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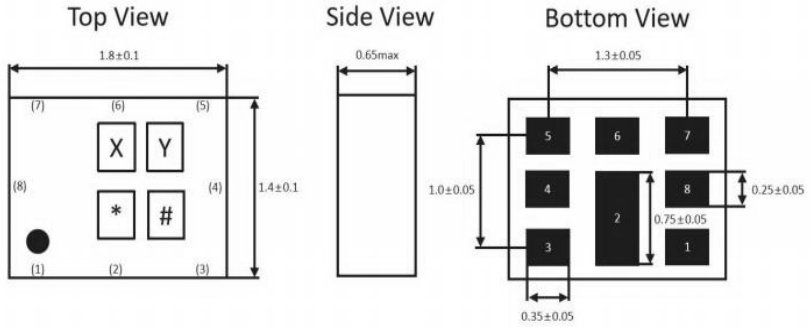
Specification Sheet

Customer Name	XXXX	CUST P/N	NA
Approval No.	PD	Temwell P/N	STSD-680-634-S1814W
Lot No.		Date	2025.04.18
Description	SAW Duplexer	Version	A1

(1)Size Diagram（Unit：MM）



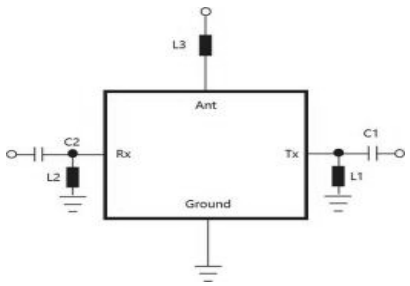
PinNo.	Description
3	Tx
1	Rx
6	Antenna
2,4,5,7,8	Ground
Tolerance	±0.1mm

(2)Electrical Specifications

Item			Specification		
Parameter	MHz	Unit	Min.	Typical	Max.
Center Frequency	-	MHz	-	680.5 / 634.5	-
Insertion Loss	663-698	dB	-	2.7	3.1
	617-652	dB	-	2.7	3.2
Ripple Deviation	663-698	dB	-	1.6	2.1
	617-652	dB	-	1.7	2.2
VSWR of Rx Port	663-698	-	-	1.4	2.0
	617-652	-	-	1.7	2.0
VSWR of Ant Port	663-698	-	-	1.6	2.0
	617-652	-	-	1.8	2.0
Attenuation (663-698)	10-608	dB	40	45	-
	608-614	dB	45	52	-
	617-652	dB	49	54	-
	717-728	dB	55	61	-
	722-729	dB	55	60	-
	729-746	dB	48	53	-
	746-768	dB	45	49	-
	824-849	dB	40	47	-
	859-894	dB	40	47	-
	1164-1250	dB	50	57	-
	1326-1396	dB	60	67	-
	1559-1606	dB	55	60	-
	1710-1755	dB	52	58	-
	1805-1880	dB	52	57	-
	1930-1990	dB	50	56	-
	1989-2094	dB	50	56	-
	2110-2200	dB	50	55	-
	2400-2484	dB	50	57	-
	2652-2792	dB	50	57	-
	3300-3800	dB	50	54	-
	3300-4200	dB	50	54	-
	4400-5000	dB	40	45	-
	4900-5950	dB	30	36	-
Attenuation (617-652)	10-600	dB	30	36	-
	663-698	dB	40	47	-

	709-740	dB	30	37	-
	776-793	dB	30	37	-
	793-805	dB	30	37	-
	824-849	dB	30	37	-
	1058-1138	dB	35	41	-
	1163-1204	dB	39	44	-
	1233-1281	dB	40	47	-
	1461-1484	dB	50	57	-
	1653-1698	dB	50	56	-
	1710-1755	dB	48	54	-
	1850-1920	dB	45	50	-
	1851-1956	dB	45	49	-
	2305-2315	dB	40	47	-
	2327-2407	dB	40	46	-
	2400-2500	dB	40	46	-
	2468-2608	dB	40	46	-
	2922-2967	dB	40	46	-
	4037-4162	dB	53	58	-
	4317-4472	dB	45	50	-
	4900-5950	dB	35	44	-
Isolation	617-652	dB	50	53	-
	663-698	dB	46	49	-
Operation Temperature	-20℃~+85℃	℃	-	-	-
Storage Temperature	-40℃~+85℃	℃	-	-	-
RF Power Dissipation	+29	dBm	-	-	-
Remark	Note 1: Test Temperature: 25℃±2℃ Note 2: Terminating source impedance: 50Ω. Terminating load impedance: 50Ω				

(3)Test Circuit



Port	Matching Component
Tx	L1: 17.0 nH (Ideal inductor) C1: 5.5 pF (Ideal capacitor)
Rx	L2: 18.0 nH (Ideal inductor) C2: 4.5 pF (Ideal capacitor)
Ant	L3: 12.0 nH (Ideal inductor)

Figure 1 Electrical Characteristics: Tx to Ant.

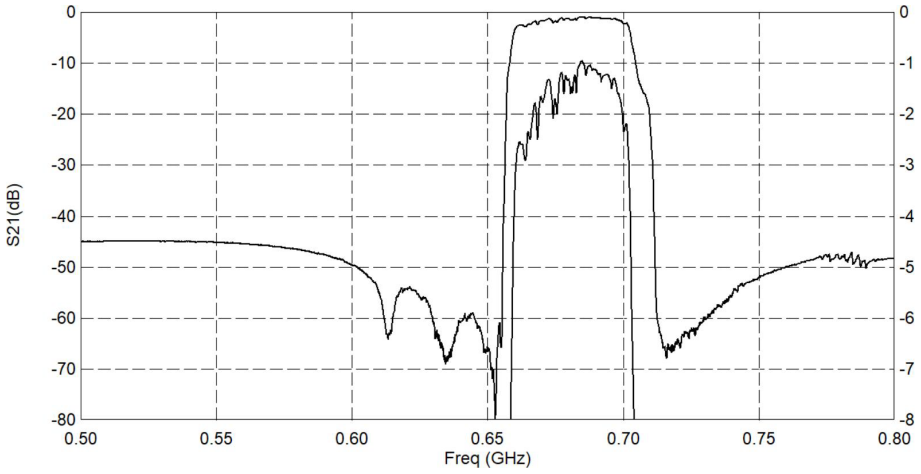


Figure 2 Electrical Characteristics: Tx to Ant.

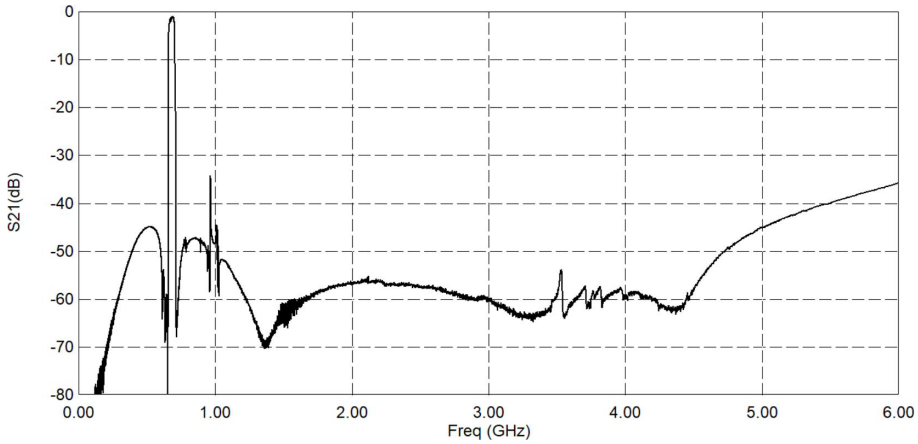


Figure 3 Electrical Characteristics: Ant to Rx.

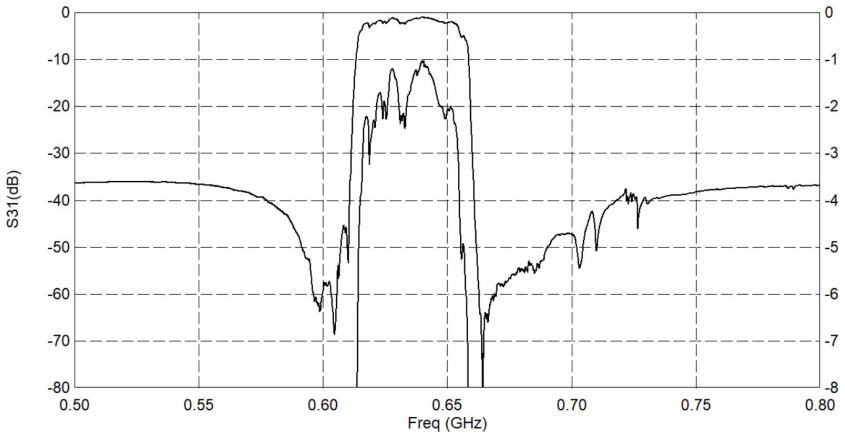


Figure 4 Electrical Characteristics: Ant to Rx.

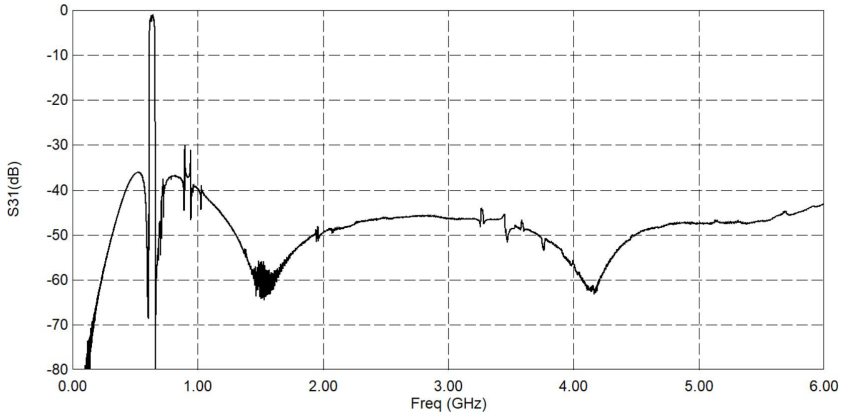


Figure 5 Electrical Characteristics: Tx to Rx.

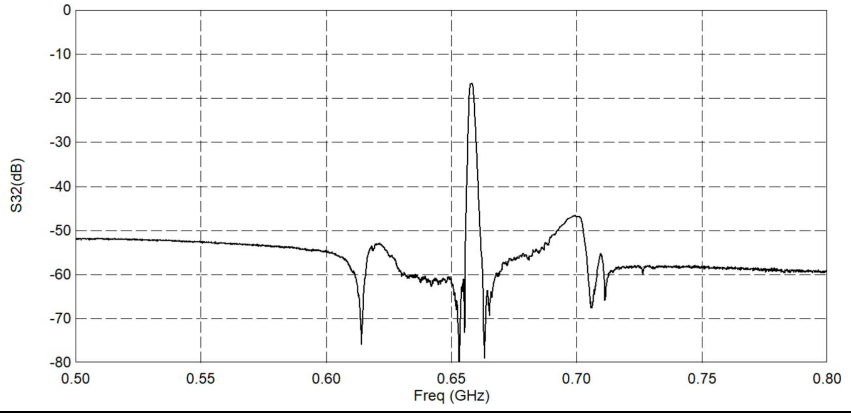


Figure 6 Electrical Characteristics: Tx to Rx.

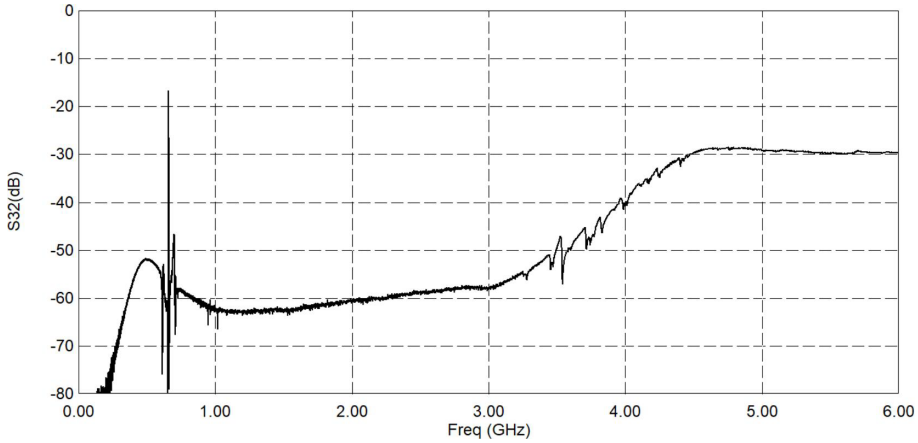
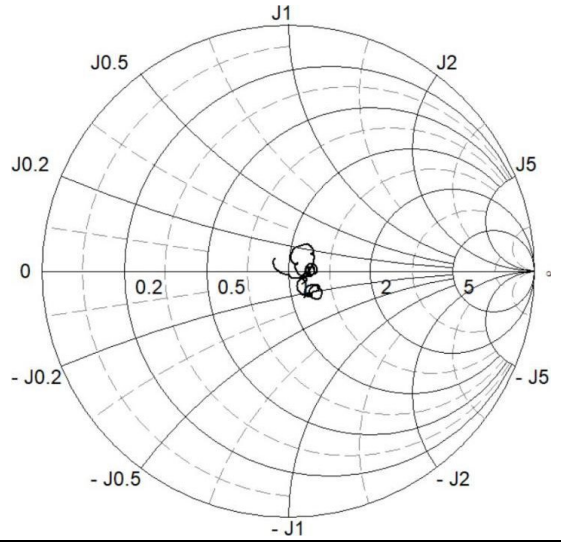
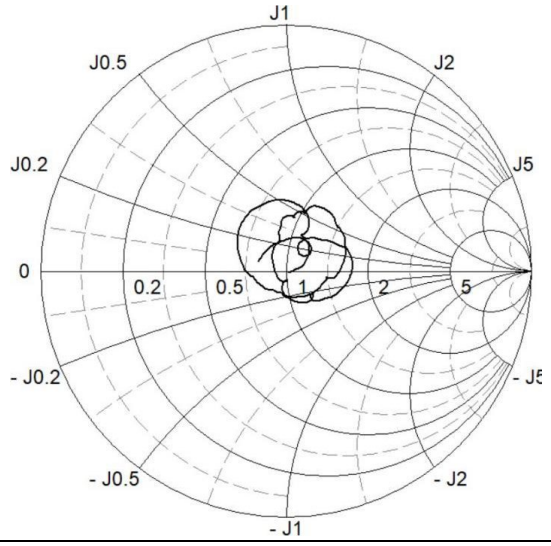


Figure 7 Smith chart

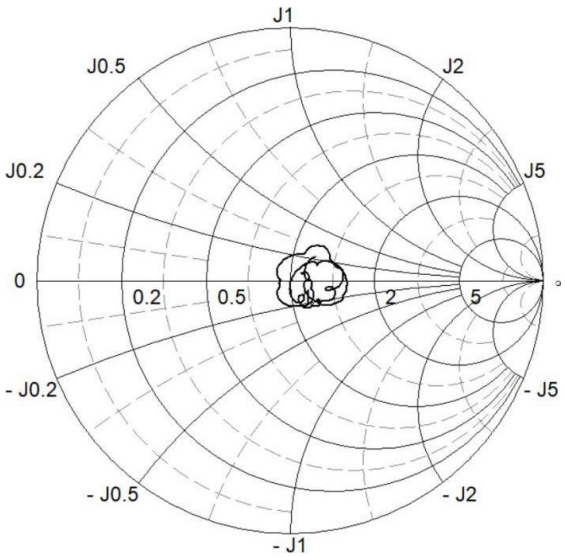
Tx Input Impedance (663MHz to 698MHz)



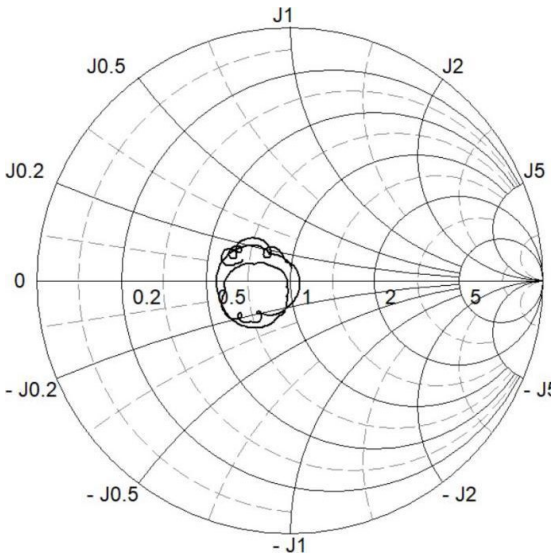
Rx Input Impedance (746MHz to 756MHz)



Ant Input Impedance (Tx Band)

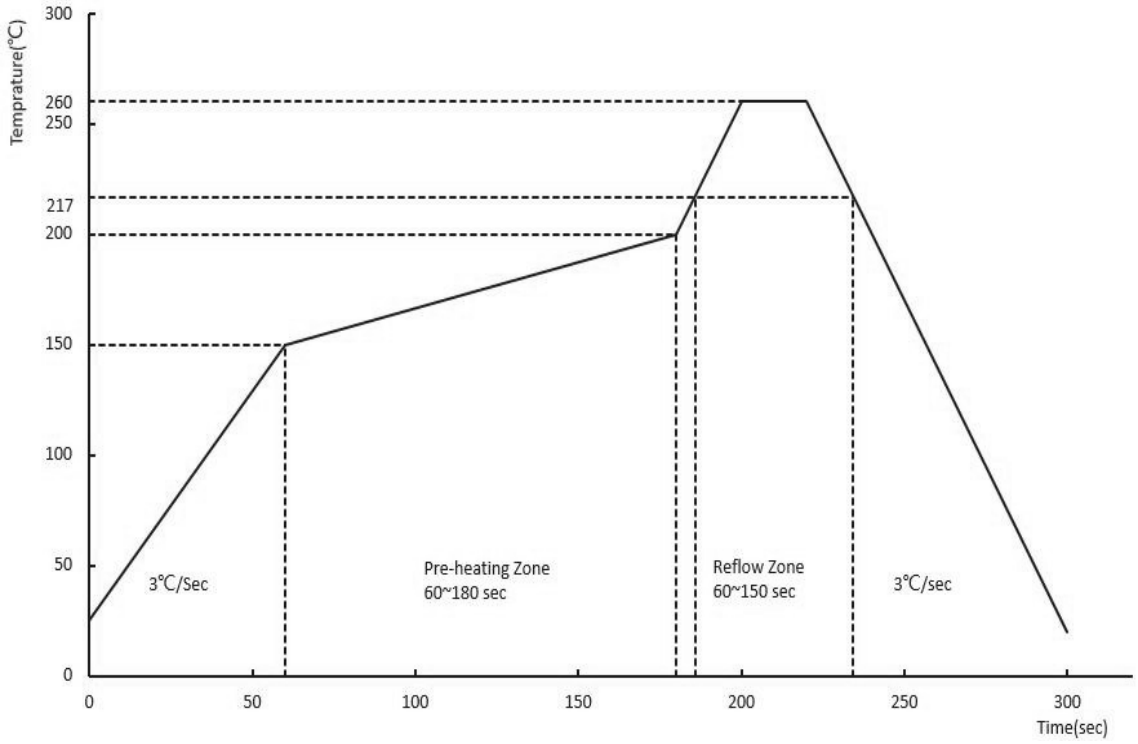


Ant Input Impedance (Rx Band)



Approval	Supervisor	Designer
C. K. Chang	M. Y. Chen	F.L.Lai

Recommended SMT Solder Profile



Reliability

No.	Test item	Test condition	
1	Temperature Storage	Temperature: 85℃±2℃ , Duration: 250h , Recovery time: 2h±0.5h Temperature: -40℃±3℃ , Duration: 250h ,Recovery time: 2h±0.5h	
2	Humidity Test	Conditions: 60℃±2℃ ,90~95%RH	Duration:250h
3	Thermal Shock	Heat cycle conditions: TA=-40℃±3℃, TB=85℃±2℃, t1=t2=30min, Switch time: ≤3min, Cycle time: 100 times, Recovery time: 2h±0.5h.	
4	Vibration Fatigue	Frequency of vibration:10~55Hz Directions: X,Y and Z	Amplitude:1.5mm Duration: 2h
5	Drop Test	Cycle time:10times	Height:1.0m
6	Solder Ability Test	Temperature:245℃±5℃ Depth: DIP--2/3, SMD--1/5	Duration:3.0s--5.0s
7	Resistance to Soldering Heat	Thickness of PCB:1mm , Solder condition: 260℃±5℃ , Duration:10±1s Temperature of Soldering Iron: 350℃±10℃, Duration: 3~4s, Recovery time : 2 ± 0.5h	