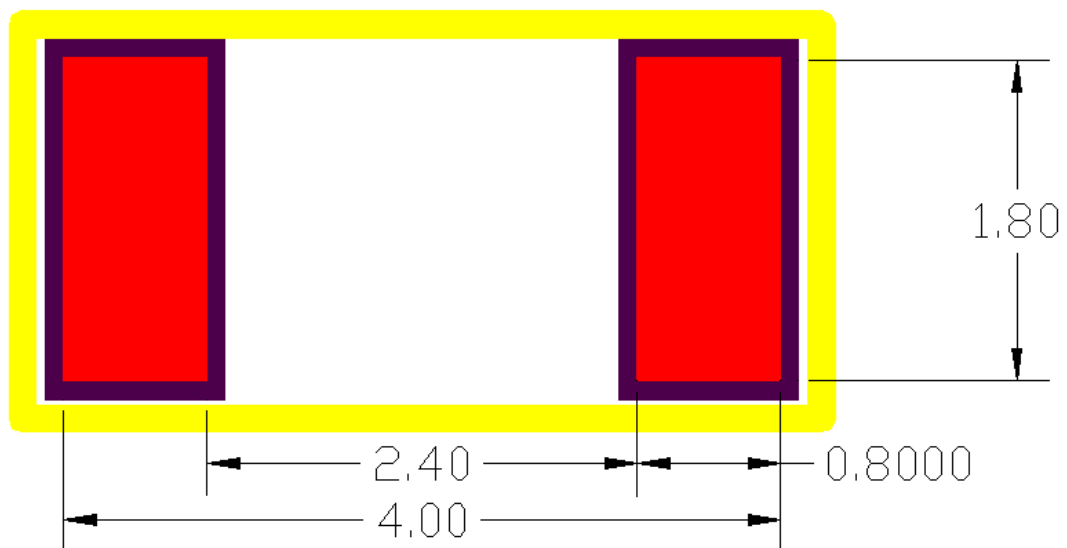
When designing the antenna, it should be far away from metal components and irrelevant components such as batteries, oscillators, shields, cameras, etc. to leave a clean space for the antenna. This interval is called clearance area. The following is the size of clearance area we recommend to reserve.

| Model                           | size               | Clearance area<br><b>L*W(mm)</b> |                                                                                      |
|---------------------------------|--------------------|----------------------------------|--------------------------------------------------------------------------------------|
| A1 (2.4Guni-polar)              | 5.5*1.2*1.2        | 9.1*5.6                          |                                                                                      |
| X5 (2.4Guni-polar)              | 5.2*2.2*1.0        | 8.7*6.5                          |                                                                                      |
| X6 (2.4G pifa)                  | 3.2*1.6*1.0        | 7.0*6.0                          |                                                                                      |
| D1 (2.4Guni-polar)              | 5.2*2.2*1.0        | 8.7*6.5                          |                                                                                      |
| D2 (2.4Guni-polar)              | 5.2*2.2*1.0        | 8.7*6.5                          |                                                                                      |
| D3 (2.4Guni-polar)              | 3.4*1.7*1.2        | 7.2*6.5                          |                                                                                      |
| F01 (2.4G pifa)                 | 3.2*1.6*0.4        | 7.0*6.0                          |                                                                                      |
| S2<br>(2.4/5.8G dual-frequency) | 7.0*3.0*2.0        | 9.0*7.0                          |                                                                                      |
| U1<br>(UHFuni-polar)            | 15.0*3.0*1.0       | 19.0*8.0                         |                                                                                      |
| G2 (GPSuni-polar)               | 9.5*3.0*1.0        | 13.5*7.5                         |                                                                                      |
| <b>F05 (2.4G pifa)</b>          | <b>3.2*1.6*1.0</b> | <b>7.0*6.0</b>                   |  |

### 1.3. Demo Test Board with Antenna(Unit:mm)



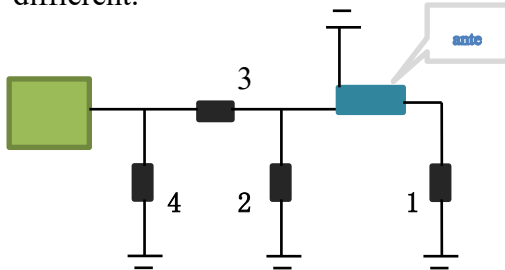
### 1.4. Suggested PCB board size layout



Unit: MM

## 1.5. Matching Circuit

With the following recommended values of matching and tuning components, the center frequencies will be about 2440 MHz at our standard 25\*60 mm evaluation board. However, these are typical reference values which may need to be changed when circuit boards or part vendors are different.



| System Matching Circuit Component (Murata) |               |                    |
|--------------------------------------------|---------------|--------------------|
| Location                                   | Description   | Tolerance          |
| 1                                          | 0.75pF (0402) | $\pm 0.1\text{pF}$ |
| 2                                          | NC            | /                  |
| 3                                          | 1.0pF (0402)  | $\pm 0.1\text{pF}$ |
| 4                                          | NC            | /                  |

## 2. Electrical Characteristics(25\*60mm ground plane)

### 2.1. Electrical Table

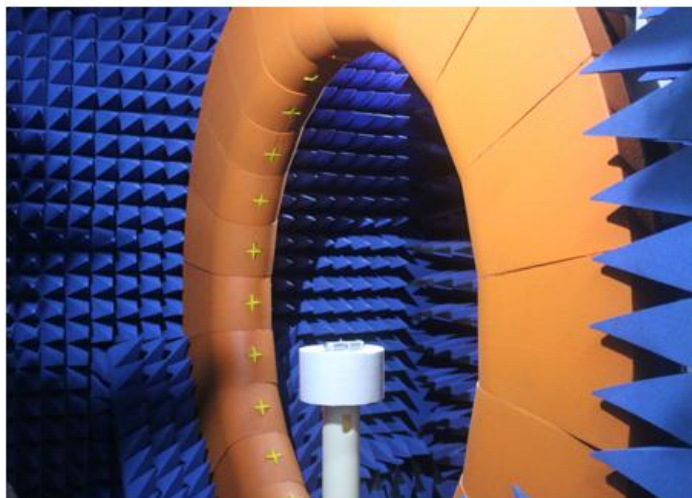
| Characteristics    |            | Specifications      | Unit     |
|--------------------|------------|---------------------|----------|
| Outline Dimensions |            | 3.2*1.6*1.0         | mm       |
| Working Frequency  |            | 2400-2500           | MHz      |
| VSWR               |            | <2                  | /        |
| Impedance          |            | 50                  | $\Omega$ |
| Polarization       |            | linear polarization | /        |
| Gain               | Peak       | 1.86                | dBi      |
|                    | Efficiency | 50                  | %        |

## 2.2. VSWR & Smith



## 2.3. Gain and Efficiency

Test system



Probe microwave dark room

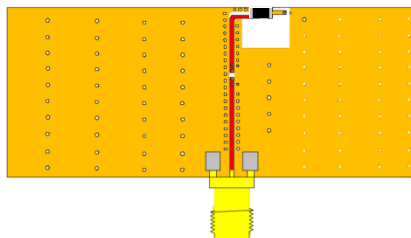
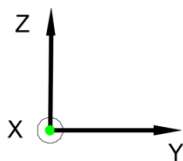
➤ Frequency : 0.4GHz~6GHz

## Main test indicators

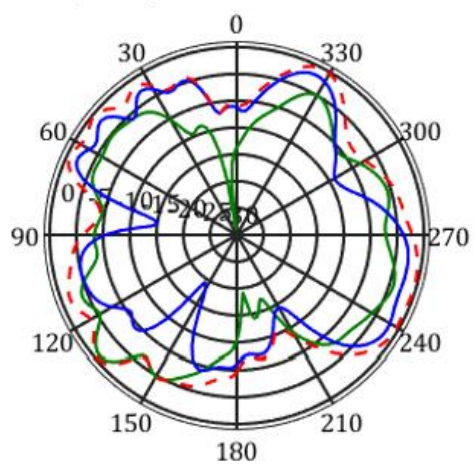
- ◆ Passive indicators
  - ◆ gain
  - ◆ efficiency
  - ◆ 3D direction map
- Active indicators
  - TRP total radiated power
  - Total reception sensitivity of TIS

| Frequency (MHz) | Gain (dBi) | Efficiency (%) |
|-----------------|------------|----------------|
| 2400 MHz        | 1.57       | 39.29          |
| 2410 MHz        | 1.63       | 40.37          |
| 2420 MHz        | 1.67       | 40.98          |
| 2430 MHz        | 1.73       | 42.05          |
| 2440 MHz        | 1.78       | 42.73          |
| 2450 MHz        | 1.84       | 43.31          |
| 2460 MHz        | 1.86       | 43.93          |
| 2470 MHz        | 1.80       | 42.79          |
| 2480 MHz        | 1.73       | 42.35          |
| 2490 MHz        | 1.64       | 40.87          |
| 2500 MHz        | 1.57       | 40.14          |

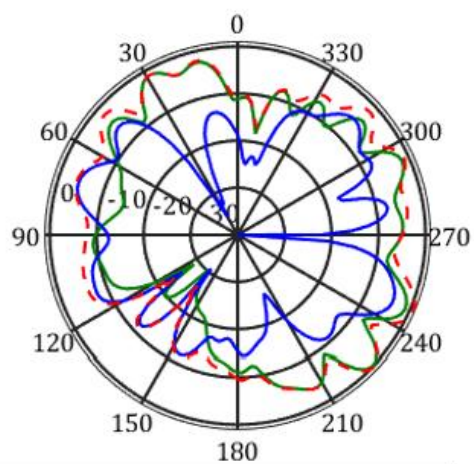
## 2.4. Antenna radiation pattern



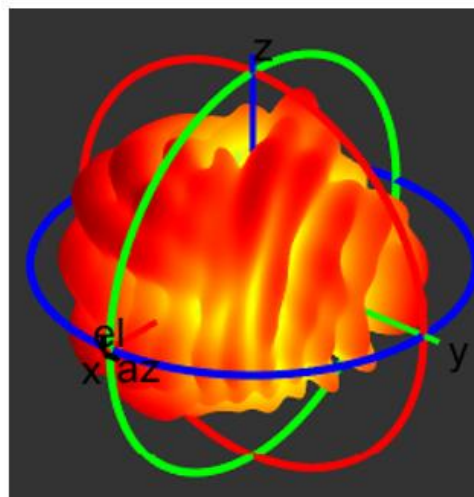
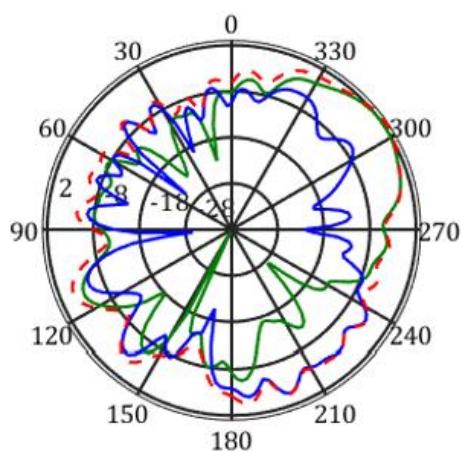
frequency=2400MHz, X-Z Plane



frequency=2400MHz, Y-Z Plane

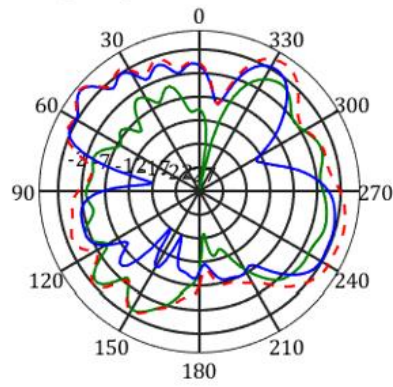


frequency=2400MHz, X-Y Plane

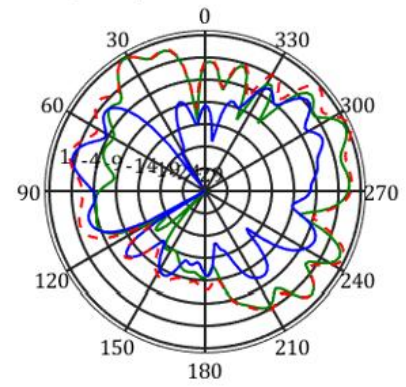




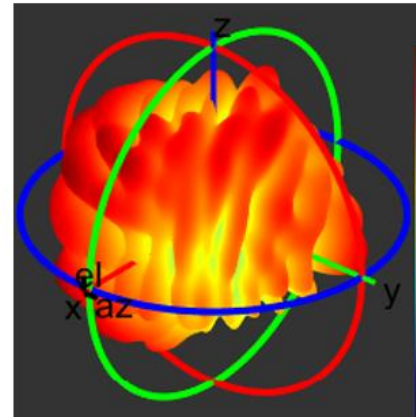
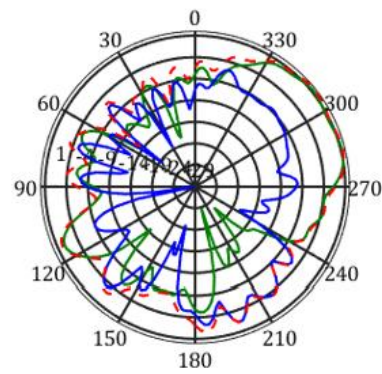
frequency=2450MHz, X-Z Plane



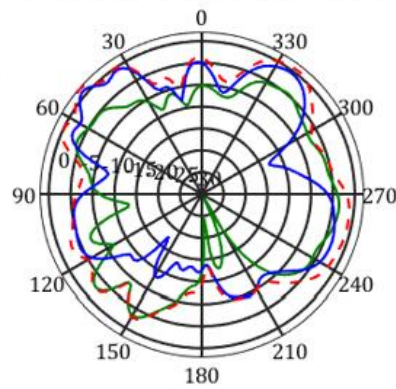
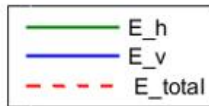
frequency=2450MHz, Y-Z Plane



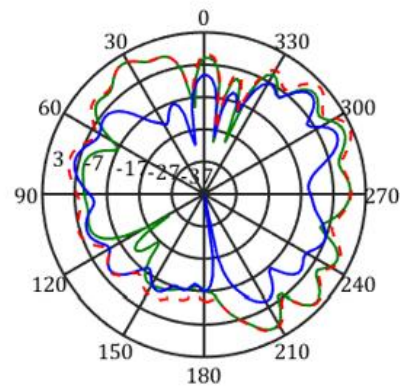
frequency=2450MHz, X-Y Plane



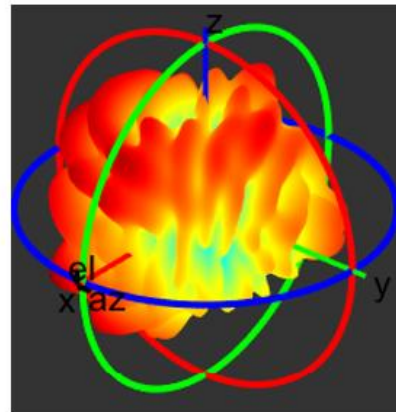
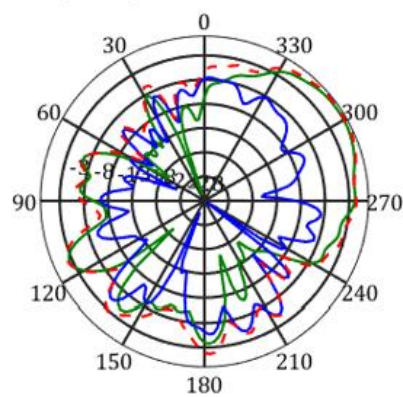
frequency=2500MHz, X-Z Plane



frequency=2500MHz, Y-Z Plane

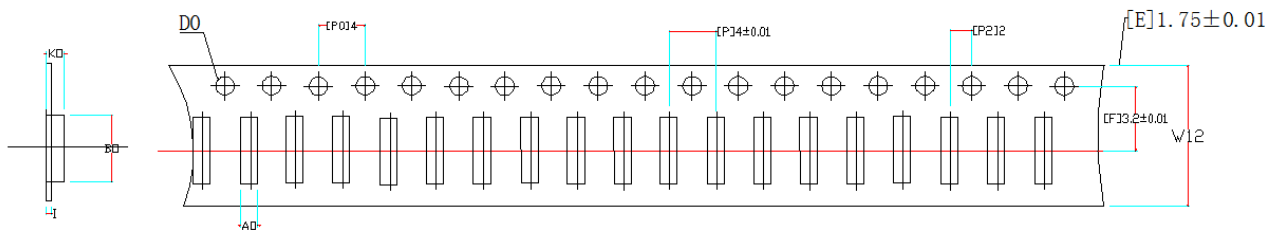


frequency=2500MHz, X-Y Plane



### 3. Packaging Information

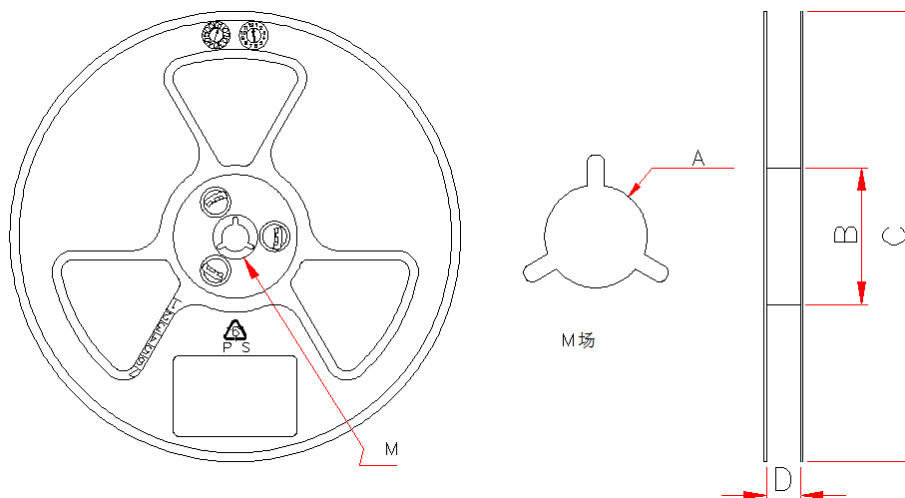
#### 3.1. Tape specification



| Index          | A0           | B0           | K0           | P0           | P            | P2           | φ D0         | W             | E            | F            | T              |
|----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|----------------|
| Dimension (mm) | 1.85<br>±0.1 | 3.50<br>±0.1 | 0.85<br>±0.1 | 4.00<br>±0.1 | 4.00<br>±0.1 | 2.00<br>±0.1 | 1.50<br>+0.1 | 12.00<br>±0.3 | 1.75<br>±0.1 | 3.20<br>±0.1 | 0.30 ±<br>0.05 |

1. 10 sprocket hole pitch cumulative tolerance  $\pm 0.20$ .
2. Carrier camber is within 1 mm in 250 mm.
3. All dimensions meet EIA-481-C requirements.
4. Material :Transparent PS.
5. Packing length per 7" reel :12.5Meters.
6. Component load per 7" reel : 3000 pcs.( A total of 120 units are reserved for future use.)

#### 3.2. Reel specification



| Index          | A          | B         | C         | D          |
|----------------|------------|-----------|-----------|------------|
| Dimension (mm) | 13.3 ± 0.3 | 100 ± 0.3 | 330 ± 0.3 | 24.5 ± 0.3 |

## 4. Notes

- 1) Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
- 2) The use of tweezers or vacuum pick up is strongly recommended for individual components.

## 5. Storage Conditions

- 1) Recommended products should be used within 6 months form the time of delivery.
- 2) Storage environment condition
  - Temperature and humidity conditions:-10~40℃ and 30~70%RH.
  - The packaging material should be kept where no chlorine or sulfur exists in the air.
  - Products should be storage in the warehouse without heat shock,vibration,direct sunlight and so on.