

Specification Sheet

Customer Name	XXXX	CUST P/N	NA
Approval No.	PD	Temwell P/N	STSD-1747-1842-S1814W
Lot No.		Date	2025.04.17
Description	SAW Duplexer	Version	A1

(1)Size Diagram (Unit : MM)

Top View

Top View details: Overall dimensions are 1.8±0.1 mm by 1.4±0.1 mm. A central 2x2 grid of square footprints contains 'X', 'X', '#', and '*' symbols. A circular footprint is at the bottom-left. Pin locations are numbered (1) through (8) around the perimeter.

Side View

Side View details: Shows the profile of the PCB with a maximum thickness dimension of 0.60mm.

Bottom View

Bottom View details: Shows the reverse side of the PCB. Dimensions include 1.3±0.05 mm for the central area, 1.0±0.05 mm for the left side, and 0.35±0.05 mm for the bottom edge. A central square footprint is labeled '2'. Other footprints are labeled 1, 3, 4, 5, 6, 7, and 8. A small offset of 0.75±0.05 mm is shown for the right side.

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	-	1747.5 / 1842.5	-
Insertion Loss	1712.5-1785.5	dB	-	2.4	3.0
	1807.5-1877.5	dB	-	2.6	3.5
Ripple Deviation	1712.5-1782.5	dB	-	0.5	1.5
	1807.5-1877.5	dB	-	1.0	2.0
VSWR of Tx Port	1710.24-1784.76	-	-	1.7	2.1
VSWR of Rx Port	1805.24-1879.76	-	-	1.7	2.1
VSWR of Ant Port	1710.24-1784.76	-	-	1.7	2.1
	1805.24-1879.76	-	-	1.7	2.1
Attenuation (1712.5-1782.5)	10-960	dB	32	37	-
	1164-1189	dB	30	34	-
	1559-1606	dB	30	37	-
	1606-1680	dB	15	32	-
	1807.5-1877.5	dB	43	51	-
	1920-1980	dB	30	40	-
	2110-2170	dB	27	34	-
	2400-2500	dB	28	37	-
	2620-2690	dB	27	34	-
	3420-3570	dB	23	34	-
	4900-5850	dB	9	12	-
Attenuation (1807.5-1877.5)	5130-5355	dB	9	12	-
	1-1710	dB	40	44	-
	718-748	dB	40	57	-
	814-849	dB	40	54	-
	832-862	dB	40	53	-
	880-915	dB	40	53	-
	1447-1463	dB	40	45	-
	1615-1690	dB	40	48	-
	1712.5-1782.5	dB	44	54	-
	1785-1790	dB	17	44	-
	1920-2400	dB	38	43	-
	2400-2500	dB	38	46	-
	2500-2570	dB	38	50	-
	2570-3515	dB	35	48	-

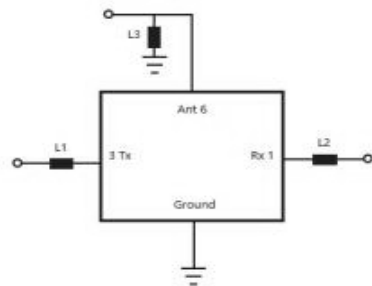
	3515-3760	dB	35	49	-
	4900-5950	dB	30	41	-
	5205-5660	dB	30	41	-
Isolation	1712.5-1782.5	dB	50	53	-
	1807.5-1877.5	dB	50	55	-
Operation Temperature	-20°C~+85°C	°C	-	-	-
Storage Temperature	-40°C~+85°C	°C	-	-	-
RF Power Dissipation	+30	dBm	-	-	-

Remark

Note 1: Test Temperature: 25°C±2°C

Note 2: Terminating source impedance: 50Ω. Terminating load impedance: 50Ω

(3)Test Circuit



Port	Matching Component
Tx	L1 : 1.0 nH (Ideal inductor)
Rx	L2 : 2.0 nH (Ideal inductor)
Ant	L3 : 3.0 nH (Ideal inductor)

Figure 1 Electrical Characteristics: Tx to Ant.

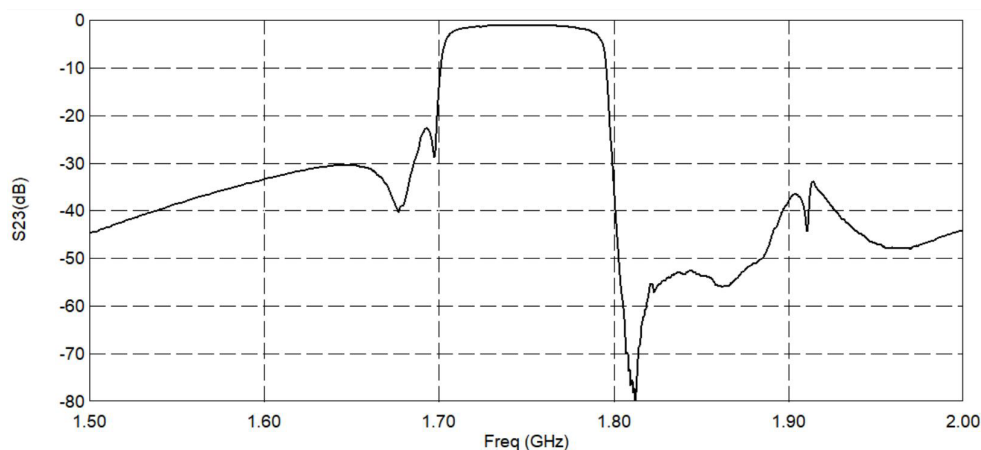


Figure 2 Electrical Characteristics: Tx to Ant.

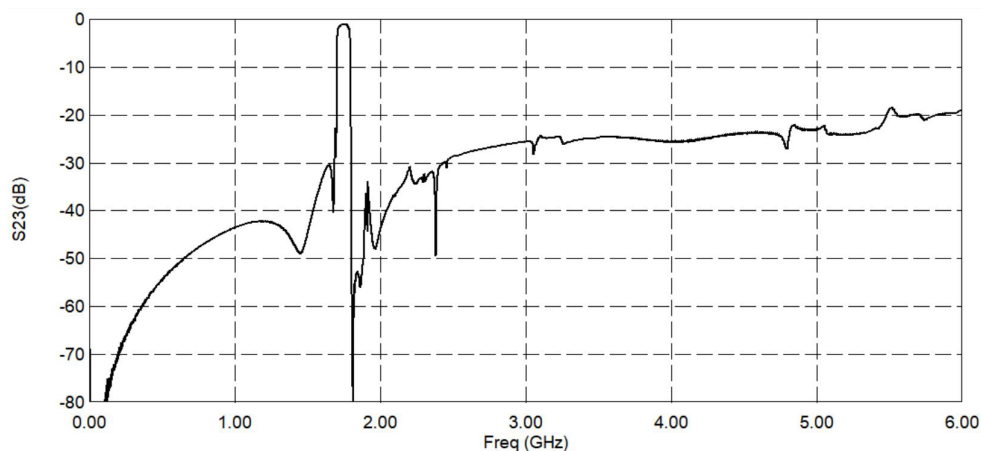


Figure 3 Electrical Characteristics: Ant to Rx.

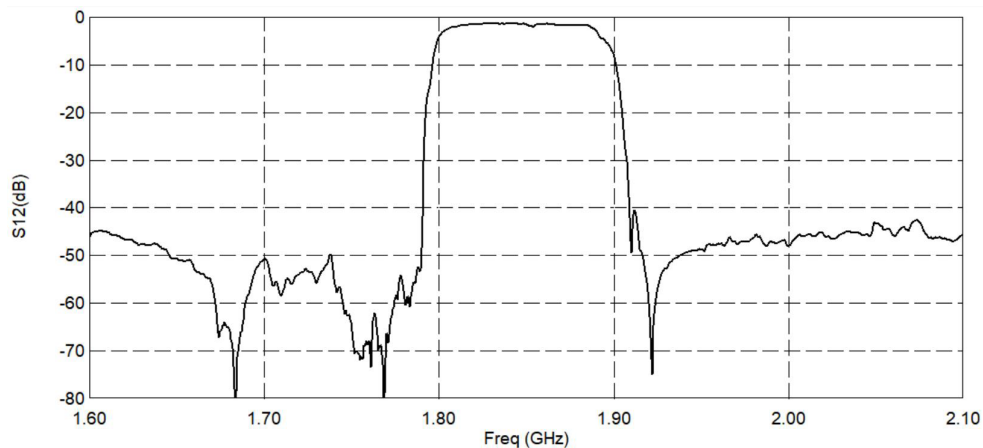


Figure 4 Electrical Characteristics: Ant to Rx.

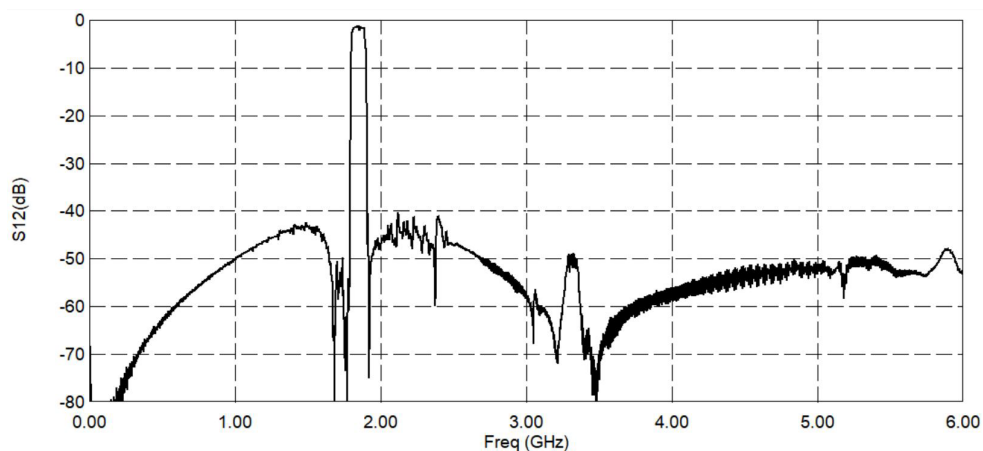


Figure 5 Electrical Characteristics: Tx to Rx.

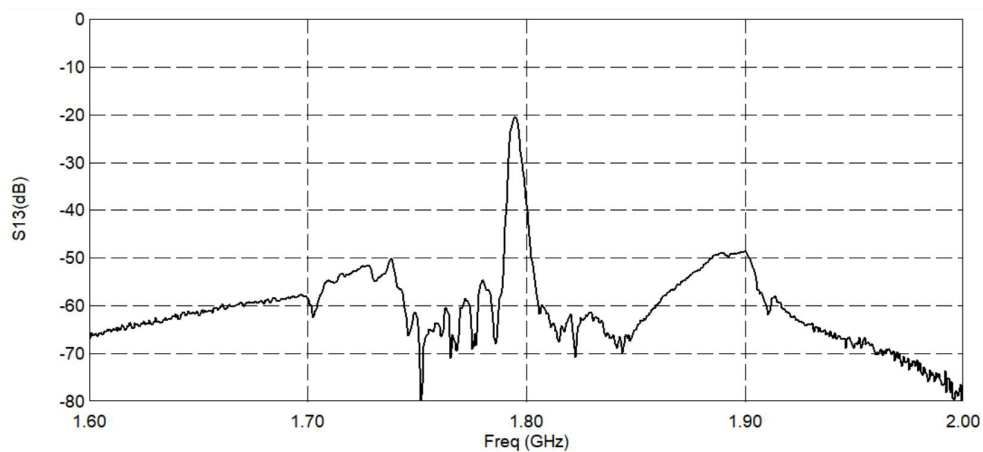


Figure 6 Electrical Characteristics: Tx to Rx.

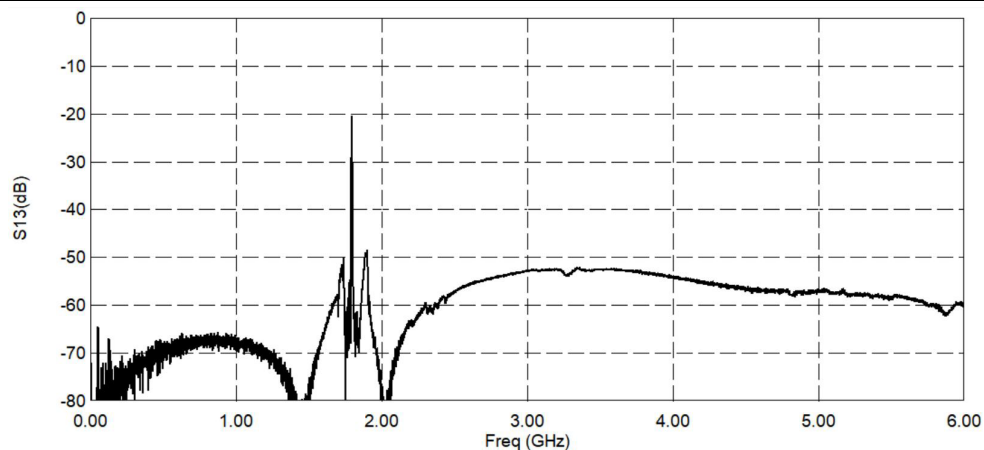
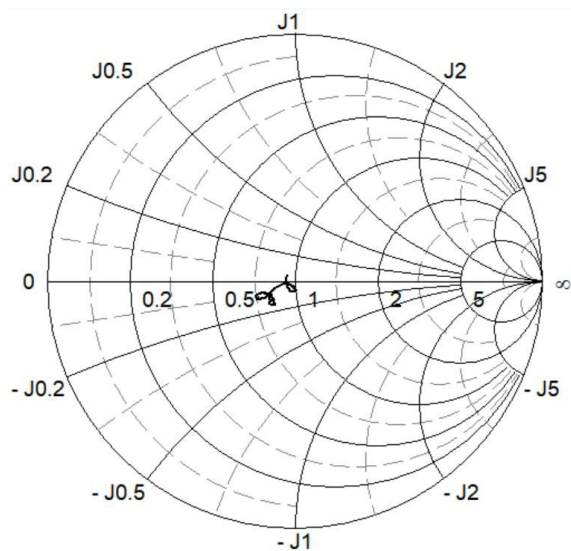
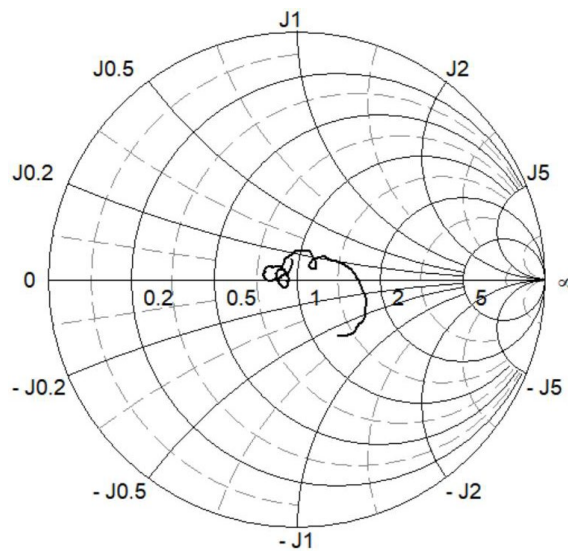


Figure 7 Smith chart

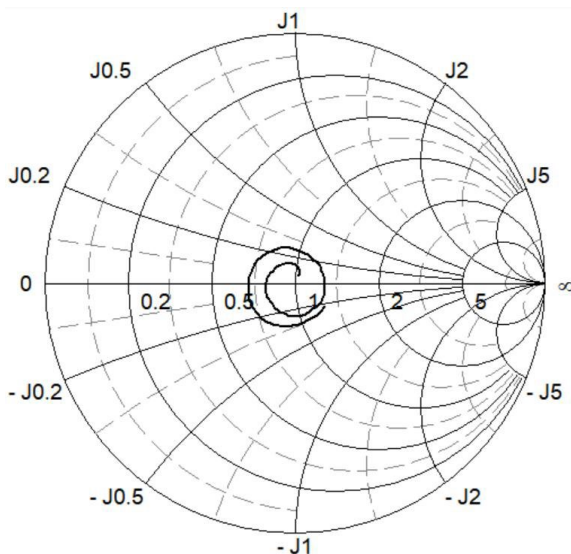
Tx Input Impedance (1712.5MHz to 1782.5MHz)



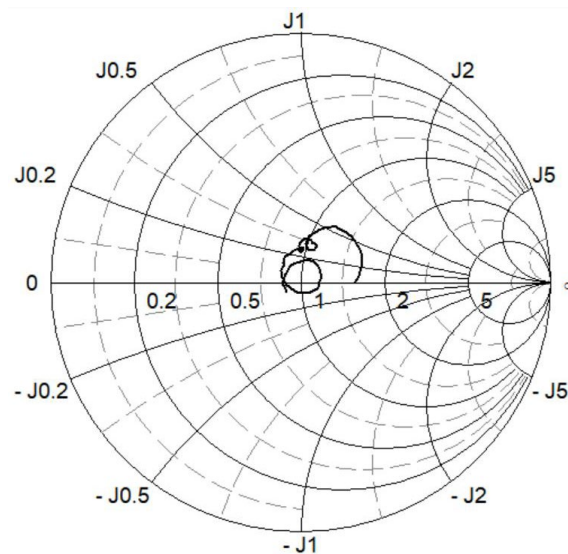
Rx Input Impedance (1807.5MHz to 1877.5MHz)



Ant Input Impedance (Tx Band)



Ant Input Impedance (Rx Band)



Approval

C. K. Chang

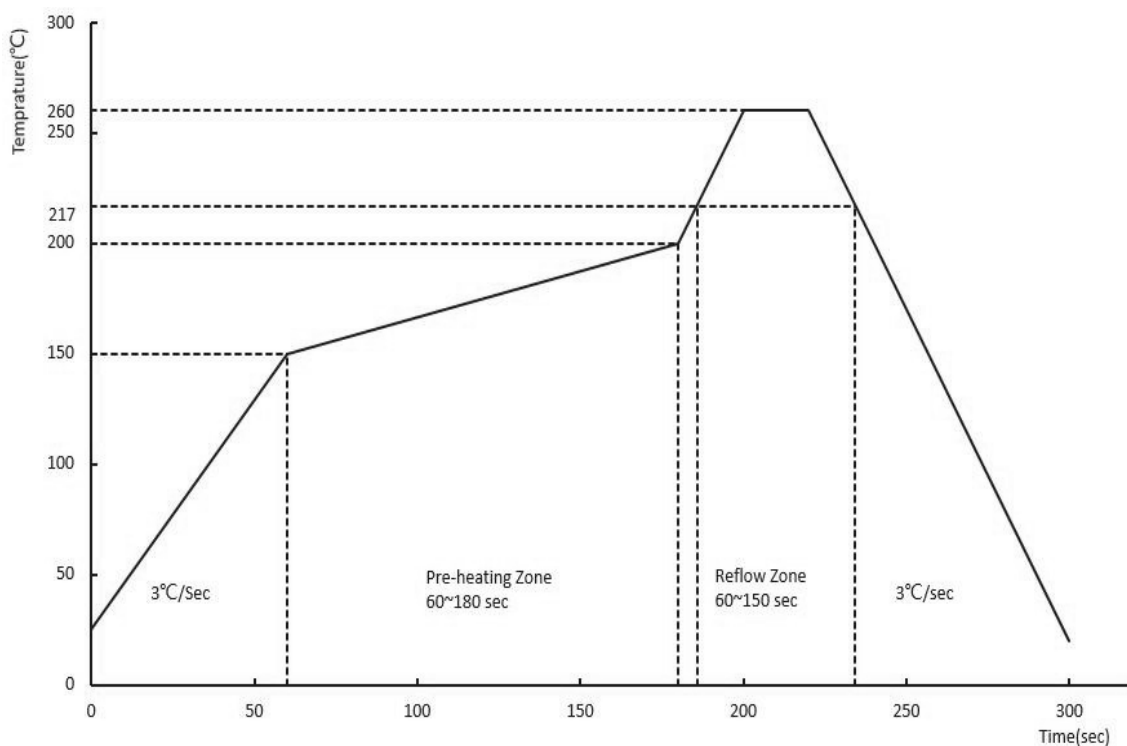
Supervisor

M. Y. Chen

Designer

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Recommended SMT Solder Profile



Reliability

No.	Test item	Test condition	
1	Temperature Storage	Temperature: 85°C±2°C , Duration: 250h , Recovery time: 2h±0.5h Temperature: -40°C±3°C , Duration: 250h ,Recovery time: 2h±0.5h	
2	Humidity Test	Conditions: 60°C±2°C ,90~95%RH	Duration:250h
3	Thermal Shock	Heat cycle conditions: TA=-40°C±3°C, TB=85°C±2°C, 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°C±5°C Depth: DIP--2/3, SMD--1/5	Duration:3.0s--5.0s
7	Resistance to Soldering Heat	Thickness of PCB:1mm , Solder condition: 260°C±5°C , Duration:10±1s Temperature of Soldering Iron: 350°C±10°C, Duration: 3~4s, Recovery time : 2 ± 0.5h	