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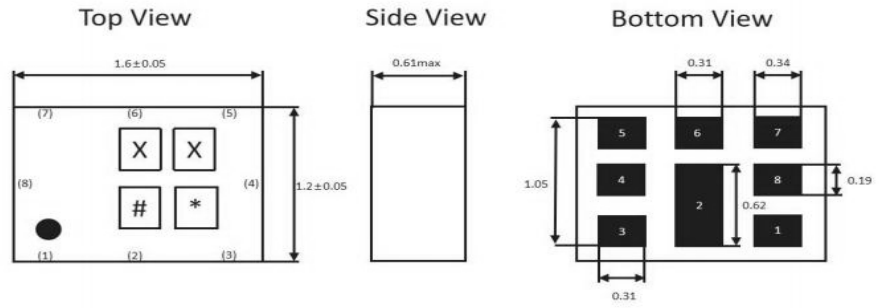
# Specification Sheet

| | | | |
|---|---|---|---|
| Customer Name | XXXX | CUST P/N | NA |
| Approval No. | PD | Temwell P/N | STSD-1880-1960-S1612W |
| Lot No. | | Date | 2025.04.16 |
| Description | SAW Duplexer | Version | A1 |

(1)Size Diagram（Unit：MM）

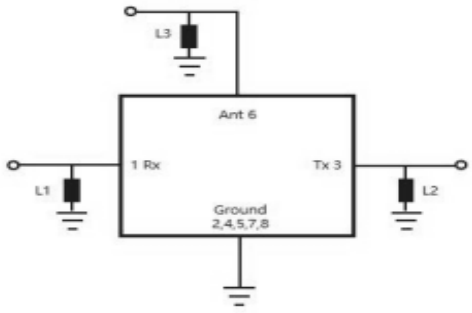



| PinNo. | Description |
|---|---|
| 1 | Rx |
| 3 | Tx |
| 6 | Antenna |
| 2,4,5,7,8 | Ground |
| Tolerance | ±0.05mm |

(2)Electrical Specifications

| Item | | | Specification | | |
|---|---|---|---|---|---|
| Parameter | MHz | Unit | Min. | Typical | Max. |
| Center Frequency | - | MHz | - | 1880 & 1960 | - |
| Insertion Loss | 1850-1910 | dB | - | 2.0 | 2.8 |
| | 1930-1990 | dB | - | 2.9 | 3.8 |
| Ripple Deviation | 1850-1910 | dB | - | 1.0 | 1.8 |
| | 1930-1990 | dB | - | 1.6 | 2.5 |
| VSWR of Tx Port | 1850-1910 | - | - | 1.6 | 2.1 |
| VSWR of Rx Port | 1930-1990 | - | - | 1.6 | 2.1 |
| VSWR of Ant Port | 1850-1910 | - | - | 1.6 | 2.0 |
| | 1930-1990 | - | - | 1.6 | 2.1 |
| Attenuation (1850-1910) | 10-1565.4 | dB | 32 | 36 | - |
| | 1565.4-1573.4 | dB | 32 | 37 | - |
| | 1573.4-1577.5 | dB | 32 | 38 | - |
| | 1577.5-1585.4 | dB | 32 | 38 | - |
| | 1597.6-1605.9 | dB | 35 | 40 | - |
| | 1605.9-1680 | dB | 35 | 40 | - |
| | 1930-1990 | dB | 50 | 53 | - |
| | 2400-2500 | dB | 28 | 33 | - |
| | 3700-3820 | dB | 20 | 25 | - |
| | 5150-5850 | dB | 5 | 8 | - |
| Attenuation (1930-1990) | 10-1680 | dB | 35 | 40 | - |
| | 1850-1910 | dB | 47 | 51 | - |
| | 2400-2500 | dB | 50 | 55 | - |
| | 3860-3980 | dB | 44 | 50 | - |
| | 5150-5850 | dB | 15 | 20 | - |
| | 5790-5970 | dB | 15 | 20 | - |
| Isolation | 1850-1910 | dB | 50 | 52 | - |
| | 1930-1990 | dB | 50 | 53 | - |
| Operation Temperature | -20℃~+85℃ | ℃ | - | - | - |
| Storage Temperature | -40℃~+85℃ | ℃ | - | - | - |
| RF Power Dissipation | +29 | dBm | - | - | - |
| Remark | Note 1: Test Temperature: 25℃±2℃<br>Note 2: Terminating source impedance: 50Ω. Terminating load impedance: 50Ω | | | | |

(3)Test Circuit




| Port | Matching Component |
|---|---|
| Rx | L1 :5.3 nH ( Ideal inductor ) |
| Tx | L2 :8.2 nH ( Ideal inductor ) |
| Ant | L3 :3.2 nH ( Ideal inductor ) |

**Figure 1 Electrical Characteristics: Tx to Ant.**

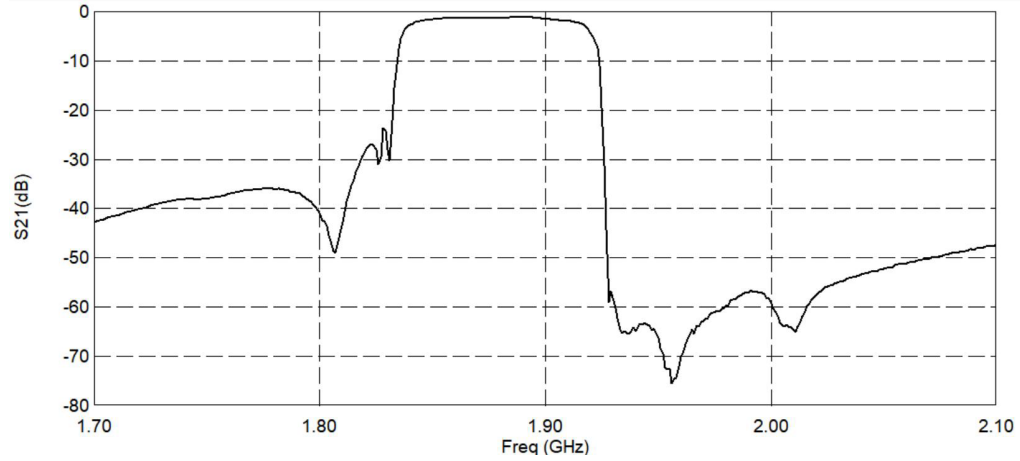



**Figure 2 Electrical Characteristics: Tx to Ant.**

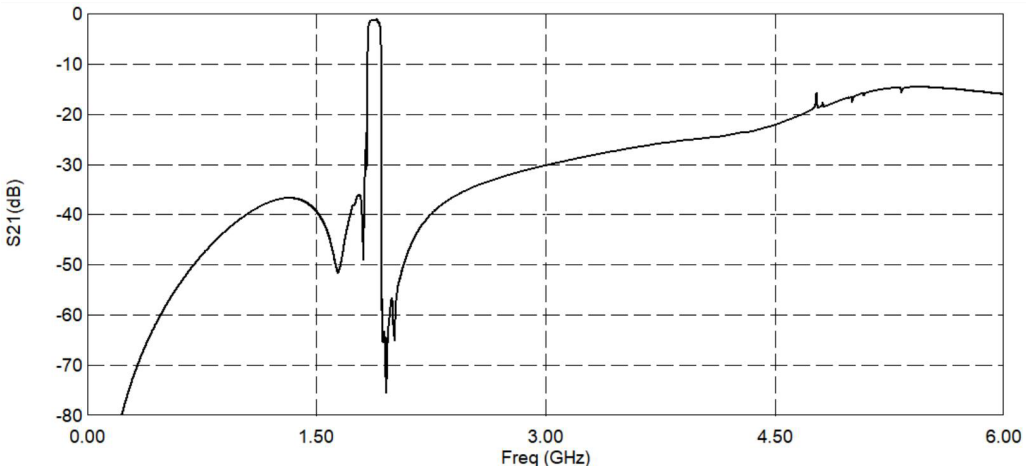



**Figure 3 Electrical Characteristics: Ant to Rx.**

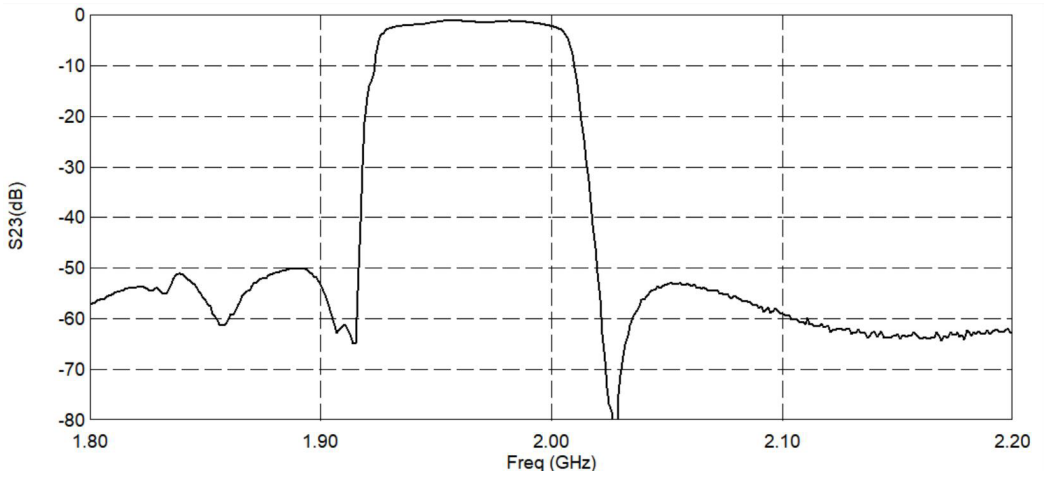



**Figure 4 Electrical Characteristics: Ant to Rx.**

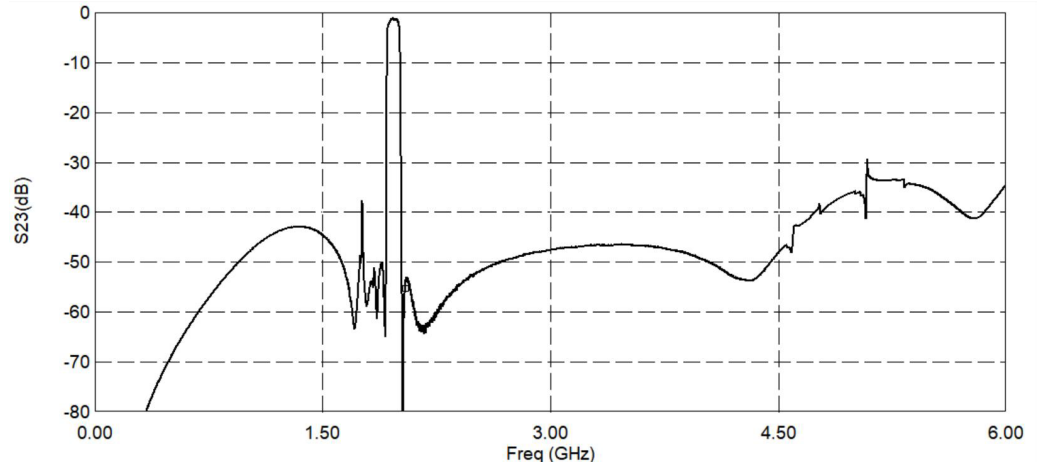



**Figure 5 Electrical Characteristics: Tx to Rx.**

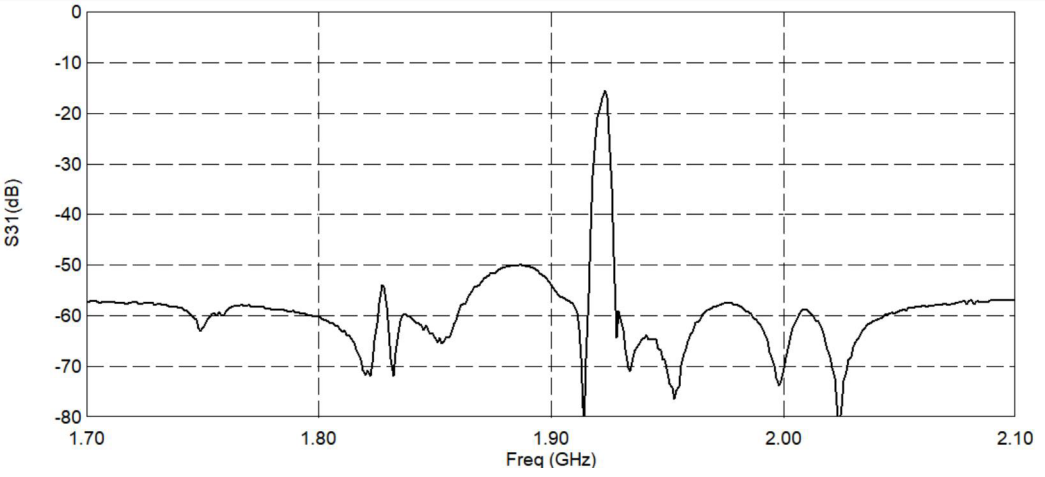



**Figure 6 Electrical Characteristics: Tx to Rx.**

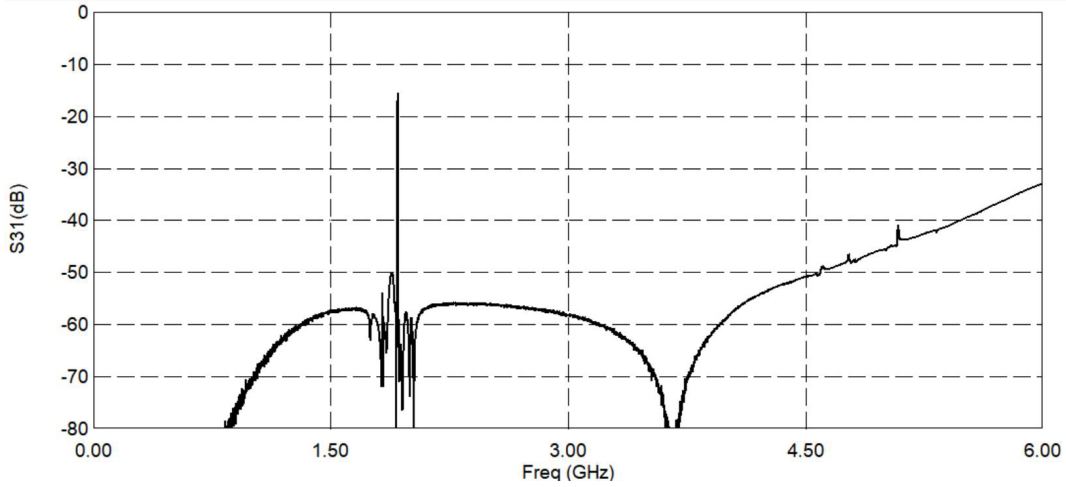
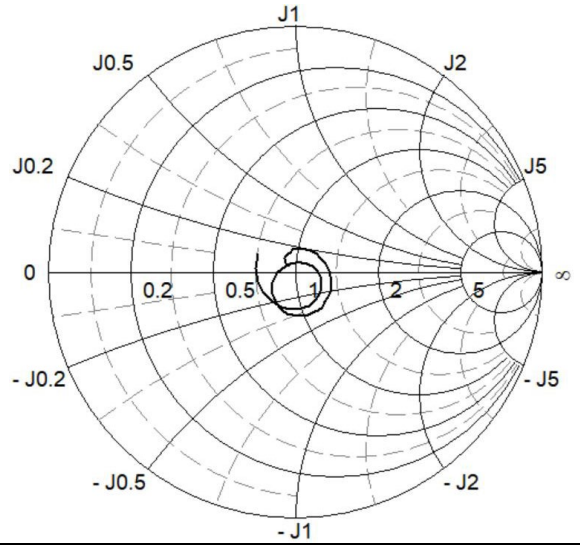
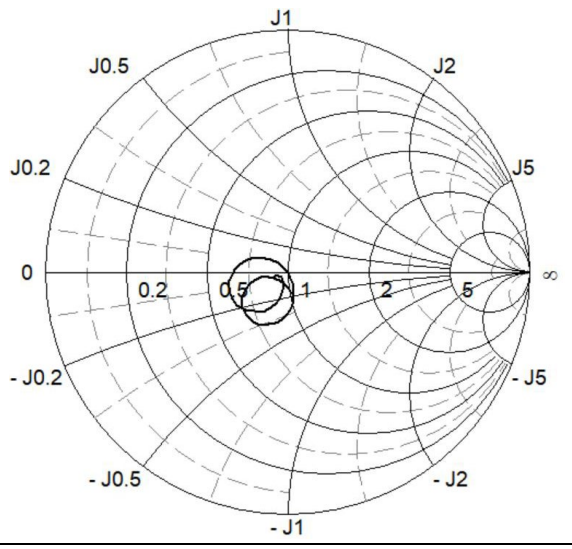



**Figure 7 Smith chart**

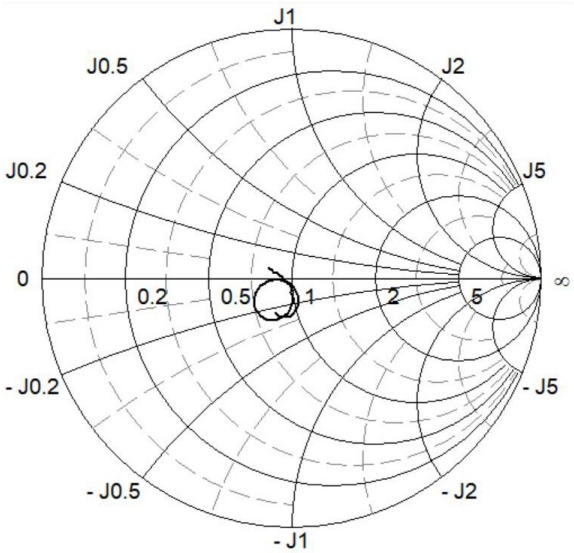
**Tx Input Impedance (1850MHz to 1910MHz)**



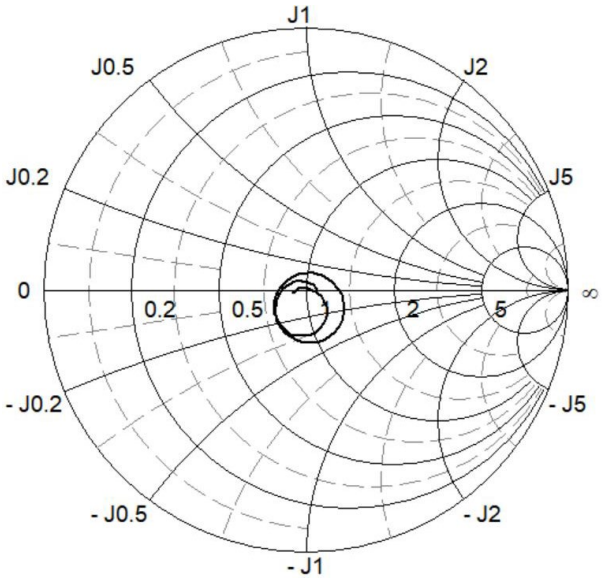

**Rx Input Impedance (1930MHz to 1990MHz)**




**Ant Input Impedance (Tx Band)**

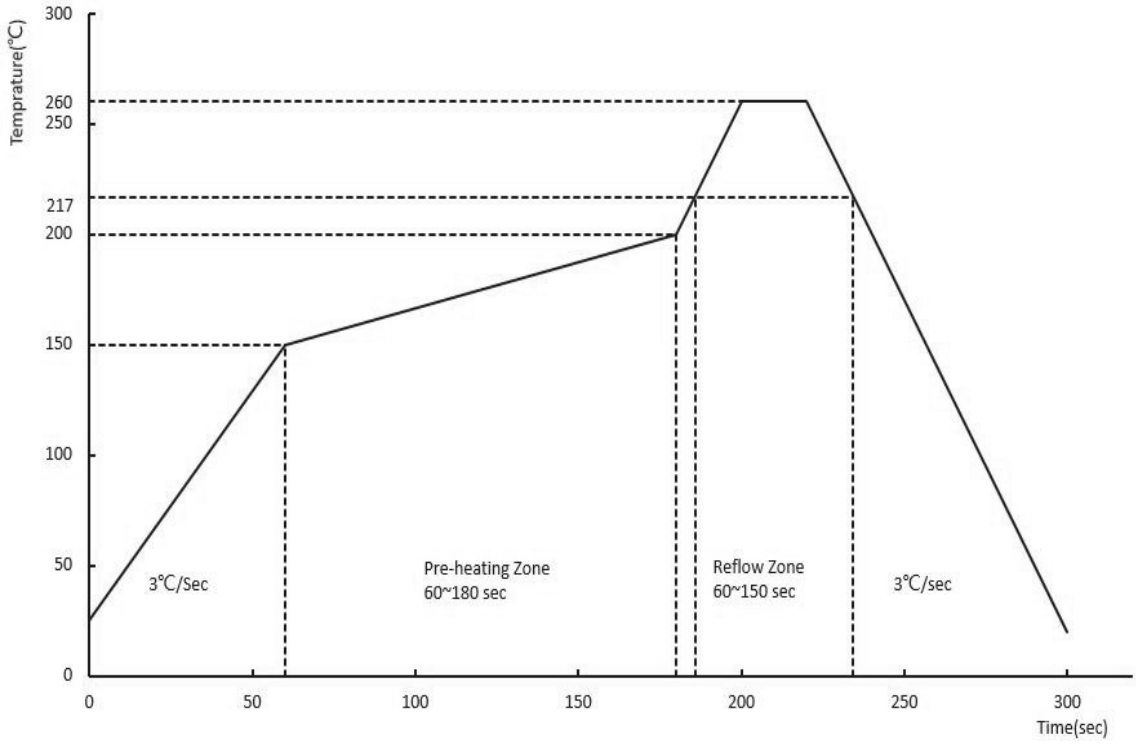



**Ant Input Impedance (Rx Band)**




| 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<br>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,<br>Switch time: ≤3min, Cycle time: 100 times, Recovery time: 2h±0.5h. | |
| 4 | Vibration Fatigue | Frequency of vibration:10~55Hz<br>Directions: X,Y and Z | Amplitude:1.5mm<br>Duration: 2h |
| 5 | Drop Test | Cycle time:10times | Height:1.0m |
| 6 | Solder Ability Test | Temperature:245℃±5℃<br>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<br>Temperature of Soldering Iron: 350℃±10℃, Duration: 3~4s, Recovery time : 2 ± 0.5h | |