

规格书编号

**SPEC NO : HDDB05NSSB11SP01**

# 产品规格书

# SPECIFICATION

CUSTOMER 客户: \_\_\_\_\_

PRODUCT 产品: \_\_\_\_\_ SAW DUPLEXER \_\_\_\_\_

MODEL NO 型号: \_\_\_\_\_ HDDB05NSS-B11 \_\_\_\_\_

MARKING 印字: \_\_\_\_\_ B078 \_\_\_\_\_

PREPARED 编制: \_\_\_\_\_ CHECKED 审核: \_\_\_\_\_

APPROVED 批准: \_\_\_\_\_ D A T E 日期: \_\_\_\_\_ 2016-1-10 \_\_\_\_\_

|                         |             |         |
|-------------------------|-------------|---------|
| 客户确认 CUSTOMER RECEIVED: |             |         |
| 审核 CHECKED              | 批准 APPROVED | 日期 DATE |
|                         |             |         |

无锡市好达电子有限公司  
Shoulder Electronics Limited

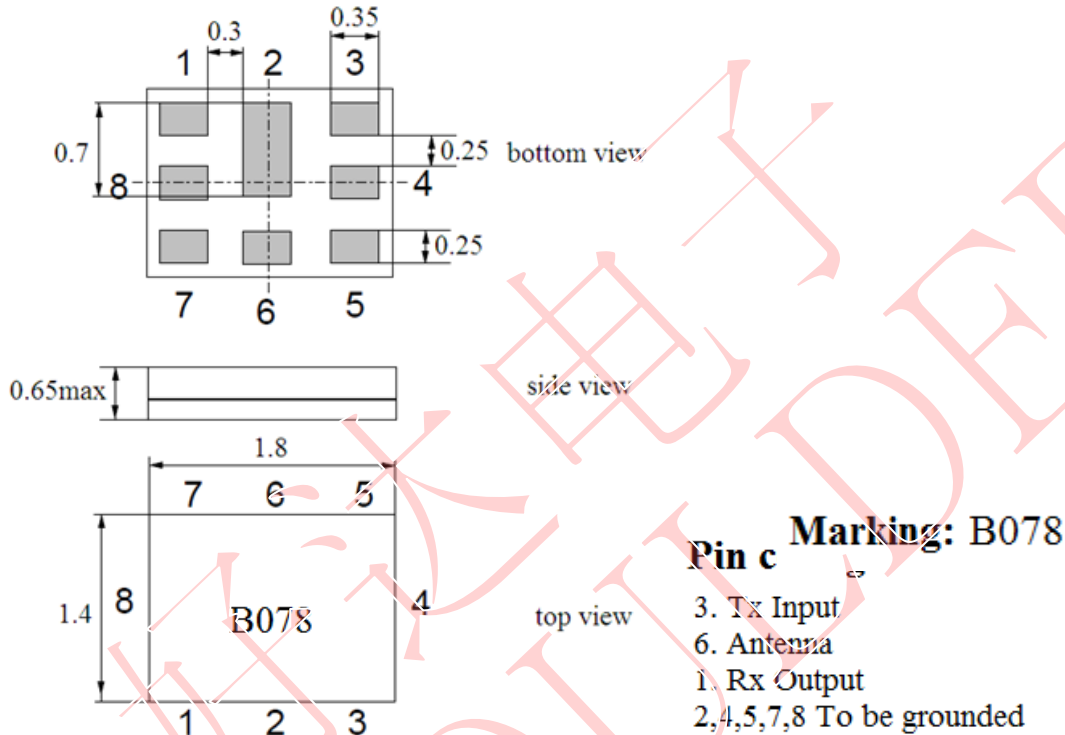
Factory Address: NO. 115, Gaoyun Road, Binhu Economic & Technology Development Area, Wuxi, Jiangsu, China. Tel: 86-510-85629111  
Country of origin: China



**1. Application**

- Low-loss Saw duplexer for mobile telephone LTE and WCDMA Band V systems.
- Low insertion attenuation and low passband ripple.
- Usable passband 25MHz
- High isolation between Tx and Rx.
- RoHS compatible

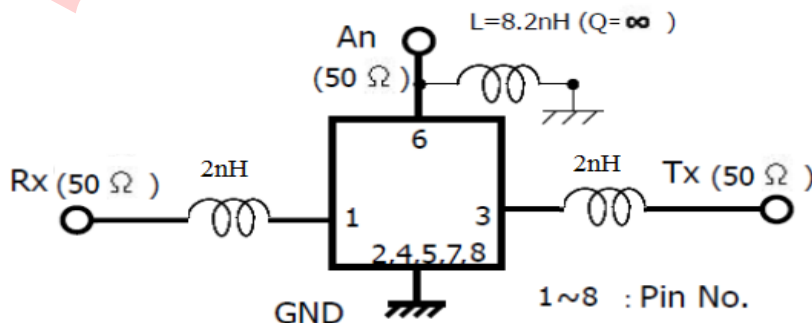
**2. DIMENSION (PKG SIZE 1.8 x 1.4 x 0.65mm)**



**3. Maximum Rating**

| Items                      | Conditions        |
|----------------------------|-------------------|
| Operation temperature rang | -30℃ ~ +85℃       |
| Storage temperature rang   | -40℃ ~ +85℃       |
| ESD voltage                | ESD(MM) : 50VDC   |
| Sensitive discharge device | ESD(HBM) : 175VDC |
| DC Voltage VDC             | 3V (25+/-2 deg.C) |
| Moisture Sensitivity Level | MSL 2             |

**4. TEST CIRCUIT**



## 5. ELECTRICAL SPECIFICATION

**Table1. Electrical Specification**

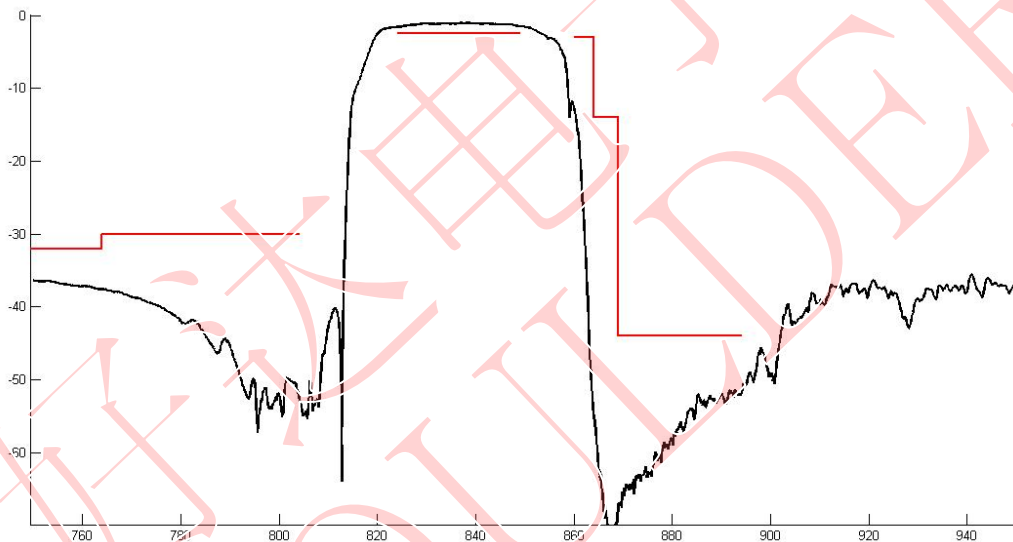
| Item            |                      | Condition<br>(MHz) | Specification |                             |     | Unit |    |
|-----------------|----------------------|--------------------|---------------|-----------------------------|-----|------|----|
|                 |                      |                    | Min           | Typ                         | Max |      |    |
| TX<br>to<br>ANT | Insertion loss       |                    | 824~849       | -                           | 1.7 | 2.5  | dB |
|                 | Amplitude ripple     |                    | 824~849       | -                           | 0.6 | 1.5  | dB |
|                 | VSWR                 | ANT                | 824~849       | -                           | 1.3 | 2    | -  |
|                 |                      | Tx                 |               | -                           | 1.4 | 2    | -  |
|                 | Input Power          |                    | 824~849       | +29dBm Ta=+50°C<br>5000h,CW |     |      | -  |
|                 | Absolute attenuation |                    | 10~420        | 35                          | 43  | -    | dB |
|                 |                      |                    | 420~494       | 35                          | 40  | -    | dB |
|                 |                      |                    | 494~764       | 32                          | 35  | -    | dB |
|                 |                      |                    | 764~804       | 30                          | 37  | -    | dB |
|                 |                      |                    | 860~864       | 3                           | 10  | -    | dB |
|                 |                      |                    | 864~869       | 14                          | 35  | -    | dB |
|                 |                      |                    | 869~894       | 44                          | 50  | -    | dB |
|                 |                      |                    | 1559~1708     | 39                          | 42  | -    | dB |
|                 |                      |                    | 1844.9~1919.6 | 40                          | 47  | -    | dB |
|                 |                      |                    | 1930~1990     | 44                          | 49  | -    | dB |
|                 |                      |                    | 2110~2170     | 44                          | 47  | -    | dB |
|                 |                      |                    | 2400~2547     | 36                          | 39  | -    | dB |
|                 |                      |                    | 3286~3406     | 30                          | 35  | -    | dB |
| 4110~4255       | 20                   | 35                 | -             | dB                          |     |      |    |
| 4900~5950       | 24                   | 30                 | -             | dB                          |     |      |    |
| ANT<br>to<br>RX | Insertion loss       |                    | 869~894       | -                           | 1.8 | 2.6  | dB |
|                 | Amplitude ripple     |                    | 869~894       | -                           | 0.5 | 1.5  | dB |
|                 | VSWR                 | ANT                | 869~894       | -                           | 1.4 | 2.0  | -  |
|                 |                      | Rx                 |               | -                           | 1.2 | 2.0  | -  |
|                 | Absolute attenuation |                    | 10~447        | 50                          | 60  | -    | dB |
|                 |                      |                    | 447~824       | 50                          | 58  | -    | dB |
|                 |                      |                    | 824~849       | 45                          | 58  | -    | dB |
|                 |                      |                    | 849~854       | 30                          | 55  | -    | dB |
|                 |                      |                    | 909~920       | 10                          | 20  | -    | dB |
|                 |                      |                    | 920~979       | 25                          | 35  | -    | dB |
|                 |                      |                    | 979~1710      | 45                          | 52  | -    | dB |
|                 |                      |                    | 1710~1785     | 50                          | 53  | -    | dB |
| 1785~1980       |                      |                    | 45            | 53                          | -   | dB   |    |
| 1980~2500       |                      |                    | 40            | 50                          | -   | dB   |    |
| 2517~5364       | 40                   | 48                 | -             | dB                          |     |      |    |

**Table2. Electrical Specification**

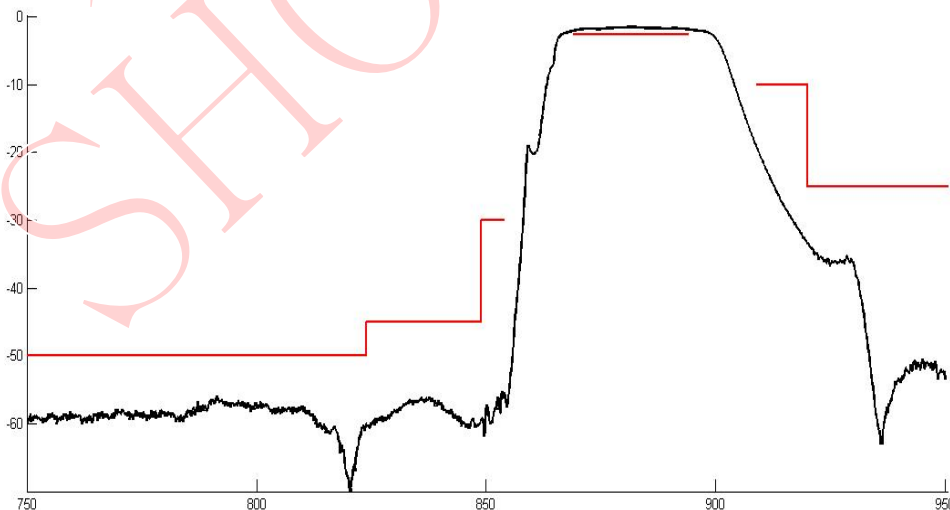
| Item                  |           | Condition (MHz) | Specification |     |     | Unit |
|-----------------------|-----------|-----------------|---------------|-----|-----|------|
|                       |           |                 | Min           | Typ | Max |      |
| TX to RX              | Isolation | 824~849         | 55            | 60  | -   | dB   |
|                       |           | 869~894         | 50            | 53  | -   | dB   |
|                       |           | 1574~1577       | 40            | 55  | -   | dB   |
|                       |           | 1638~1708       | 20            | 50  | -   | dB   |
|                       |           | 2462~2557       | 20            | 50  | -   | dB   |
| Terminating Impedance |           | Tx port         | 50ohm+2nH     |     |     |      |
|                       |           | Rx port         | 50ohm+2nH     |     |     |      |
|                       |           | Ant port        | 50ohm//8.2nH  |     |     |      |
| Operating Temperature |           |                 | -30 to +85 °C |     |     |      |

## 6. Typical frequency response

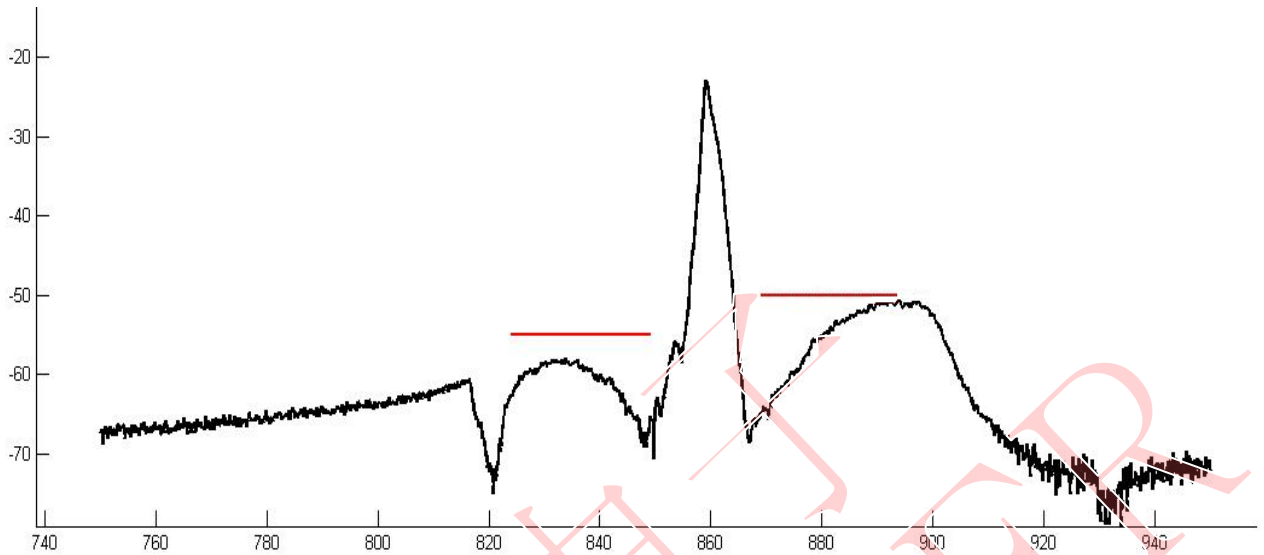
**Tx to Ant**



**Ant to Rx**



**Tx to Rx Isolation**



**7. ENVIRONMENTAL CHARACTERISTICS**

**7.1 High temperature exposure**

Subject the device to +85°C for 16 hours. Then release the filter into the room conditions for 24 hours prior to the measurement. It shall fulfill the specifications in 5.

**7.2 Low temperature exposure**

Subject the device to -40°C for 16 hours. Then release the device into the room conditions for 24 hours prior to the measurement. It shall fulfill the specifications in 5.

**7.3 Temperature cycling**

Subject the device to a low temperature of -40°C for 30 minutes. Following by a high temperature of +85°C for 30 Minutes. Then release the device into the room conditions for 24 hours prior to the measurement. It shall meet the specifications in 5.

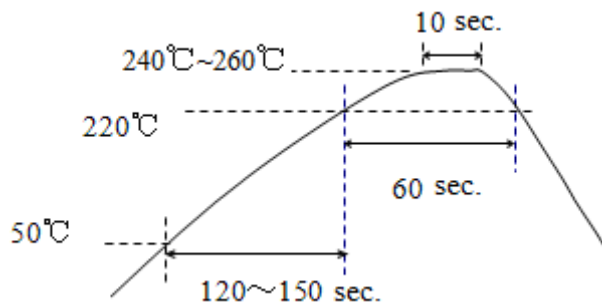
**7.4 Resistance to solder heat**

- 1、immerge the solder bath at 260°C for 10 sec.
- 2、 the iron at 370°C for 3 sec

**7.5 Solderability**

Submerge the device terminals into the solder bath at 245°C ±5°C for 5s, More than 95% area of the soldering pad must be covered with new solder. It shall meet the specifications in 5.

**7.6 Reflow soldering**



The specimen shall be passed through the reflow furnace with the condition shown in the above profile for 1 time.

The specimen shall be stored at standard atmospheric conditions for 1h, after which the measurement shall be made. Test board shall be 1.6 mm thick. Base material shall be glass fabric base epoxy resin.

#### 7.7 Mechanical shock

Drop the device randomly onto the concrete floor from the height of 1m 3 times. the device shall fulfill the specifications in 5.

#### 7.8 Vibration

Subject the device to the vibration for 1 hour each in x,y and z axes with the amplitude of 1.5 mm at 10 to 55 Hz. The device shall fulfill the specifications in 5.

### 8. REMARK

#### 8.1 Static voltage

Static voltage between signal load & ground may cause deterioration & destruction of the component. Please avoid static voltage.

#### 8.2 Ultrasonic cleaning

Ultrasonic vibration may cause deterioration & destruction of the component. Please avoid ultrasonic cleaning

#### 8.3 Soldering

Only pad component may be soldered. Please avoid soldering another part of component.

### 9. Packing

#### 9.1 Dimensions

(1) Carrier Tape: Figure 1

(2) Reel: Figure 2

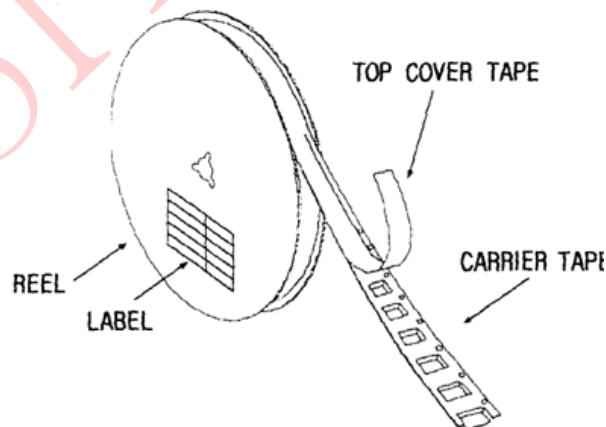
(3) The product shall be packed properly not to be damaged during transportation and storage.

#### 9.2 Reeling Quantity

10000 pcs/reel  $\phi$  257.5mm

#### 9.3 Taping Structure

(1) The tape shall be wound around the reel in the direction shown below.

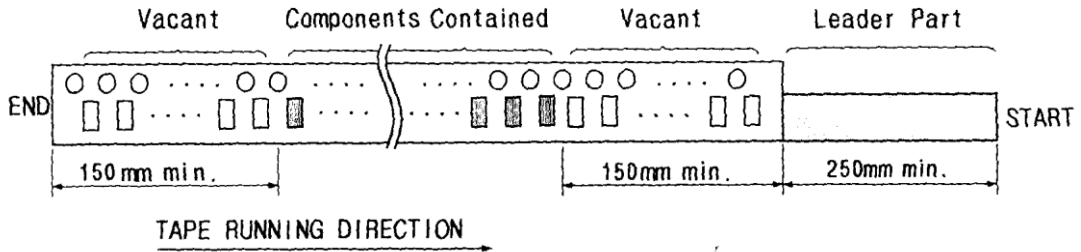


(2) Label

|             |  |
|-------------|--|
| Device Name |  |
|-------------|--|

|                   |  |
|-------------------|--|
| Marking           |  |
| User Product Name |  |
| Quantity          |  |
| Lot No.           |  |

(3) Leader part and vacant position specifications.

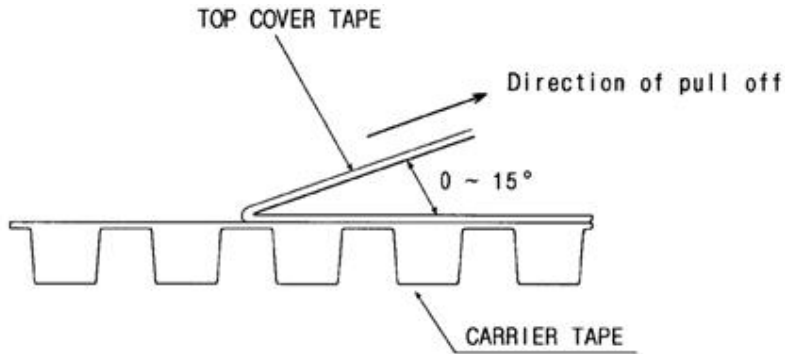


**10. TAPE SPECIFICATIONS**

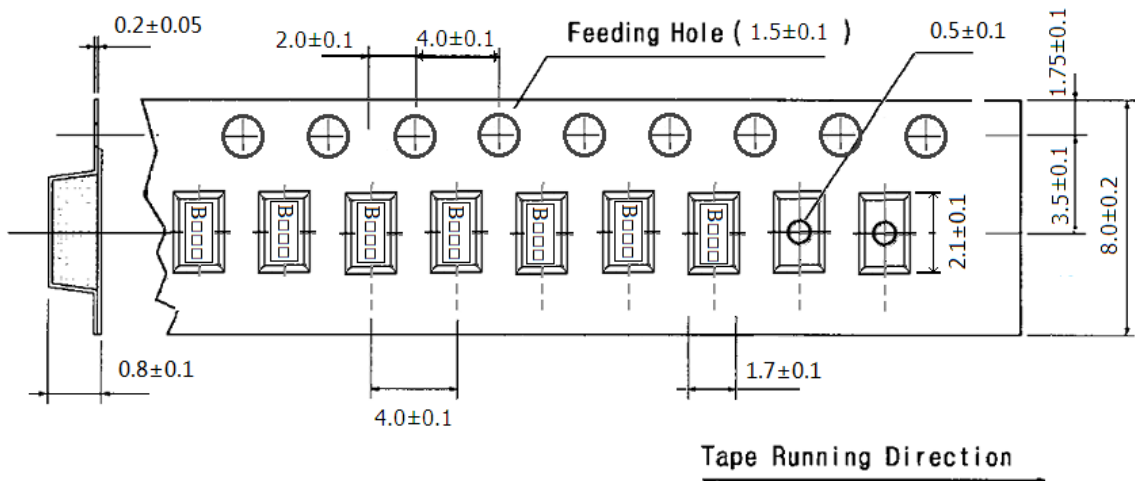
10.1 Tensile Strength of Carrier Tape: 4.4N/mm width

10.2 Top Cover Tape Adhesion (See the below figure)

- (1) pull off angle: 0~15°
- (2) speed: 300mm/min.
- (3) force: 20~70g

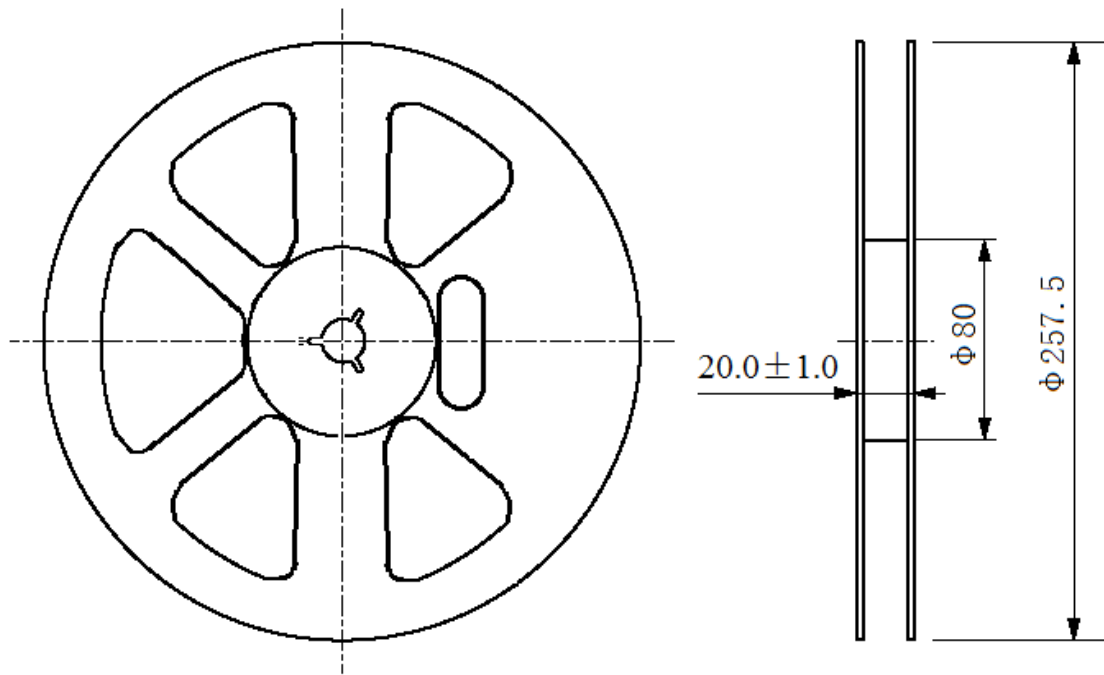


**[Figure 1] Carrier Tape Dimensions**





[Figure 2] 10000 pcs/reel  $\phi$  257.5mm



$\phi$  257.5 Reel Dimension

(in mm)