

规格书编号

SPEC NO: **HDDB05NSSP4SP01**

产品规格书

SPECIFICATION

CUSTOMER 客户: _____

PRODUCT 产品: _____ **SAW DUPLEXER** _____

MODEL NO 型号: _____ **HDDB05NSS-P4** _____

MARKING 印字: _____ **HD C015** _____

PREPARED 编制: _____ **CHECKED 审核:** _____

APPROVED 批准: _____ **D A T E 日期:** _____ **2016-5-20** _____

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

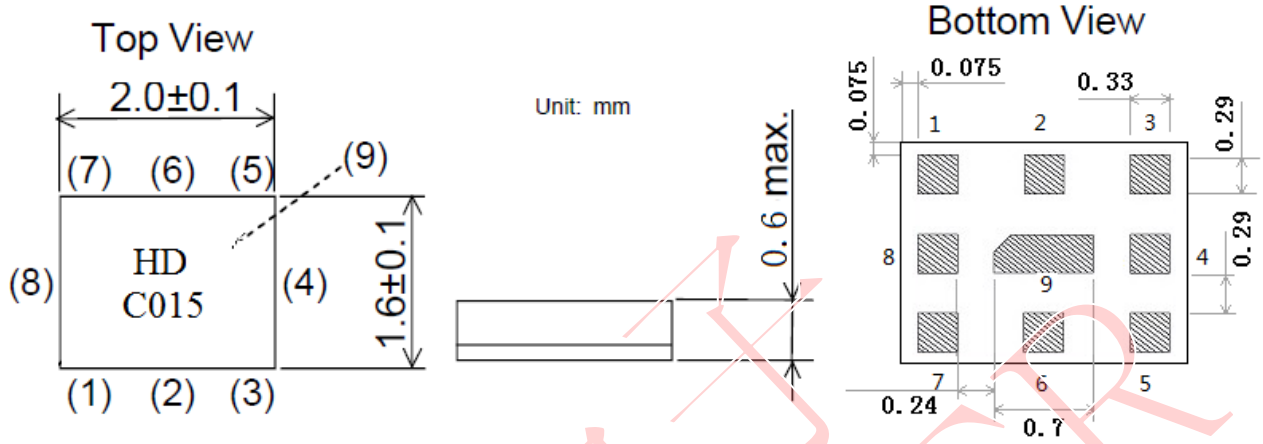
更改历史记录 History Record

更改日期 Date	规格书编号 Spec. No.	产品型号 Part No.	客户产品型号 Customer No.	更改内容描述 Modify Content	备注 Remark
2014-4-21	SP00	HDDB05NSS -P4		The new specification	
2016-05-20	SP01	HDDB05NSS -P4		Complete specifications. Add product application, reliability and other information.	

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 2.0 x 1.6 x 0.6mm)



Marking:

HD: Brand
C015 : Model code

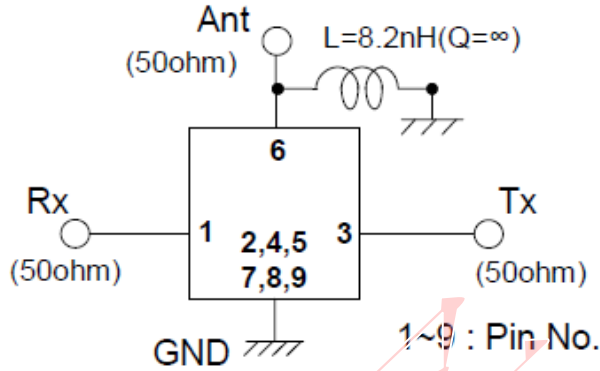
3. Pin Configuration

Pin No.	Pin name	Description
1	RX	Receiver Pin
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	GND	Ground Pin
9	GND	Ground Pin

4. 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

5. TEST CIRCUIT



6. ELECTRICAL SPECIFICATION

Table1. Electrical Specification

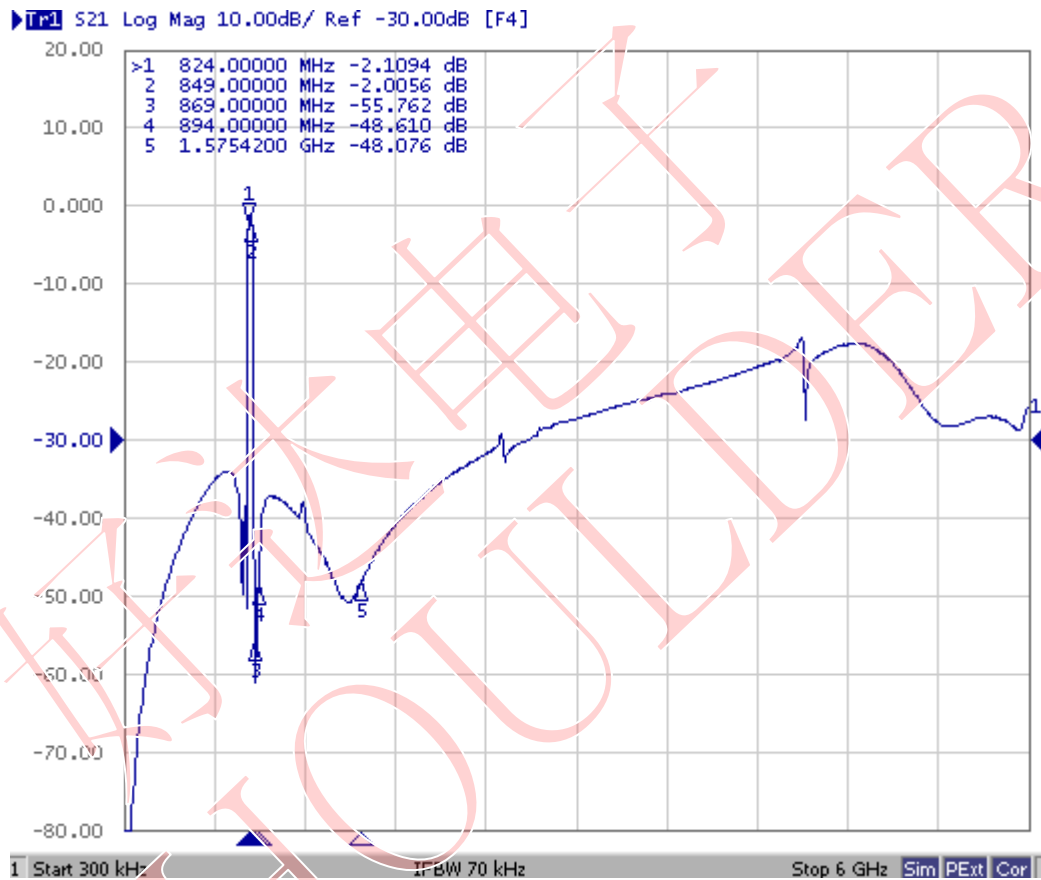
Item		Condition (MHz)	Specification			Unit	Remarks	
			Min	Typ	Max			
TX to ANT	Insertion loss	824~849	-	1.9	2.5	dB		
	Ripple	824~849		0.65	1.2	dB		
	VSWR	ANT	824~849	-	1.5	2.0	-	
		Tx		-	1.5	2.0	-	
	Input Power	824~849	+29dBm Ta=+50°C 5000h,CW			-		
	Absolute attenuation	DC~750	25	33	-	dB		
		779~804	30	40	-	dB		
869~894		45	50	-	dB			
1574~1577		30	45	-	dB			
1648~1698		30	38	-	dB			
2472~2547	23	31	-	dB				
ANT to RX	Insertion loss	869~894	-	2.1	2.7	dB		
	Ripple	869~894		0.7	1.5	dB		
	VSWR	ANT	869~894	-	1.85	2.2	-	
		Rx		-	1.6	2.2	-	
	Absolute attenuation	779~804	50	55	-	dB		
		824~849	50	58	-	dB		
		1739~1788	45	58	-	dB		
2400~2500		40	52	-	dB			
2607~2682	40	50	-	dB				

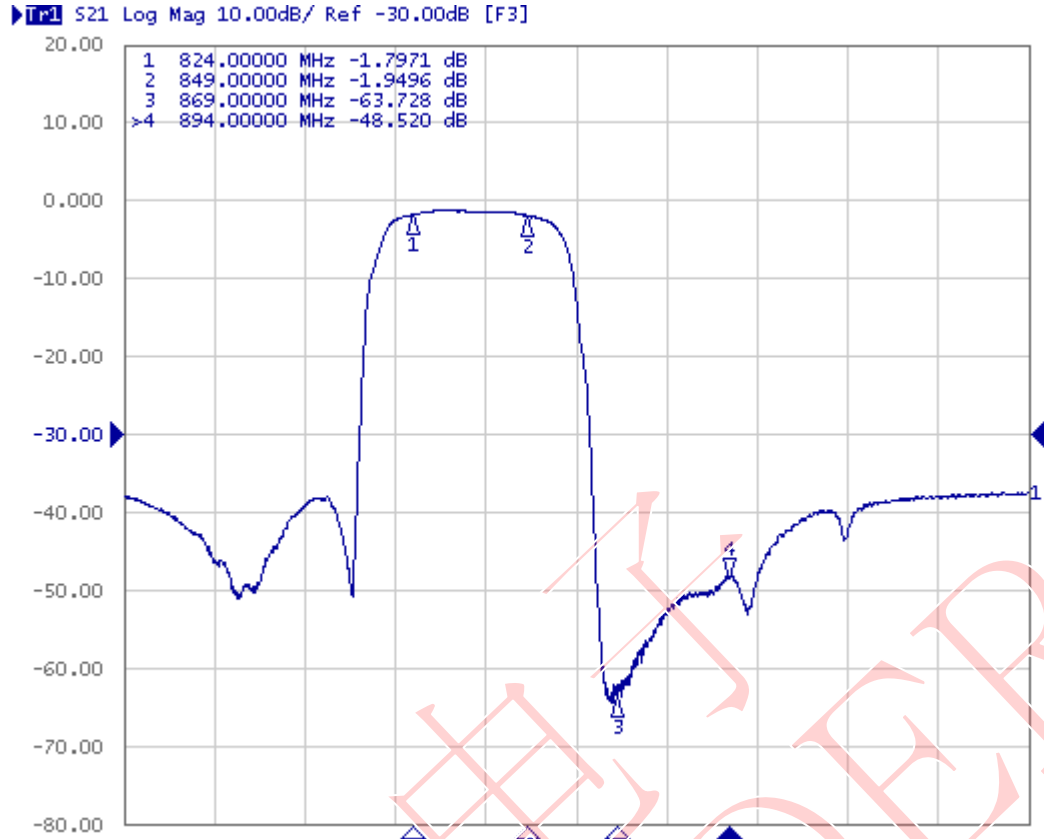
Table2. Electrical Specification

Item		Condition (MHz)	Specification			Unit	Remarks
			Min	Typ	Max		
TX to RX	Isolation	824~849	50	58	-	dB	
		869~894	46	50	-	dB	
Terminating Impedance		Tx port	50			Ohm	Single-ended
		Rx port	50			Ohm	Single-ended
		Ant port	50//8.2nH			Ohm	Single-ended
Operating Temperature			-30 to +85			oC	

6. Typical frequency response

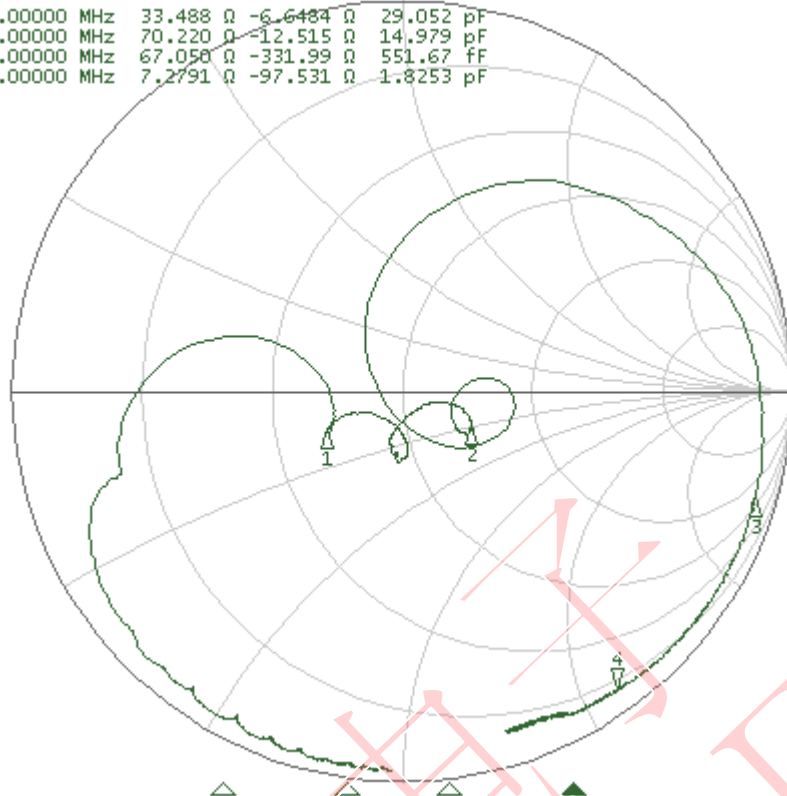
Tx to Ant





▶ **Tr3** S11 Smith (R+jX) Scale 1.000U [F3]

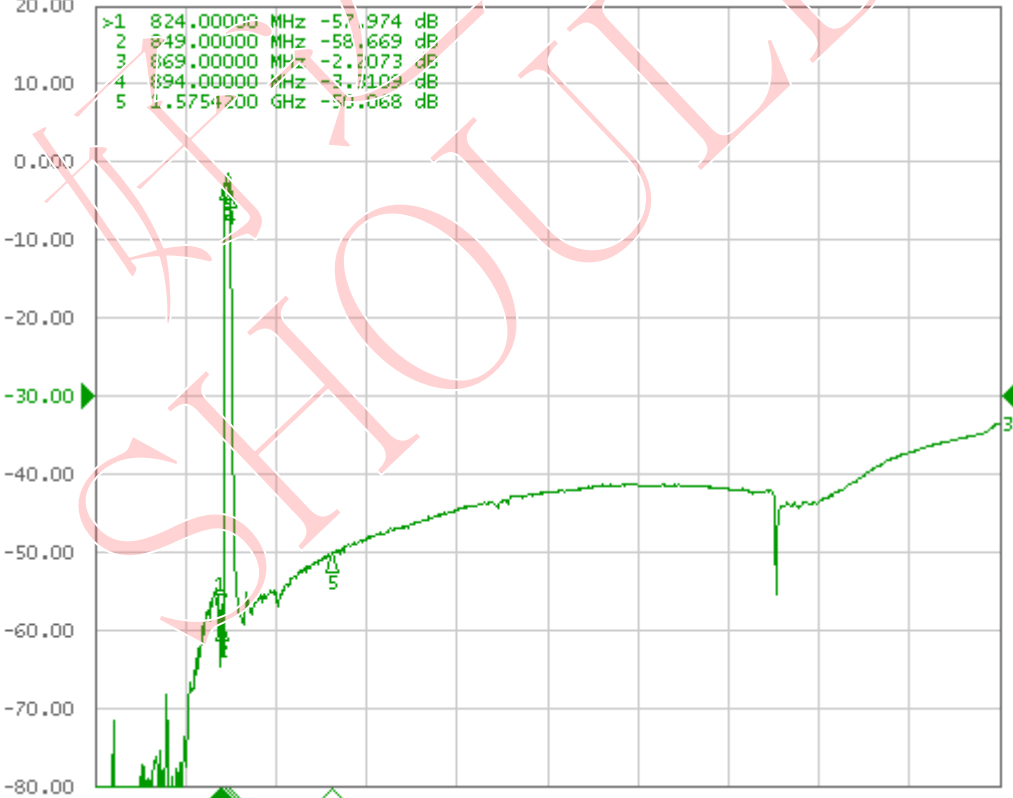
1	824.00000 MHz	33.488 Ω	-6.6484 Ω	29.052 pF
2	849.00000 MHz	70.220 Ω	-12.515 Ω	14.979 pF
3	869.00000 MHz	67.050 Ω	-331.99 Ω	551.67 fF
4	894.00000 MHz	7.2791 Ω	-97.531 Ω	1.8253 pF



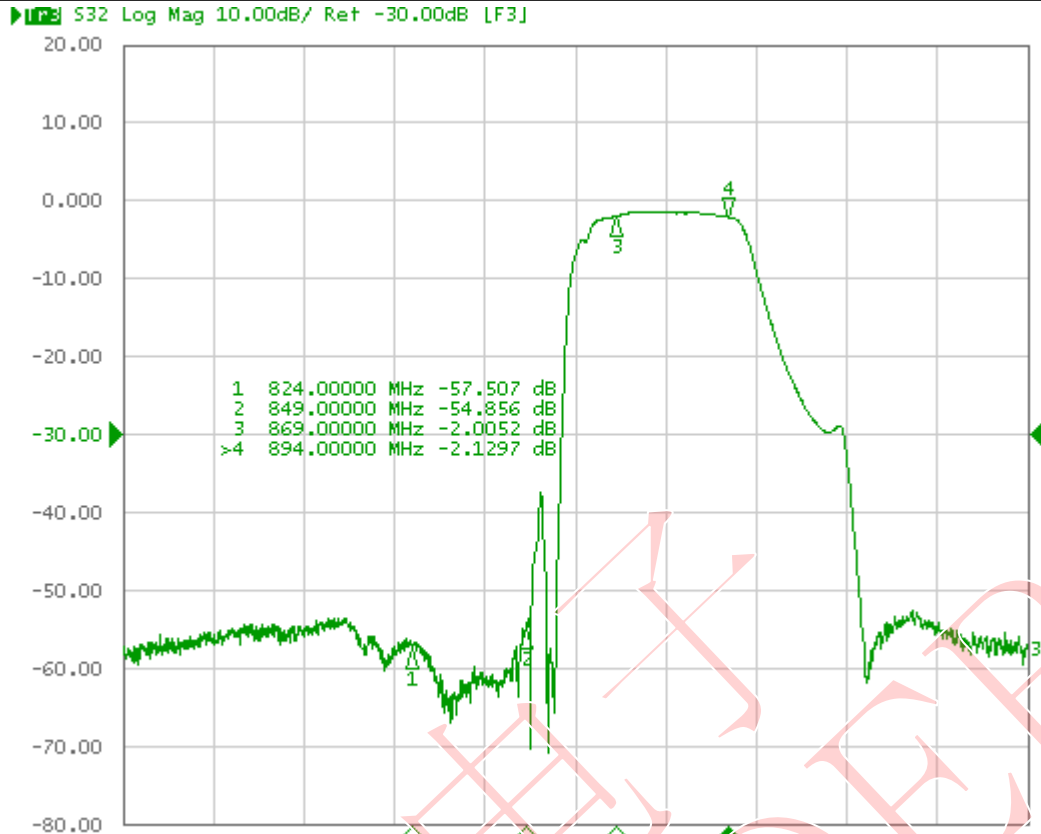
1 Center 860 MHz IFBW 70 kHz Span 200 MHz Sim PExt Cor

Ant to Rx

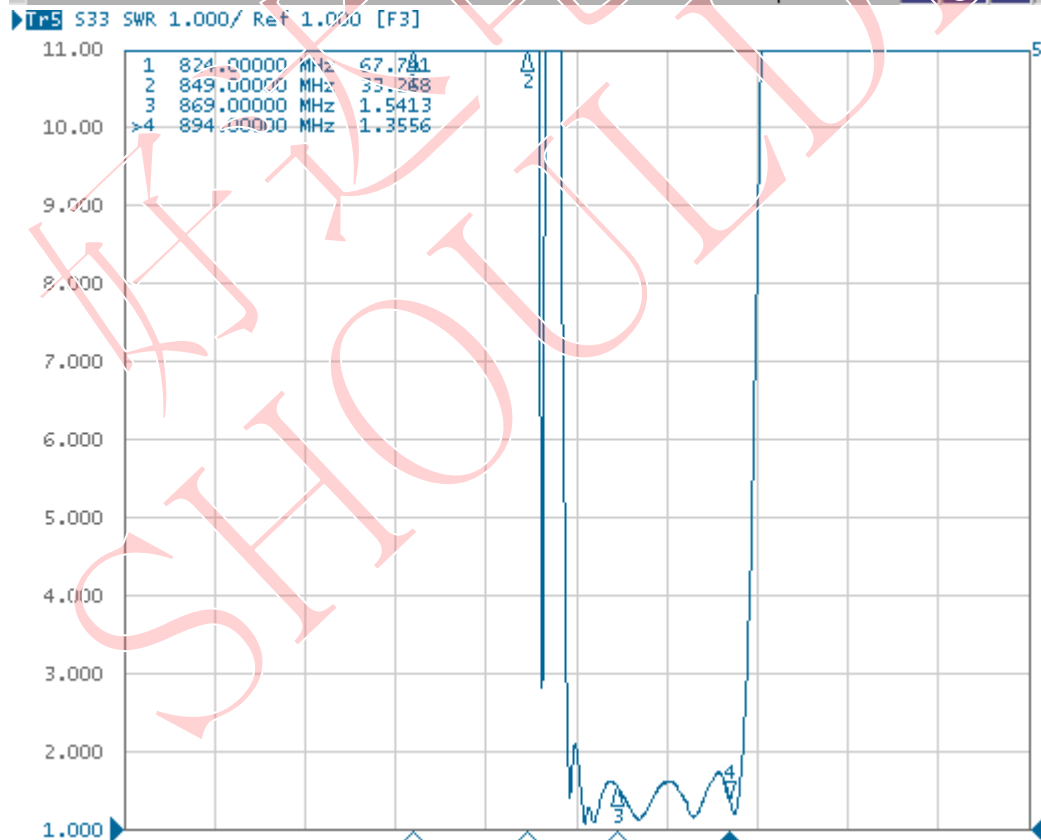
▶ **Tr3** S23 Log Mag 10.00dB/ Ref -30.00dB [F4]



1 Start 300 kHz IFBW 70 kHz Stop 6 GHz Sim PExt Cor



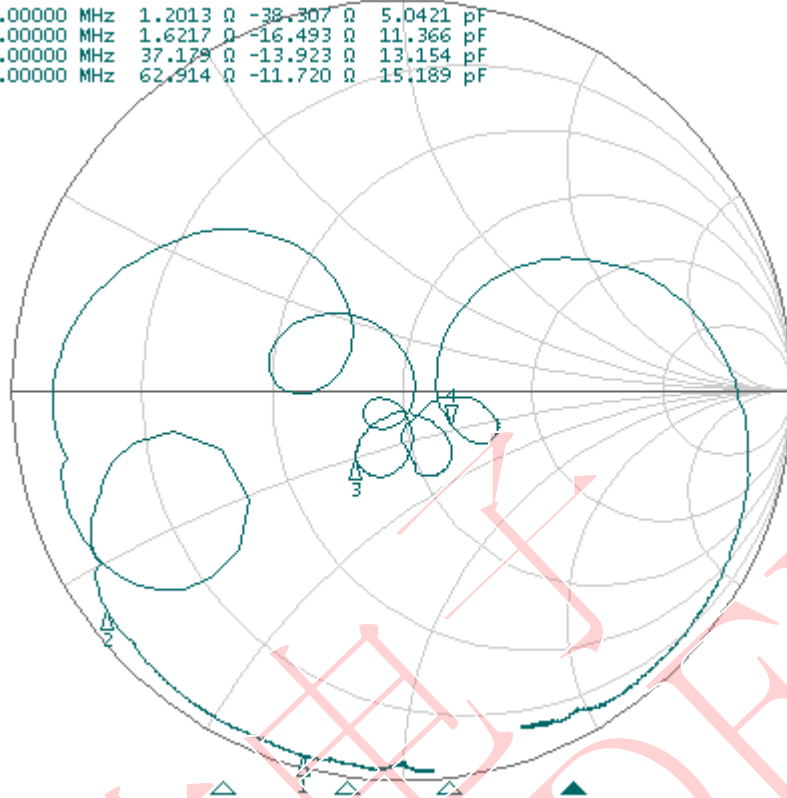
1 Center 860 MHz IFBW 70 kHz Span 200 MHz Sim PE Cor



1 Center 860 MHz IFBW 70 kHz Span 200 MHz Sim PE Cor

▶ Tr8 S33 Smith (R+jX) Scale 1.000U [F3]

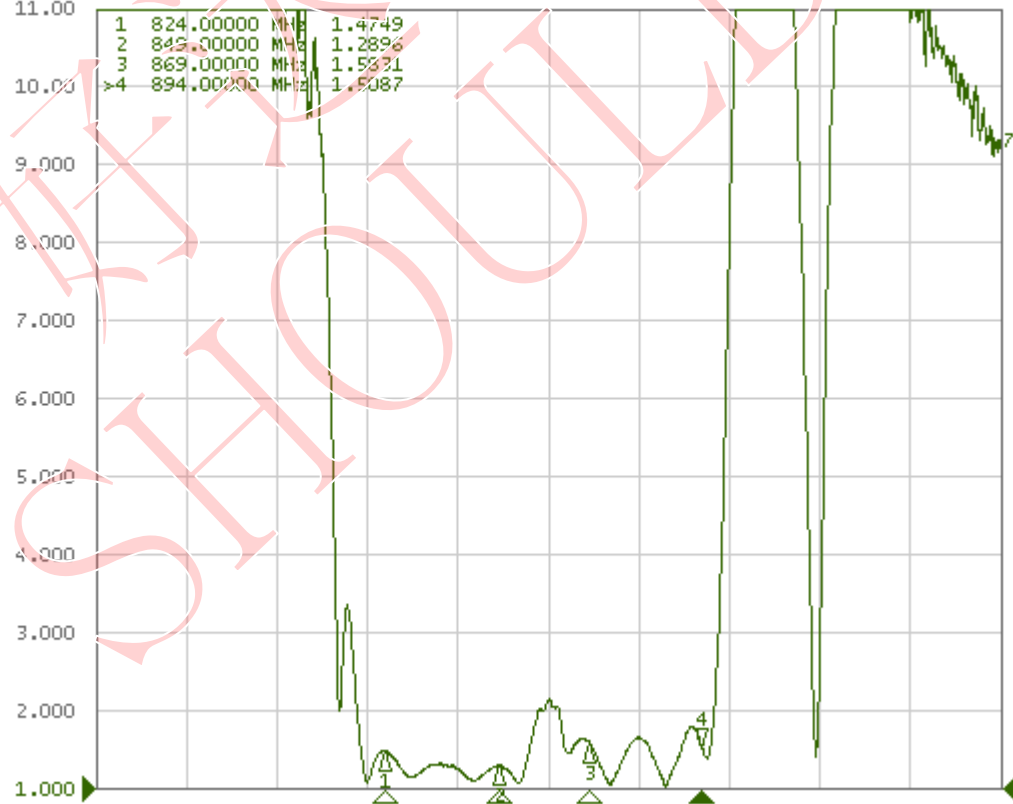
1	824.00000 MHz	1.2013 Ω	-38.307 Ω	5.0421 pF
2	849.00000 MHz	1.6217 Ω	-16.493 Ω	11.366 pF
3	869.00000 MHz	37.179 Ω	-13.923 Ω	13.154 pF
4	894.00000 MHz	62.914 Ω	-11.720 Ω	15.189 pF



1 Center 860 MHz IFBW 70 kHz Span 200 MHz Sim PExt Cor

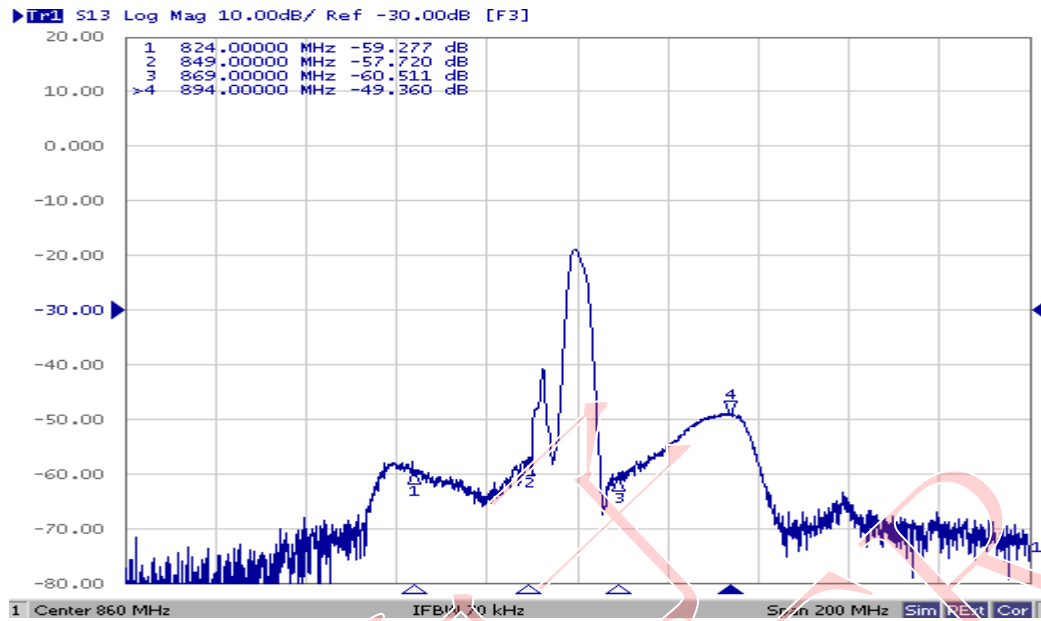
▶ Tr7 S22 SWR 1.000/ Ref 1.000 [F3]

1	824.00000 MHz	1.4749
2	849.00000 MHz	1.2896
3	869.00000 MHz	1.5331
4	894.00000 MHz	1.5087



1 Center 860 MHz IFBW 70 kHz Span 200 MHz Sim PExt Cor

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.

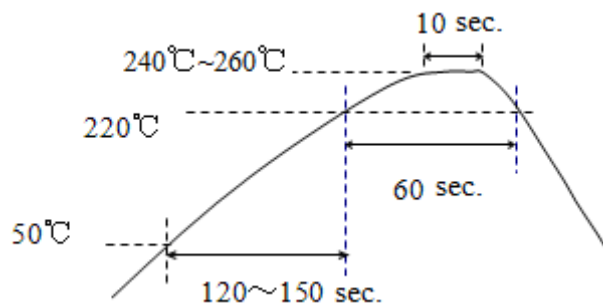
7.4 Resistance to solder heat

- 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

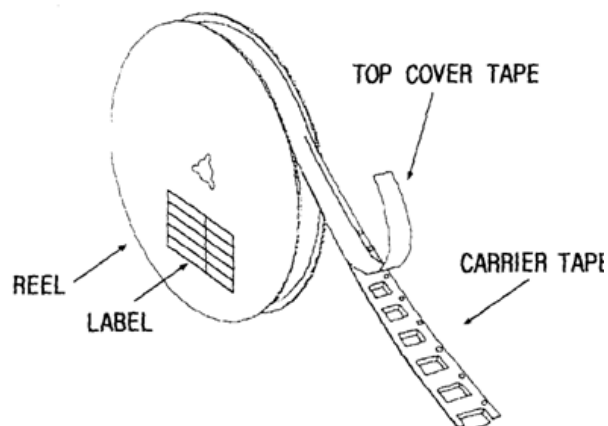
(3) The product shall be packed properly not to be damaged during transportation and storage.

9.2 Reeling Quantity

10000 pcs/reel ϕ 257.5mm

9.3 Taping Structure

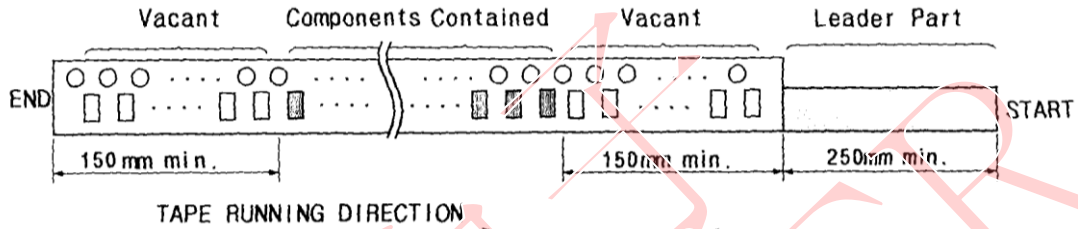
(1) The tape shall be wound around the reel in the direction shown below.



(2) Label

Device Name	
Marking	
User Product Name	
Quantity	
Lot No.	

(3) Leader part and vacant position specifications.

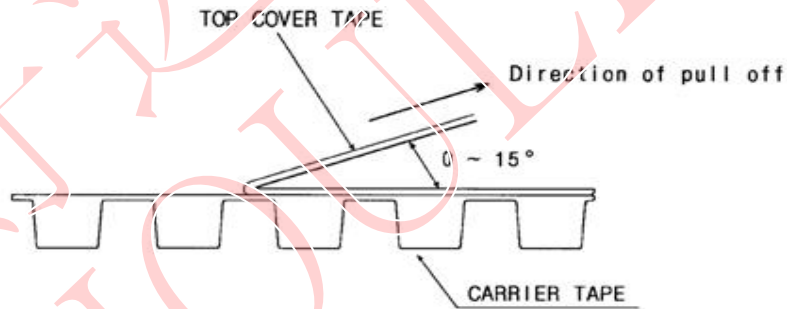


10. TAPE SPECIFICATIONS

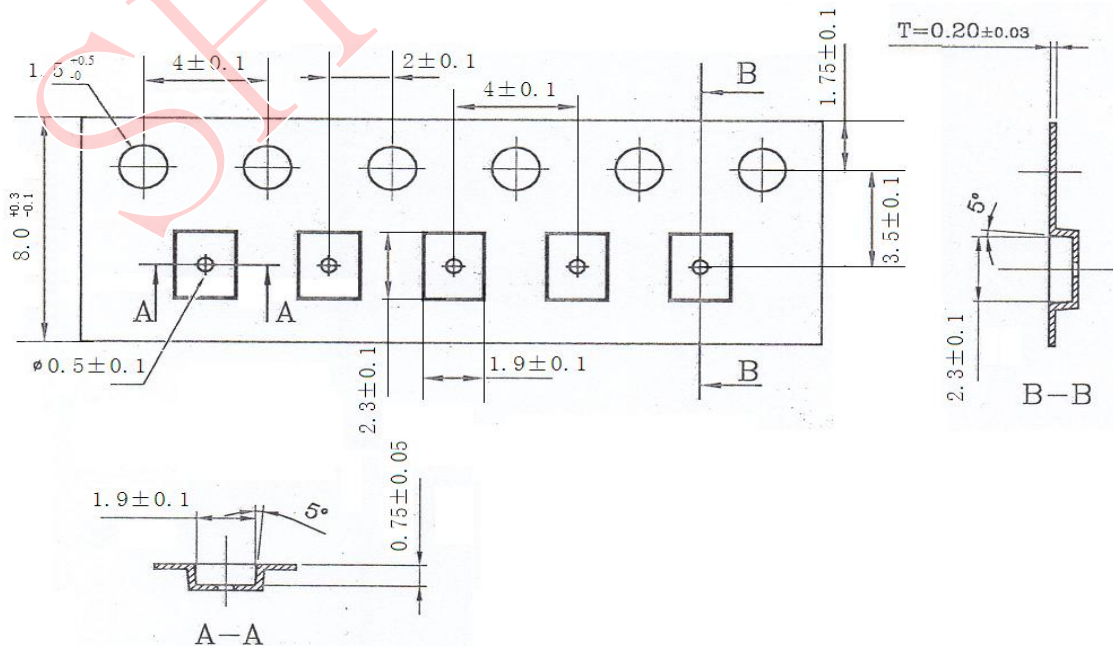
10.1 Tensile Strength of Carrier Tape: 4.4N/mm width

10.2 Top Cover Tape Adhesion (See the below figure)

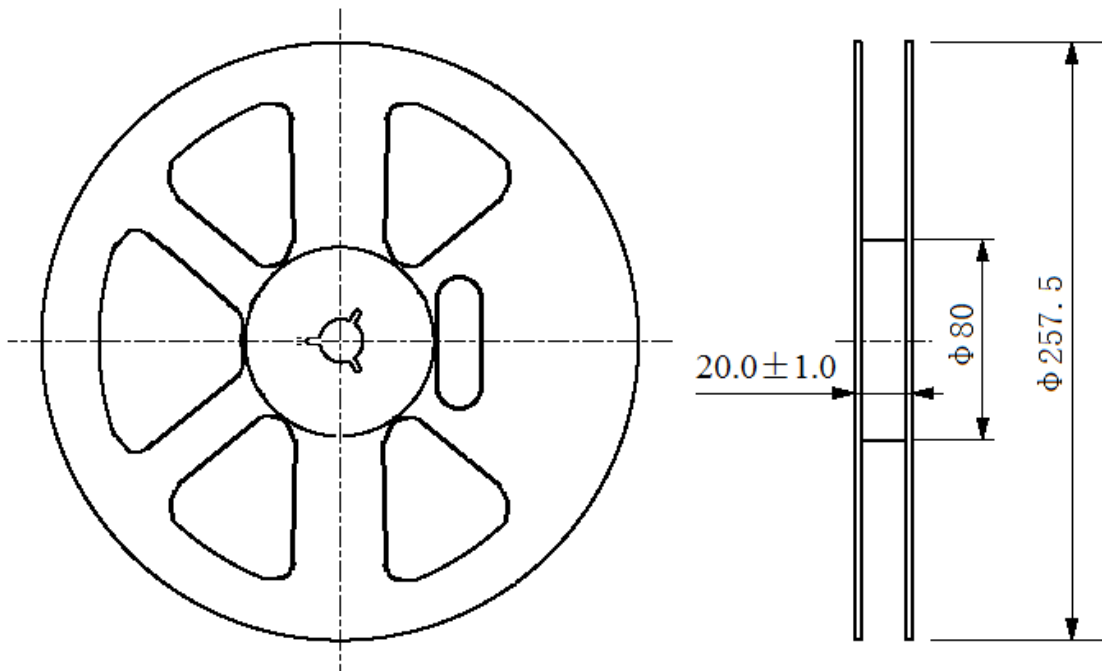
- (1) pull off angle: 0~15°
- (2) speed: 300mm/min.
- (3) force: 20~70g



[Figure 1] Carrier Tape Dimensions



[Figure 2] 10000 pcs/reel ϕ 257.5mm



ϕ 257.5 Reel Dimension

(in mm)