



# TAI-SAW TECHNOLOGY CO., LTD.

No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,  
Taoyuan, 324, Taiwan, R.O.C.

TEL: 886-3-4690038 FAX: 886-3-4697532

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## Product Specifications Approval Sheet


Product Name: Duplexer 836.5/881.5MHz 25MHz BW SMD 2.0x1.6 mm

TST Parts No.: TF0089A

Customer Part No.: \_\_\_\_\_

Customer signature required
Company: _____
Division: _____
Approved by : _____
Date: _____

Checked by: \_\_\_\_\_ Andy Yu 

Approved by: \_\_\_\_\_ Bob Chau 

Date: \_\_\_\_\_ 2013, 11, 13

1. Customer signed back is required before TST can proceed with sample build and receive orders.
2. Orders received without customer signed back will be regarded as agreement on the specifications.
3. Any specifications changes must be approved upon by both parties and a new revision of specifications shall be released to reflect the changes



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## SAW Duplexer 836.5/881.5MHz 25MHz BW SMD 2.0×1.6 mm

MODEL NO.: TF0089A

REV. No.: 1.0

### A. MAXIMUM RATING:

1. Maximum Input Power: 29 dBm
2. DC voltage: 0 V
3. Operating Temperature: -30°C to +85°C
4. Storage Temperature: -40°C to +85°C

RoHS Compliant

Lead-free soldering

### B. ELECTRICAL CHARACTERISTICS:

Tx to Ant		Specifications			
		Unit	Minimum	Typical	Maximum
Parameters Description	Condition [MHz]				
Insertion Loss	824.0 ~ 849.0	dB	-	1.4	1.9
Ripple	824.0 ~ 849.0	dB <sub>p-p</sub>	-	0.4	1.0
VSWR of Ant Port	824.0 ~ 849.0	-	-	1.5	2.0
VSWR of Tx Port	824.0 ~ 849.0	-	-	1.6	2.0
Attenuation	779.0 ~ 804.0	dB	30	39	-
	869.0 ~ 894.0	dB	45	51	-
	1574.0 ~ 1577.0	dB	45	48	-
	1648.0 ~ 1698.0	dB	45	48	-
	2472.0 ~ 2547.0	dB	25	33	-

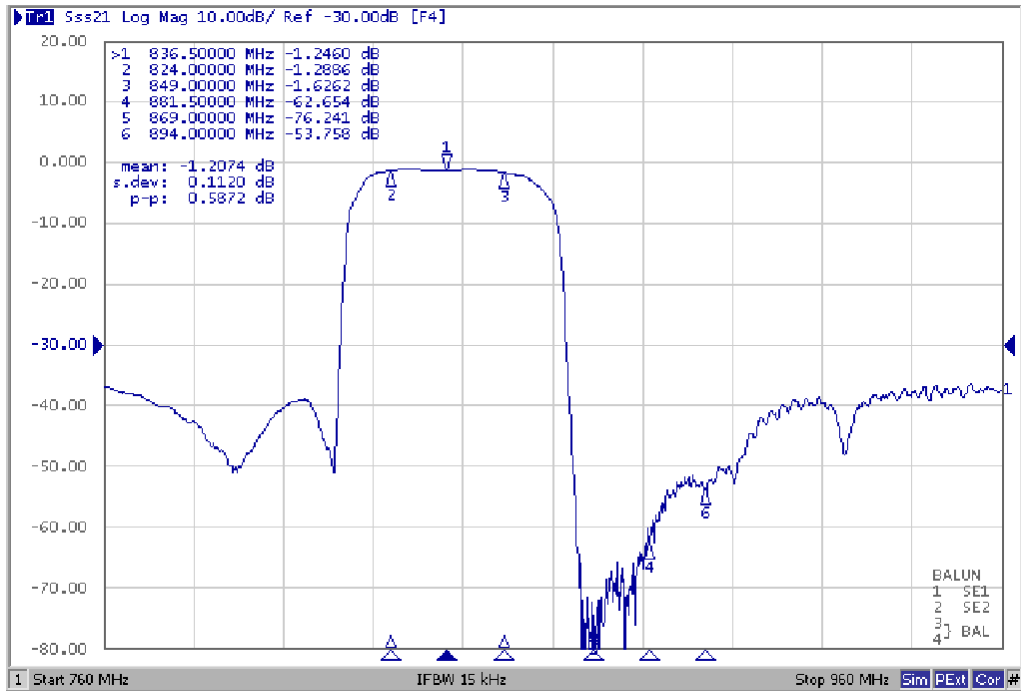
Ant to Rx		Specifications			
Parameters Description	Condition [MHz]	Unit	Minimum	Typical	Maximum
Insertion Loss	869.0 ~ 894.0	dB	-	1.7	2.2
Ripple	869.0 ~ 894.0	dB <sub>p-p</sub>	-	0.4	1.1
VSWR of Ant Port	869.0 ~ 894.0	-	-	1.6	2.0
VSWR of Rx Port	869.0 ~ 894.0	-	-	1.6	2.0
Attenuation	824.0 ~ 849.0	dB	51	58	-
	1738.0 ~ 1788.0	dB	40	54	-
	1850.0 ~ 1910.0	dB	40	54	-
	1920.0 ~ 1980.0	dB	40	53	-
	2400.0 ~ 2500.0	dB	40	52	-
	3476.0 ~ 3576.0	dB	40	49	-
Amplitude balance( S <sub>31</sub> /S <sub>41</sub>  )	869.0 ~ 894.0	dB	-1.0	-0.2/+0.2	+1.0
Phase balance $\Phi(S_{31}) - \Phi(S_{41}) + 180^\circ$	869.0 ~ 894.0	deg	-10	-2/+2	+10

Tx to Rx		Specifications			
Parameters Description	Condition [MHz]	Unit	Minimum	Typical	Maximum
Isolation in Tx Band	824.0 ~ 849.0	dB	57	59	-
Isolation in Rx Band	869.0 ~ 894.0	dB	49	52	-

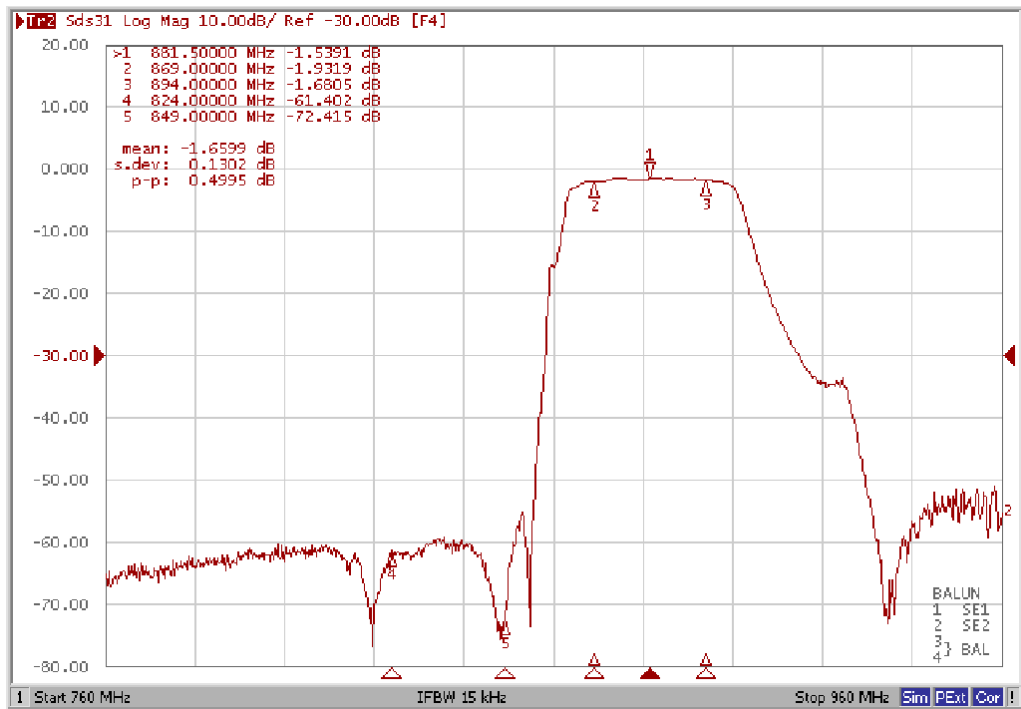
**Notes :** (1) With Matching Network .

### C. Frequency Characteristics :

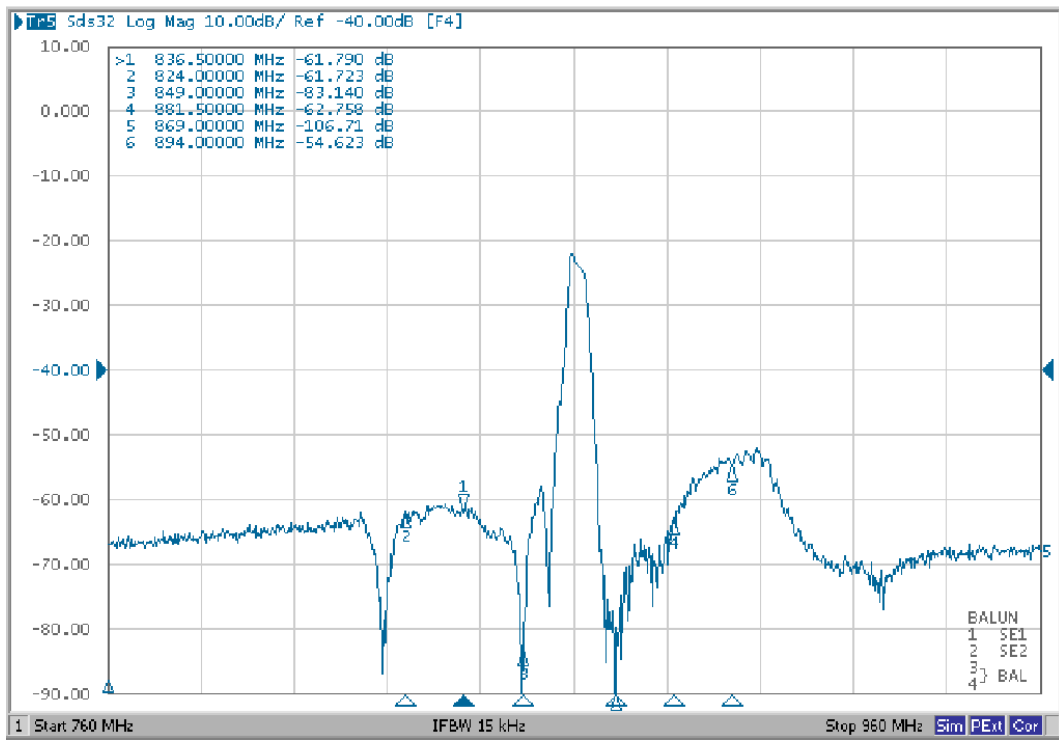
#### Tx to Ant



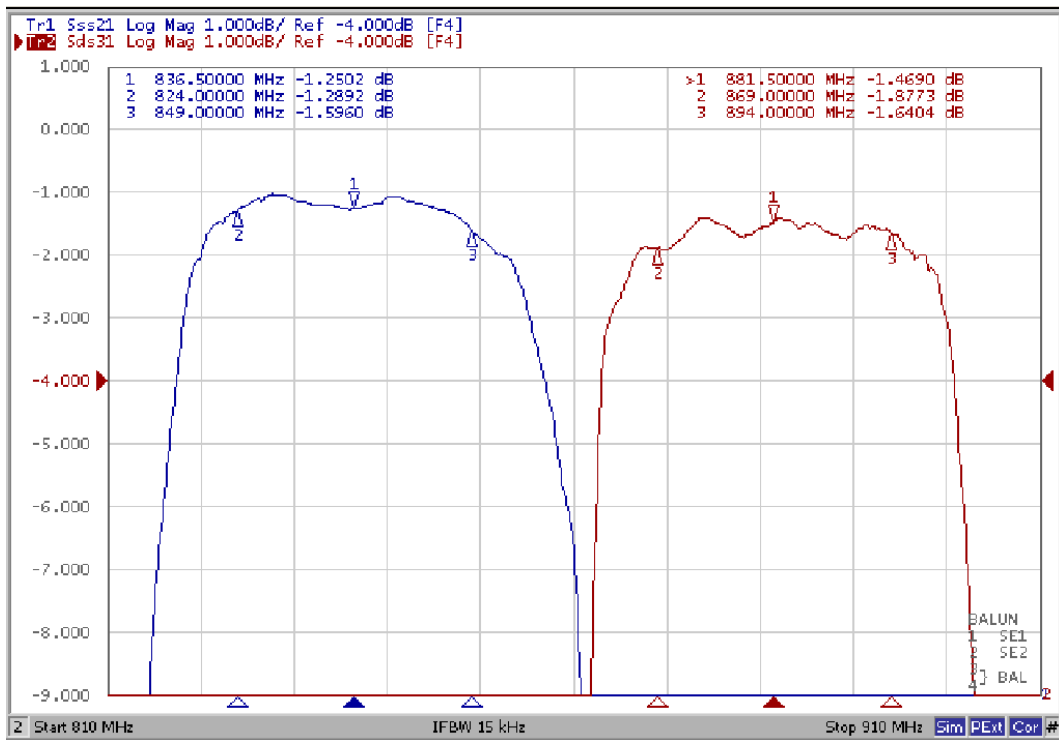
#### Ant to Rx



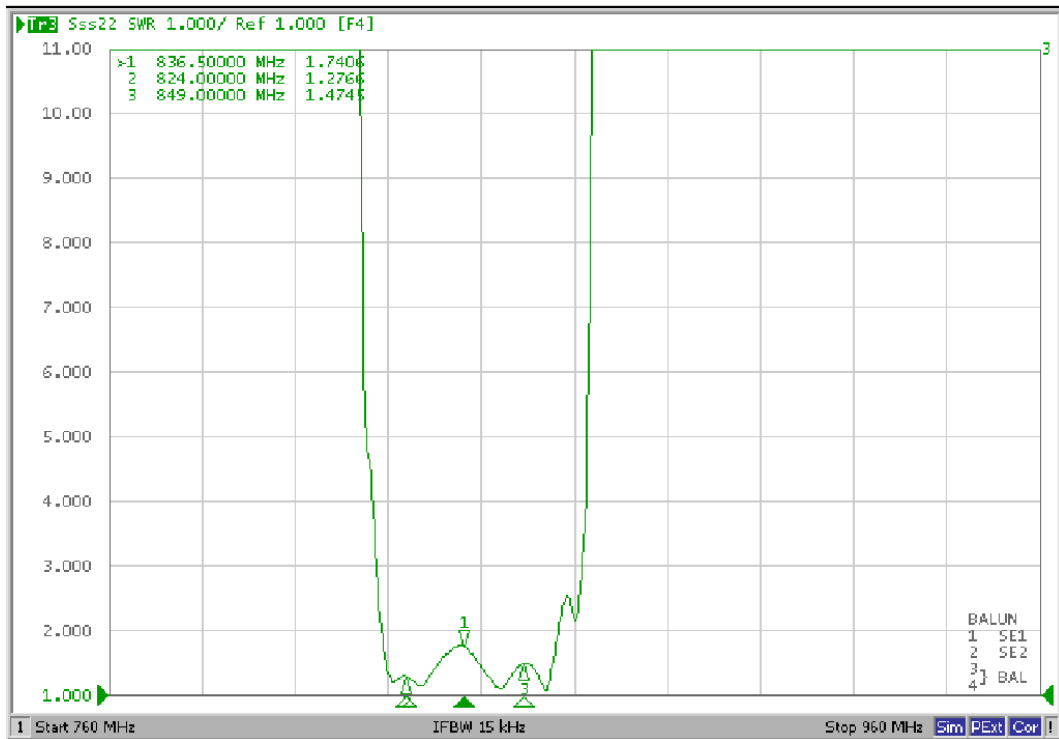
## Isolation



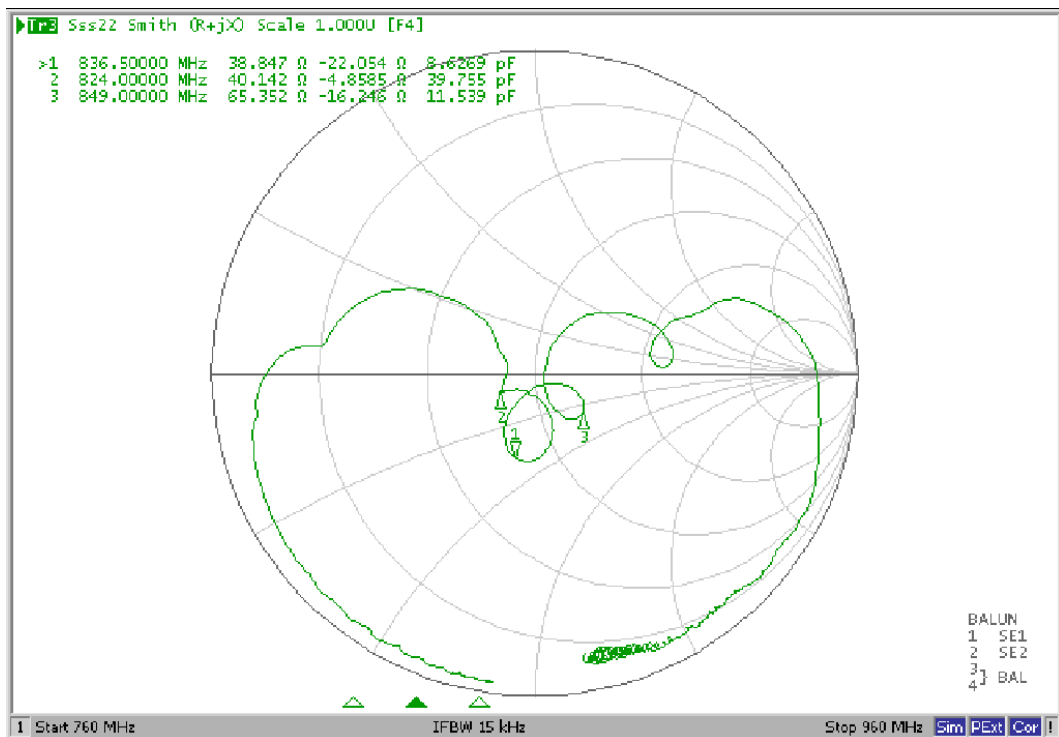
## Ripple



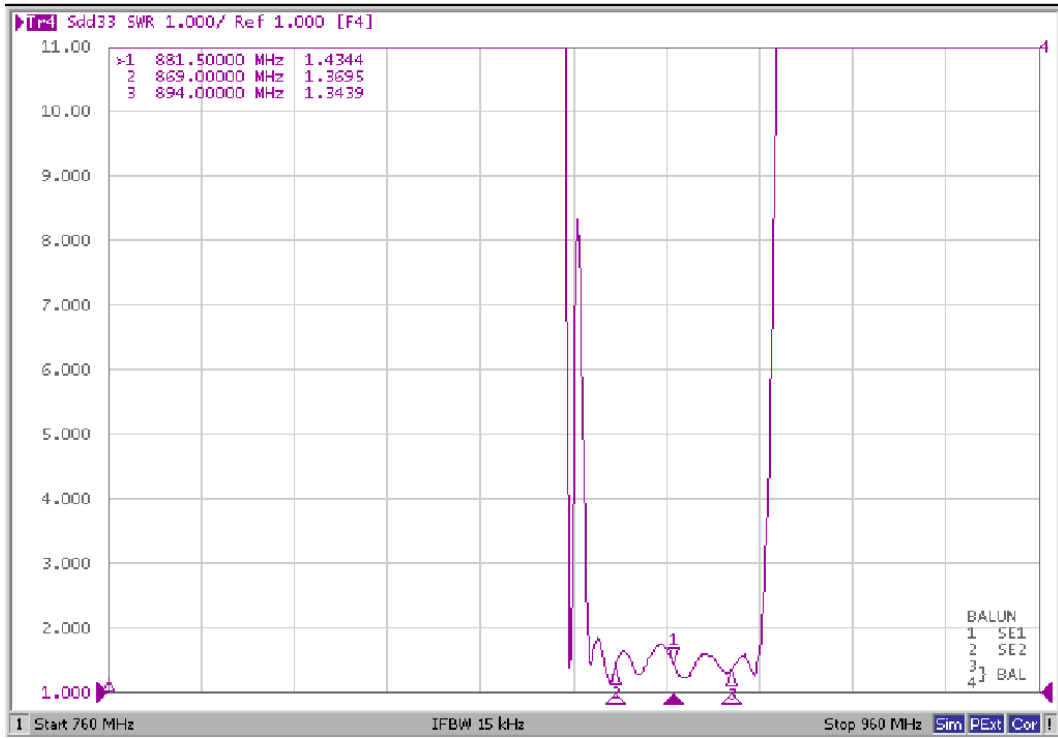
## VSWR (Tx Port)



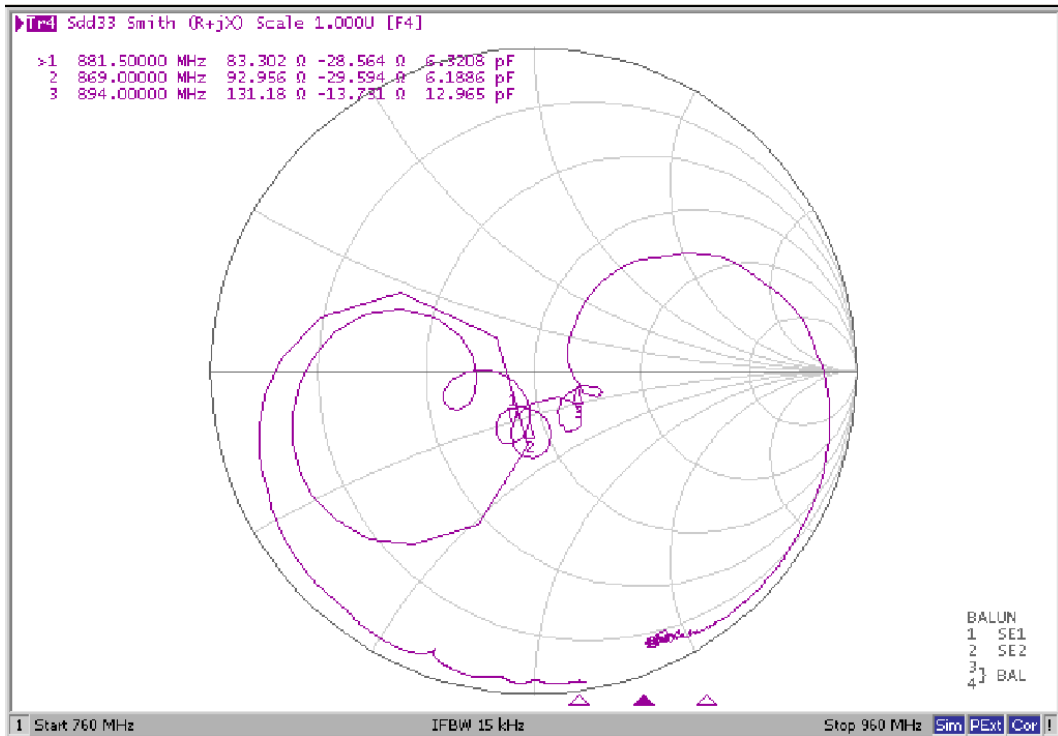
## Smith Chart (Tx Port)



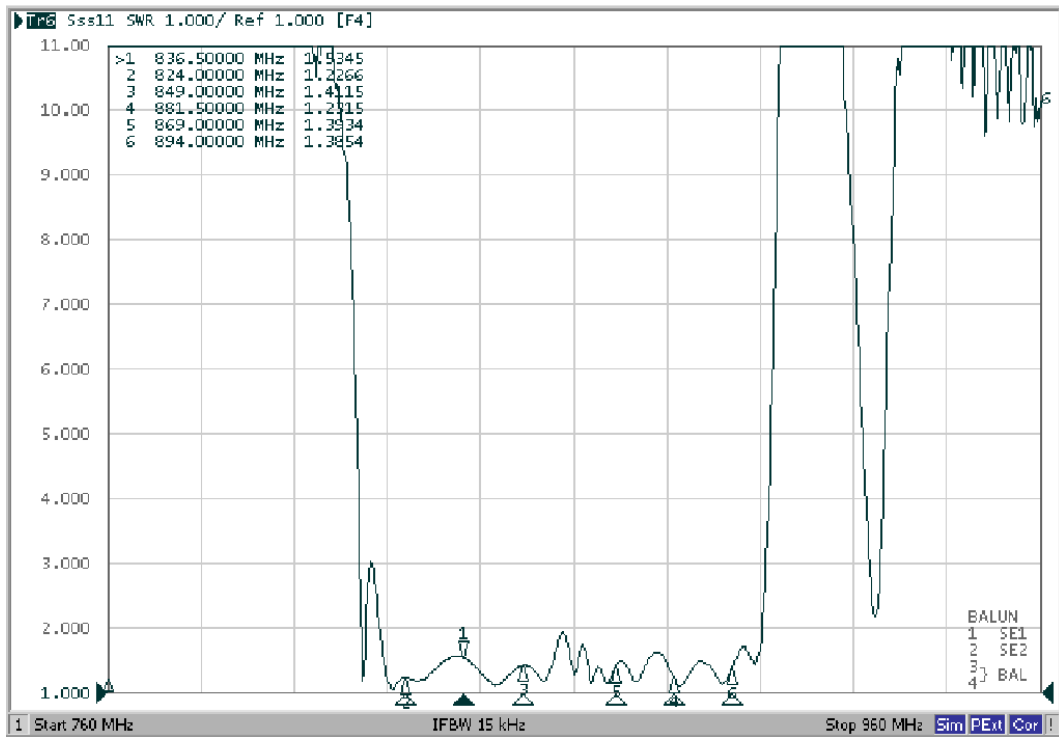
## VSWR (Rx Port)



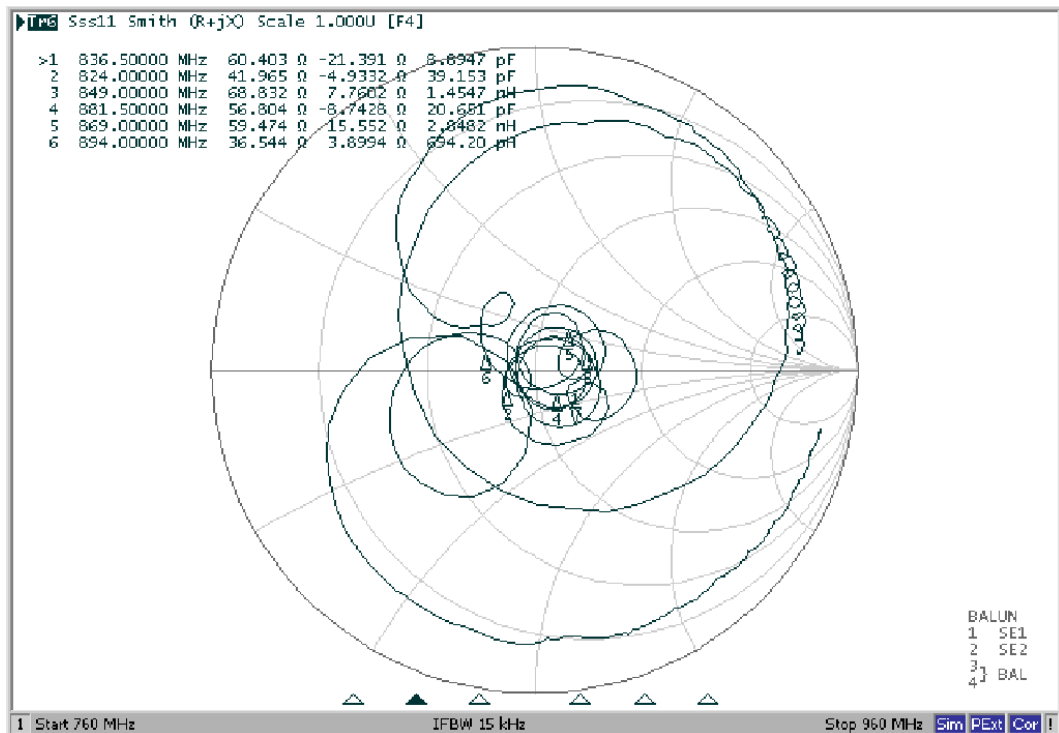
## Smith Chart (Rx Port)



## VSWR (ANT Port)



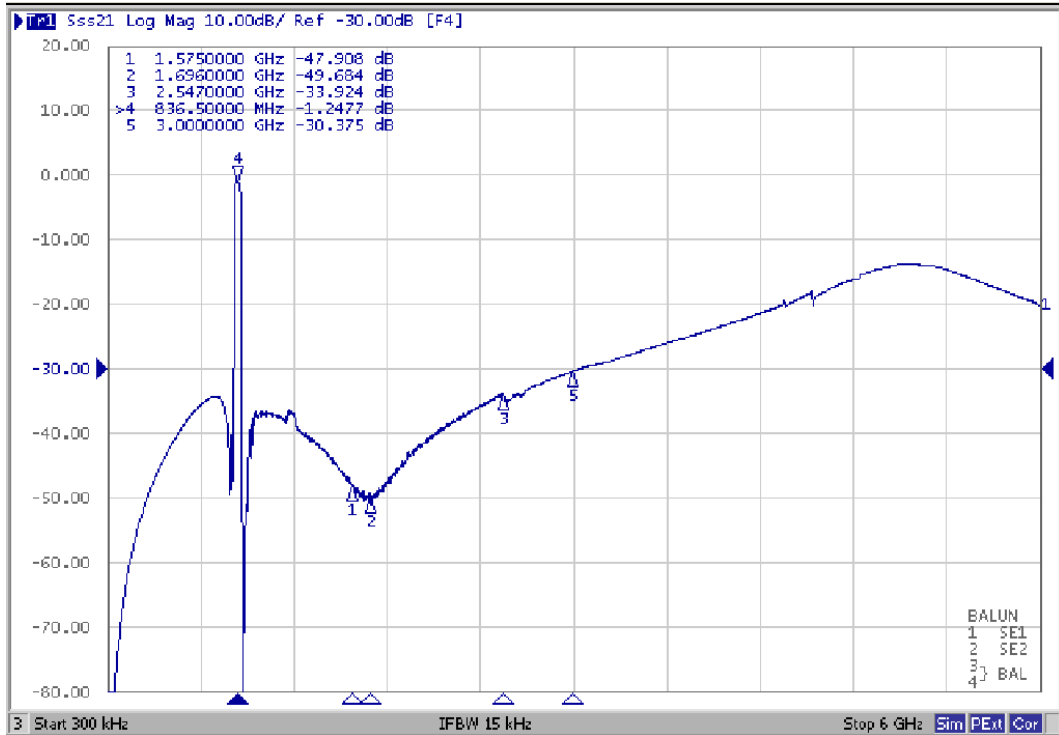
## Smith Chart (ANT Port)



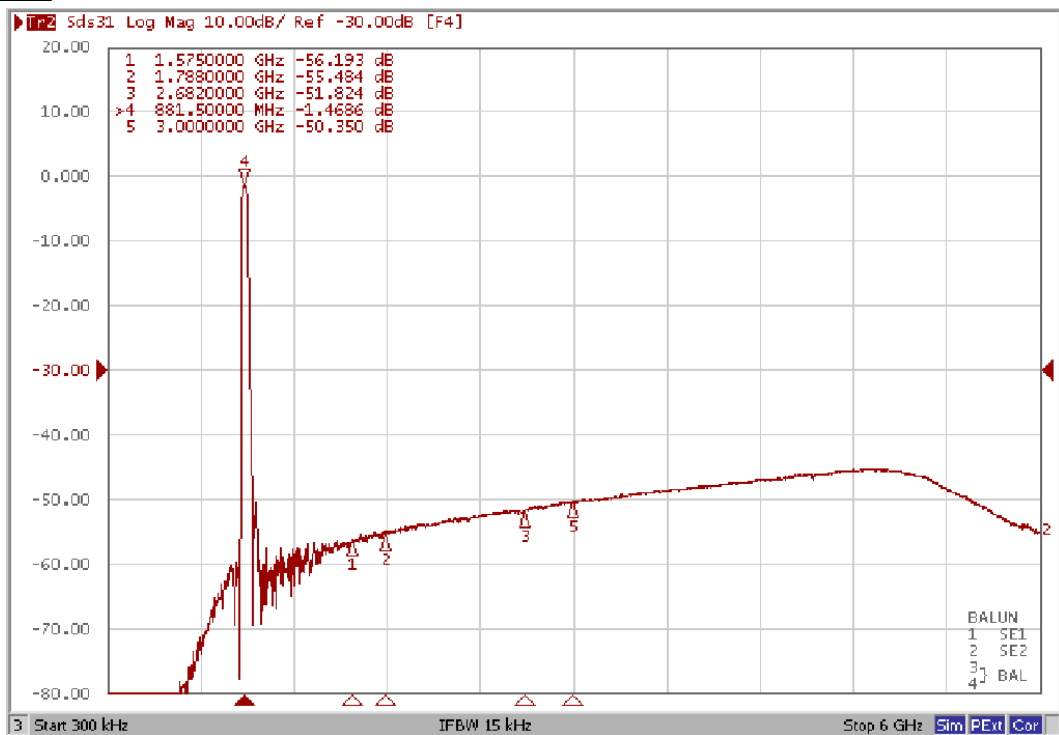


## Wide Span

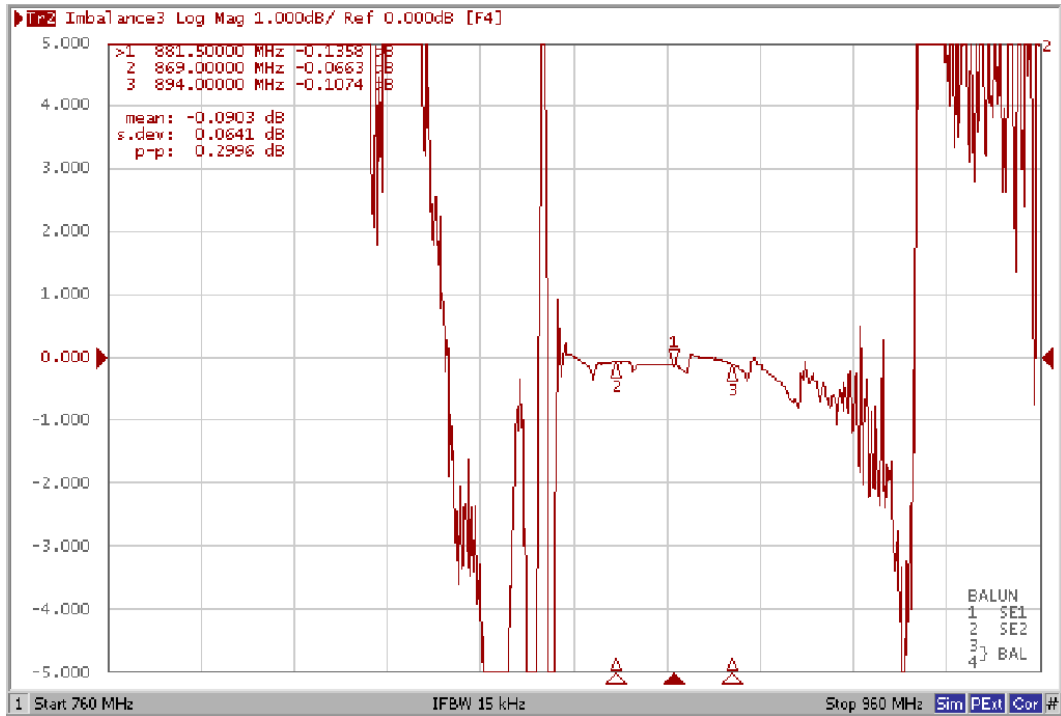
**Tx**



**Rx**



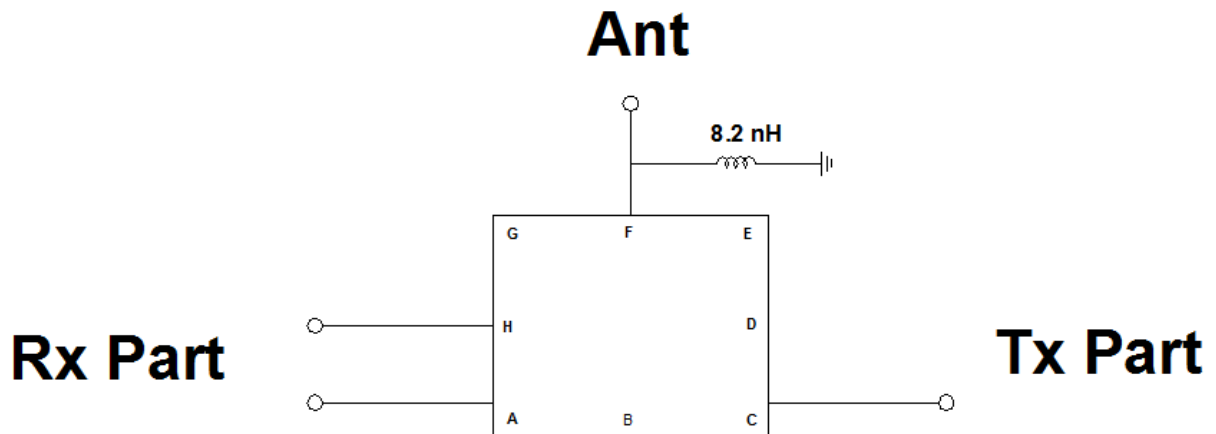
### Amplitude balance of Ant to Rx+/Rx-



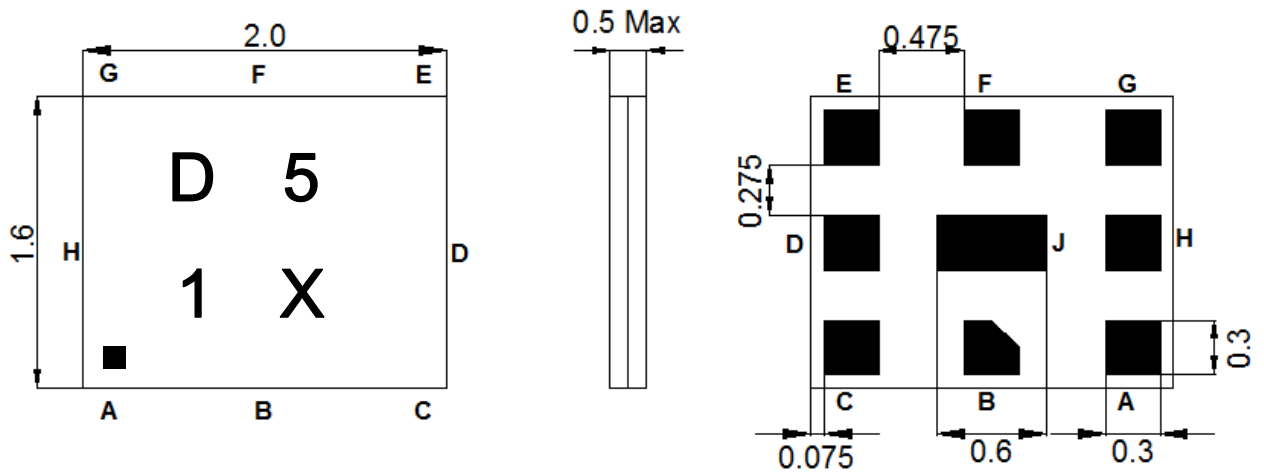
### Phase balance of Ant to Rx+/Rx-



**D. MEASUREMENT CIRCUIT:**



**E. OUTLINE DRAWING:**



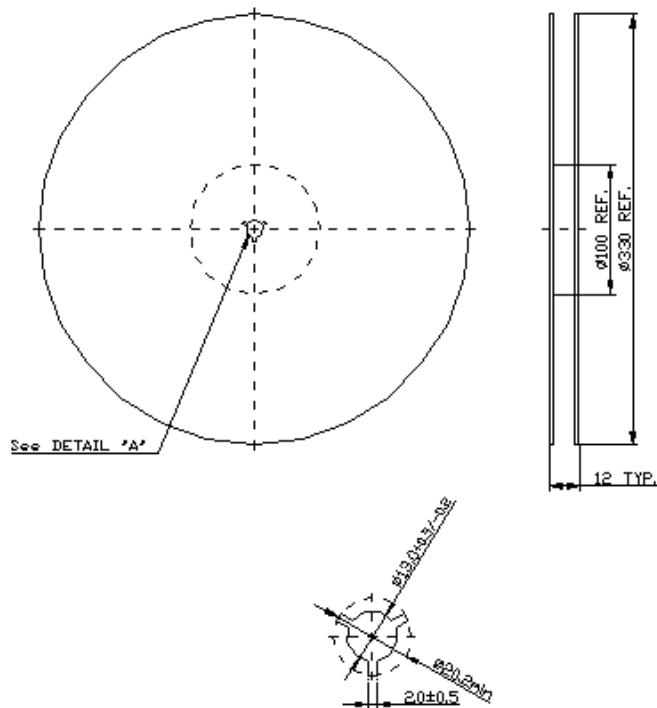
Marking Descriptions	
D	Duplexer Application
5	Band Class
1	Series Number
X	Date Code(Year+Month)

Pin Description	
B,D,E,G,J	Ground
F	Ant
C	Tx (836.5MHz)
A,H	Rx (881.5MHz)

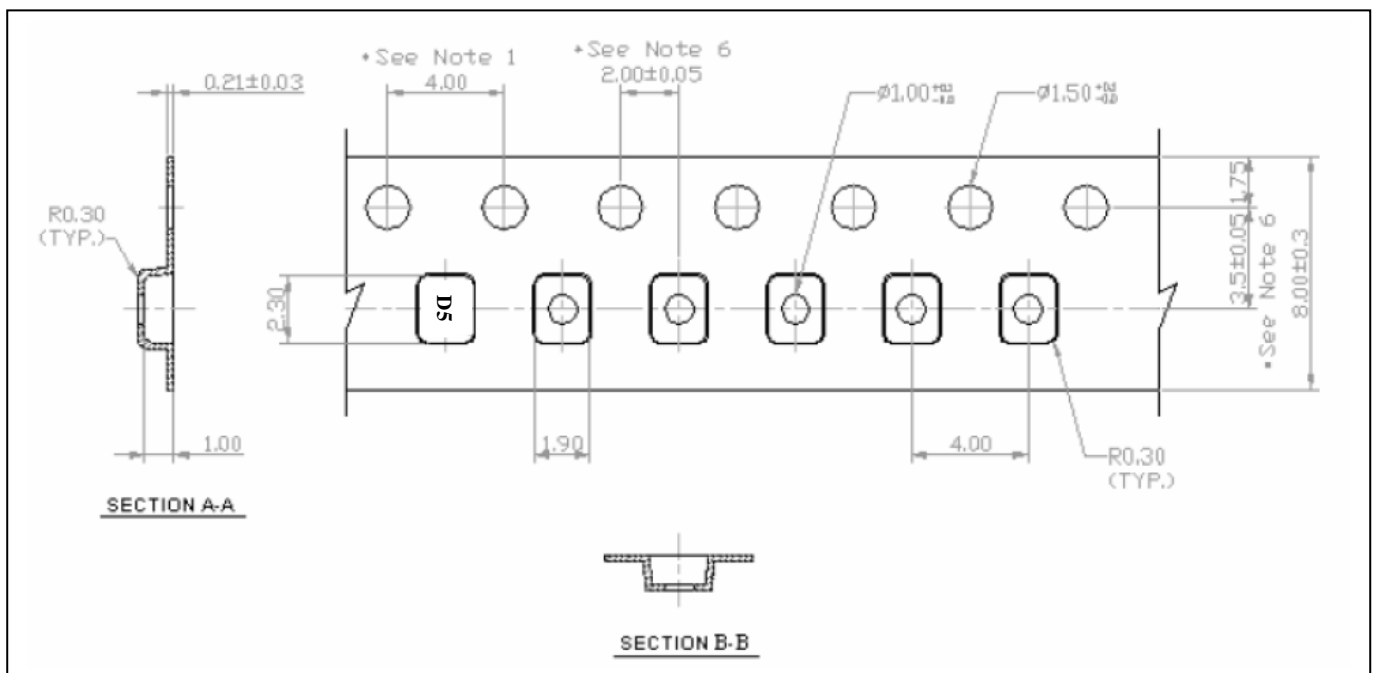
## E. PACKING:

### 1. REEL DIMENSION

(Please refer to FR-75D10 for packing quantity)



### 2. TAPE DIMENSION



**F. RECOMMENDED REFLOW PROFILE :**

