

规格书编号

**SPEC NO : HDDB01NSBP4SP02**

# 产品规格书

# SPECIFICATION

CUSTOMER 客户: \_\_\_\_\_

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

MODEL NO 型号: \_\_\_\_\_ HDDB01NSB -P4 \_\_\_\_\_

MARKING 印字: \_\_\_\_\_ HD C010 \_\_\_\_\_

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

APPROVED 批准: \_\_\_\_\_ DATE 日期: \_\_\_\_\_ 2016-9-1 \_\_\_\_\_

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

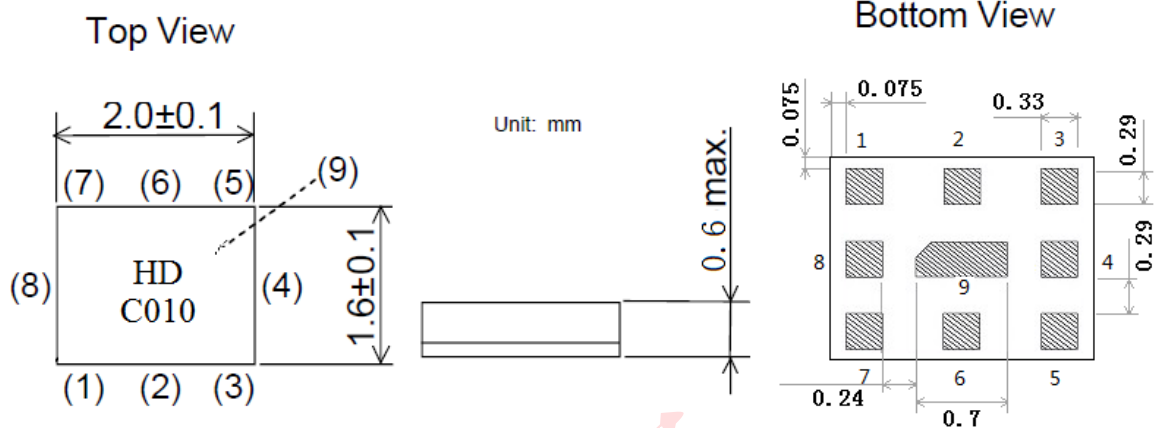
Factory Address: NO. 115, Gaoyun Road, Binhu Economic & Technology Development Area, Wuxi, Jiangsu, China. Tel: 86-510-85629111  
Country of origin: China



### 1. Application

- Low-loss Saw duplexer for mobile telephone LTE and WCDMA Band1 systems.
- Low insertion attenuation and low passband ripple.
- Usable passband 60MHz
- High isolation between Tx and Rx.
- RoHS compatible
- Single-ended to balanced transformation in Antenna-Rx path

### 2. DIMENSION (PKG SIZE 2.0 x 1.6 x 0.6mm)



#### Marking:

HD: Brand

C010 : Model code

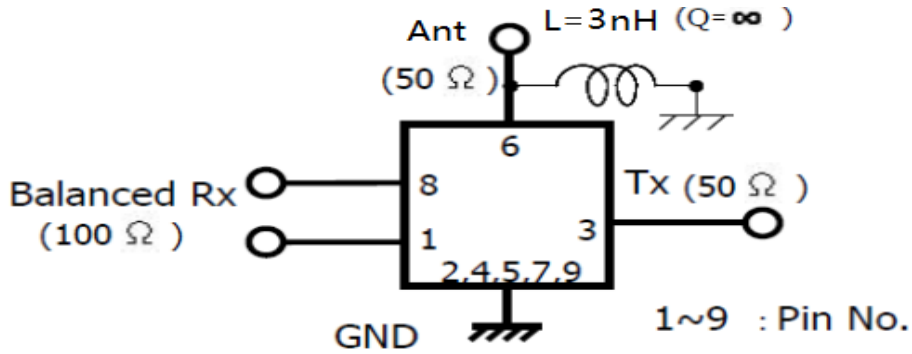
### 3. Pin Configuration

Pin No.	Pin name	Description
1	Rx	Receiver Pin (balanced)
2	GND	Ground Pin
3	Tx	Transmitter Pin
4	GND	Ground Pin
5	GND	Ground Pin
6	ANT	Antenna Pin
7	GND	Ground Pin
8	Rx	Receiver Pin (balanced)
9	GND	Ground Pin

### 4. Maximum Rating

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

**5. TEST CIRCUIT**



**6. ELECTRICAL SPECIFICATION**

**Table1. Electrical Specification**

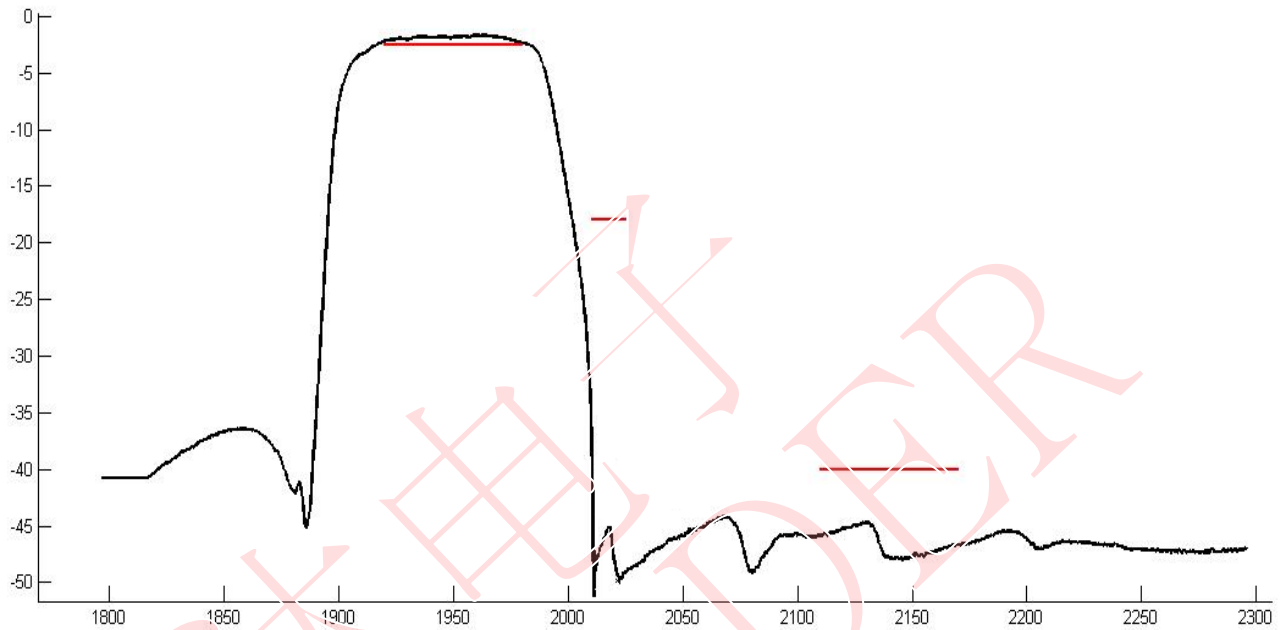
Item		Condition (MHz)	Specification			Unit	
			Min	Typ	Max		
TX to ANT	Insertion loss	1920~1980		2.0	2.5	dB	
	Pass band ripple	1920~1980	-	0.5	1.0	dB	
	VSWR	ANT	1920~1980	-	1.6	2.0	-
		Tx		-	1.6	2.0	-
	Input Power	1920~1980	+29dBm Ta=+50°C 5000h,CW			-	
	Absolute attenuation		1570~1580	38	42	-	dB
			2010~2025	18	25	-	dB
		2110~2170	40	47	-	dB	
		2400~2500	32	36	-	dB	
		3800~4000	20	30	-	dB	
ANT to RX	Insertion loss	2110~2170	-	2.0	2.5	dB	
	Pass band ripple	2110~2170		0.3	1.0	dB	
	VSWR	ANT	2110~2170	-	1.6	2.0	-
		Rx		-	1.6	2.0	-
	Absolute attenuation		1920~1980	40	44	-	dB
			2400~2500	30	45		dB
		2500~4000	25	40		dB	

**Table2. Electrical Specification**

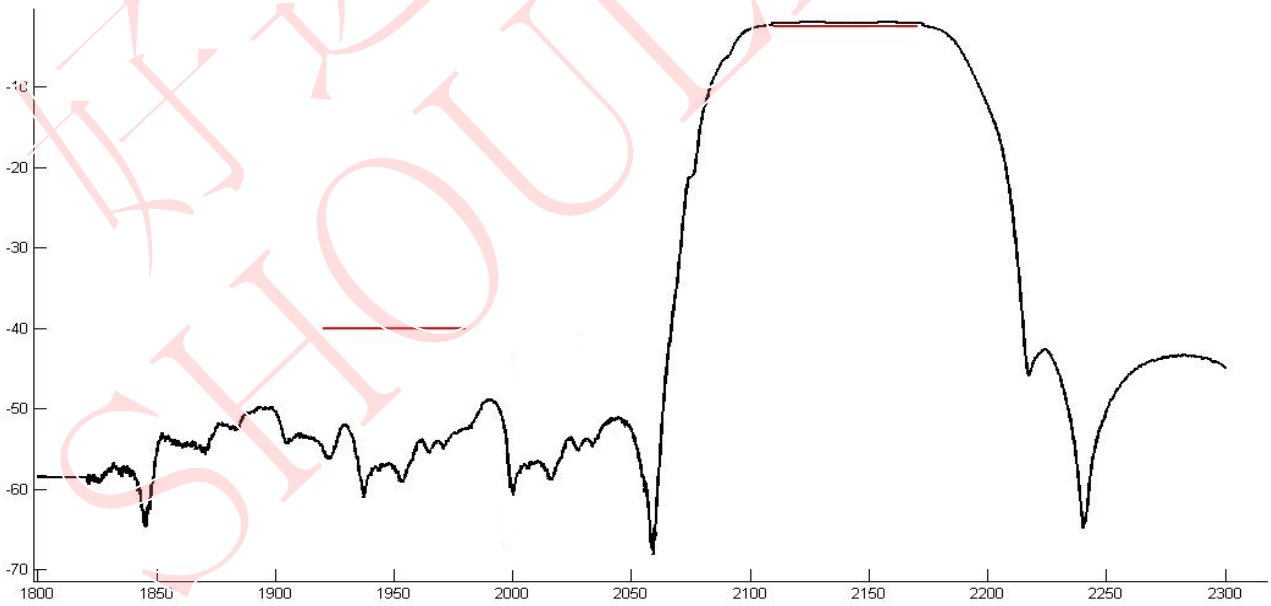
Item		Condition (MHz)	Specification			Unit	Remarks
			Min	Typ	Max		
TX to RX	Isolation	1920~1980	54	58	-	dB	
		2110~2170	50	55	-	dB	
Terminating Impedance	Tx port		50			Ohm	Single-ended
	Rx port		100			Ohm	Differential
	Ant port		50//3nH			Ohm	Single-ended
Operating Temperature			-20 to +85			oC	

### 7. Typical frequency response

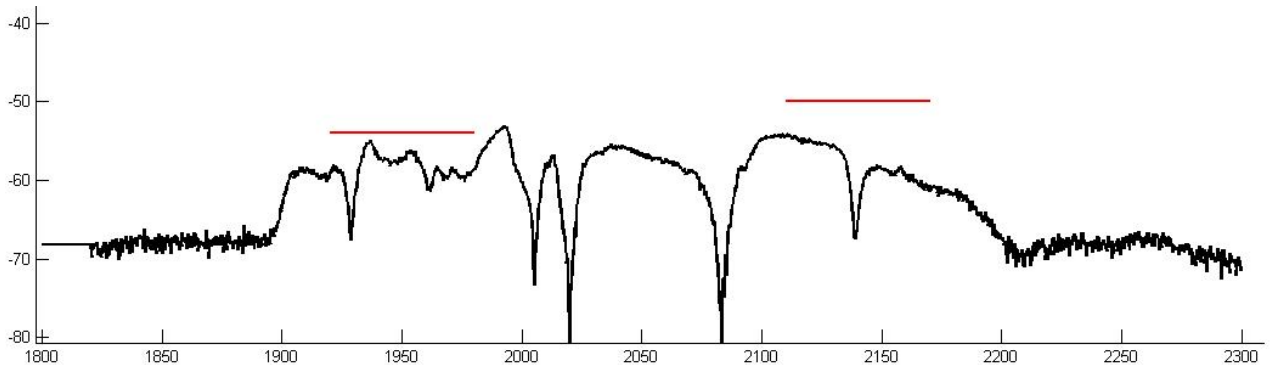
Tx to Ant



Ant to Rx



Tx to Rx Isolation



## 8. ENVIRONMENTAL CHARACTERISTICS

### 8.1 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.

### 8.2 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.

### 8.3 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.

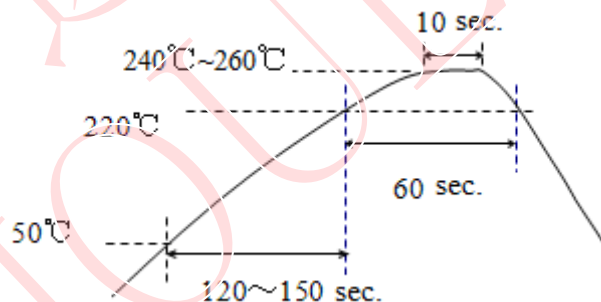
### 8.4 Resistance to solder heat

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

### 8.5 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.

### 8.6 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.

### 8.7 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.

### 8.8 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.

## 9. REMARK

### 9.1 Static voltage

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

9.2 Ultrasonic cleaning

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

9.3 Soldering

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

**10. Packing**

10.1 Dimensions

(1) Carrier Tape: Figure 1

(2) Reel: Figure 2

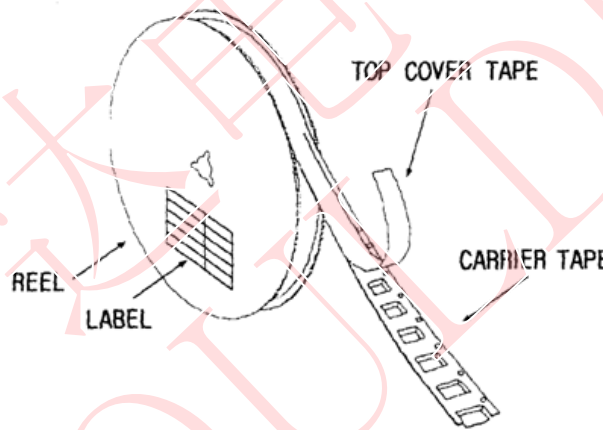
(3) The product shall be packed properly not to be damaged during transportation and storage.

10.2 Reeling Quantity

10000 pcs/reel  $\phi$  257.5mm

10.3 Taping Structure

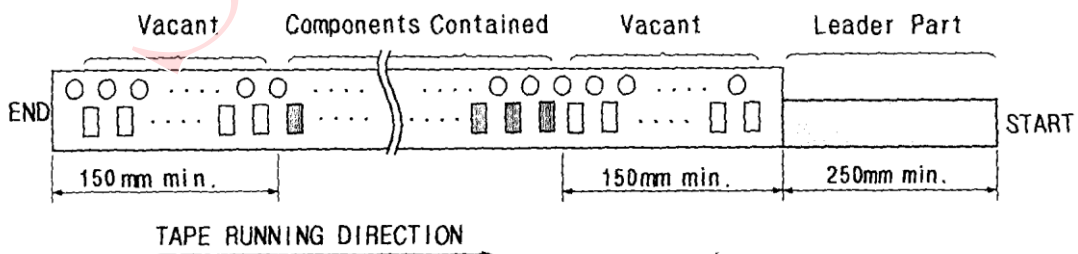
(1) The tape shall be wound around the reel in the direction shown below.



(2) Label

Device Name	
Marking	
User Product Name	
Quantity	
Lot No.	

(3) Leader part and vacant position specifications.

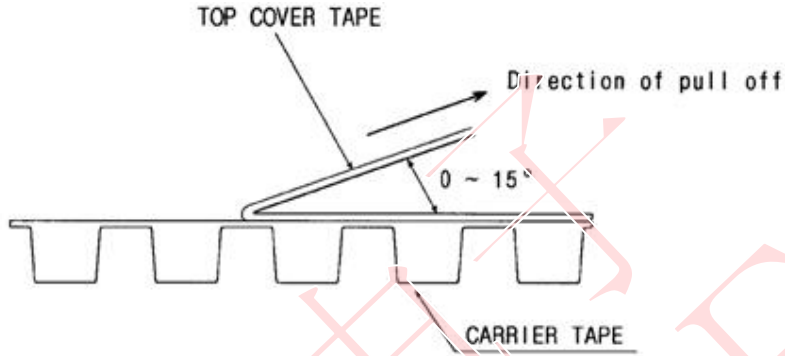


### 11. TAPE SPECIFICATIONS

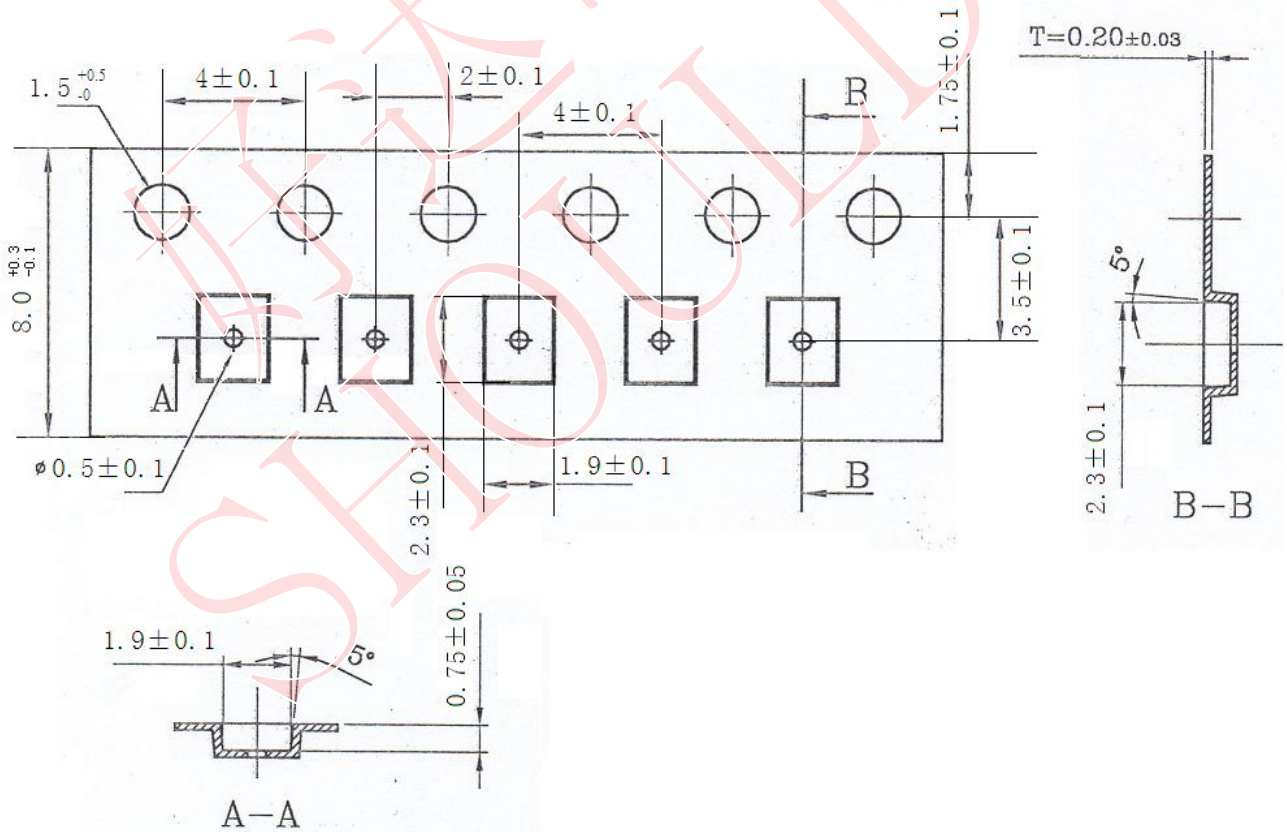
11.1 Tensile Strength of Carrier Tape: 4.4N/mm width

11.2 Top Cover Tape Adhesion (See the below figure)

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

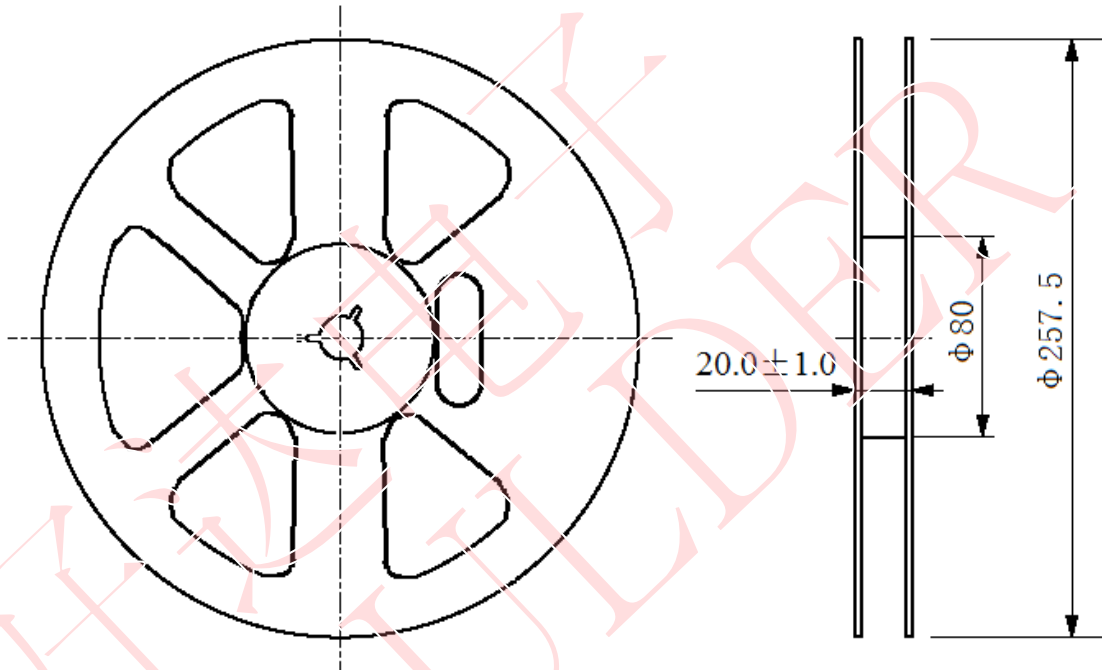


[Figure 1] Carrier Tape Dimensions





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



$\phi$  257.5 Reel Dimension

(in mm)