



HANGZHOU SAPPLAND MICROELECTRONICS TECHNOLOGY CO., LTD

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# SAW Device Preliminary Data Sheet

Band 20 Duplexer / Unbalanced /1612

PN: **SPSC20SU11F**

Rev: 0.1

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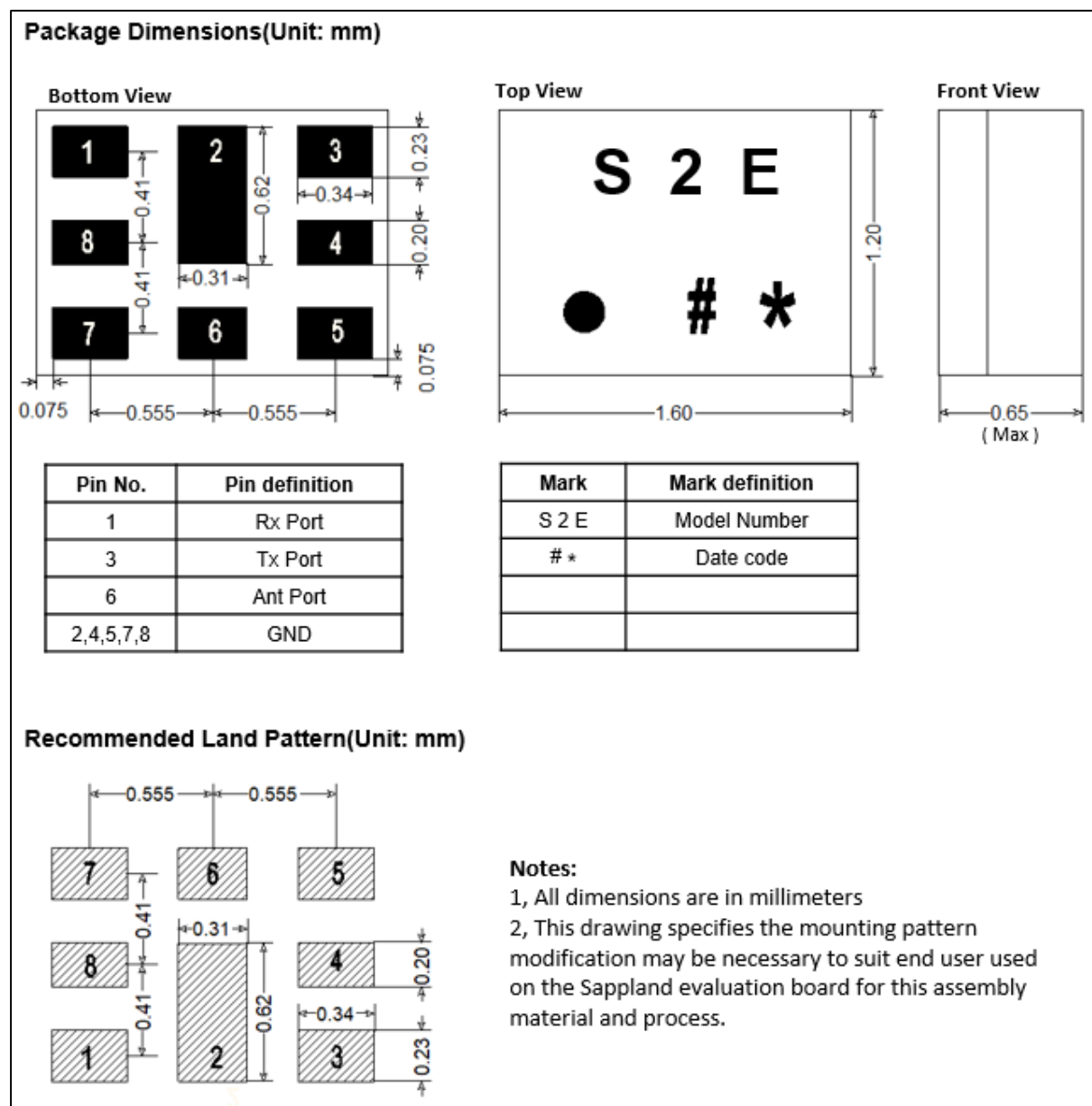
## Feature:

- low insertion loss
- high isolation between Tx and Rx

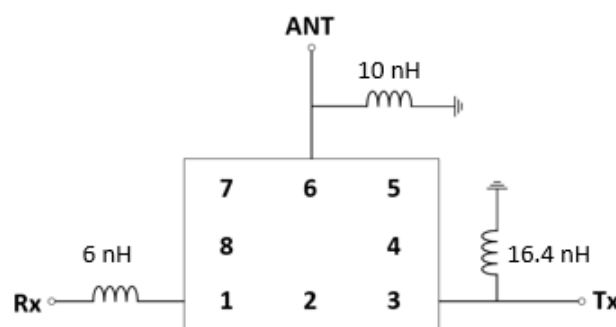
# 1.Revision History

| Revision | Date        | Comments        |
|----------|-------------|-----------------|
| 0.1      | Sep-27-2024 | Initial release |
|          |             |                 |
|          |             |                 |
|          |             |                 |
|          |             |                 |

## 2.Package and Pin map



### Application circuit (with ideal components)



## 3. Performance

### 3.1 Absolute maximum ratings

| Item                              | Rating      | Note           |
|-----------------------------------|-------------|----------------|
| Storage Temperature               | -40 ~ 85 °C |                |
| Operating Temperature             | -30 ~ 85 °C |                |
| Input Power Max                   | 30 dBm      | CW 5000h, 55°C |
| D.C Voltage between the terminals | 3 V         | 25±2deg.C      |

### 3.2 Electrical specification

#### Tx Electrical specification (-30 to +85 °C)

| TX to ANT            |                       | Characteristics |                   |     | Unit | Note |
|----------------------|-----------------------|-----------------|-------------------|-----|------|------|
|                      |                       | min             | Typ. <sup>1</sup> | max |      |      |
| Center Frequency     |                       | -               | 847.00            | -   | MHz  |      |
| Insertion Loss       | 832.00 ~ 862.00 MHz   |                 | 1.7               | 2.6 | dB   |      |
| Amplitude ripple     | 832.00 ~ 862.00 MHz   |                 | 1.1               | 2.0 | dB   |      |
| VSWR                 | 832.00 ~ 862.00 MHz   |                 | 1.6               | 2.0 | -    | Tx   |
|                      | 832.00 ~ 862.00 MHz   |                 | 1.6               | 2.0 | -    | ANT  |
| Absolute attenuation | 10.00 ~ 758.00 MHz    | 30              | 38                |     | dB   |      |
|                      | 703.00 ~ 733.00 MHz   | 35              | 39                |     | dB   |      |
|                      | 758.00 ~ 788.00 MHz   | 35              | 43                |     | dB   |      |
|                      | 791.00 ~ 821.00 MHz   | 45              | 54                |     | dB   |      |
|                      | 880.00 ~ 915.00 MHz   | 40              | 47                |     | dB   |      |
|                      | 1166.00 ~ 1187.00 MHz | 40              | 45                |     | dB   |      |
|                      | 1226.00 ~ 1250.00 MHz | 40              | 47                |     | dB   |      |
|                      | 1452.00 ~ 1490.00 MHz | 42              | 51                |     | dB   |      |
|                      | 1559.00 ~ 1607.00 MHz | 40              | 48                |     | dB   |      |
|                      | 1664.00 ~ 1724.00 MHz | 40              | 48                |     | dB   |      |
|                      | 1805.00 ~ 1880.00 MHz | 40              | 45                |     | dB   |      |
|                      | 2110.00 ~ 2200.00 MHz | 35              | 40                |     | dB   |      |
|                      | 2400.00 ~ 2500.00 MHz | 35              | 41                |     | dB   |      |
|                      | 2496.00 ~ 2586.00 MHz | 35              | 41                |     | dB   |      |
|                      | 2570.00 ~ 2690.00 MHz | 35              | 39                |     | dB   |      |
|                      | 3300.00 ~ 4200.00 MHz | 25              | 32                |     | dB   |      |
|                      | 3328.00 ~ 3448.00 MHz | 25              | 35                |     | dB   |      |
|                      | 5150.00 ~ 5950.00 MHz | 20              | 26                |     | dB   |      |

1) Typical value at 25±2deg.C

**Rx Electrical specification (-30 to +85 °C)**

| ANT to RX            |                       | Characteristics |                   |     | Unit | Note |
|----------------------|-----------------------|-----------------|-------------------|-----|------|------|
|                      |                       | min             | Typ. <sup>1</sup> | max |      |      |
| Center Frequency     |                       | -               | 806.00            | -   | MHz  |      |
| Insertion Loss       | 791.00 ~ 821.00 MHz   |                 | 1.8               | 2.8 | dB   |      |
| Amplitude ripple     | 791.00 ~ 821.00 MHz   |                 | 0.8               | 2.0 | dB   |      |
| VSWR                 | 791.00 ~ 821.00 MHz   |                 | 1.7               | 2.2 | -    | Rx   |
|                      | 791.00 ~ 821.00 MHz   |                 | 1.7               | 2.2 | -    | ANT  |
| Absolute attenuation | 10.00 ~ 703.00 MHz    | 40              | 48                |     | dB   |      |
|                      | 703.00 ~ 733.00 MHz   | 40              | 49                |     | dB   |      |
|                      | 832.00 ~ 862.00 MHz   | 45              | 61                |     | dB   |      |
|                      | 873.00 ~ 903.00 MHz   | 45              | 52                |     | dB   |      |
|                      | 880.00 ~ 915.00 MHz   | 45              | 56                |     | dB   |      |
|                      | 1710.00 ~ 1780.00 MHz | 45              | 56                |     | dB   |      |
|                      | 1920.00 ~ 1980.00 MHz | 45              | 51                |     | dB   |      |
|                      | 2373.00 ~ 2570.00 MHz | 45              | 49                |     | dB   |      |
|                      | 2400.00 ~ 2500.00 MHz | 45              | 51                |     | dB   |      |
|                      | 2500.00 ~ 2570.00 MHz | 45              | 52                |     | dB   |      |
|                      | 2570.00 ~ 2620.00 MHz | 45              | 60                |     | dB   |      |
|                      | 3300.00 ~ 3800.00 MHz | 45              | 60                |     | dB   |      |
|                      | 3300.00 ~ 4200.00 MHz | 45              | 60                |     | dB   |      |
|                      | 4900.00 ~ 5950.00 MHz | 45              | 60                |     | dB   |      |
|                      | 5150.00 ~ 5950.00 MHz | 45              | 60                |     | dB   |      |

1) Typical value at 25±2deg.C

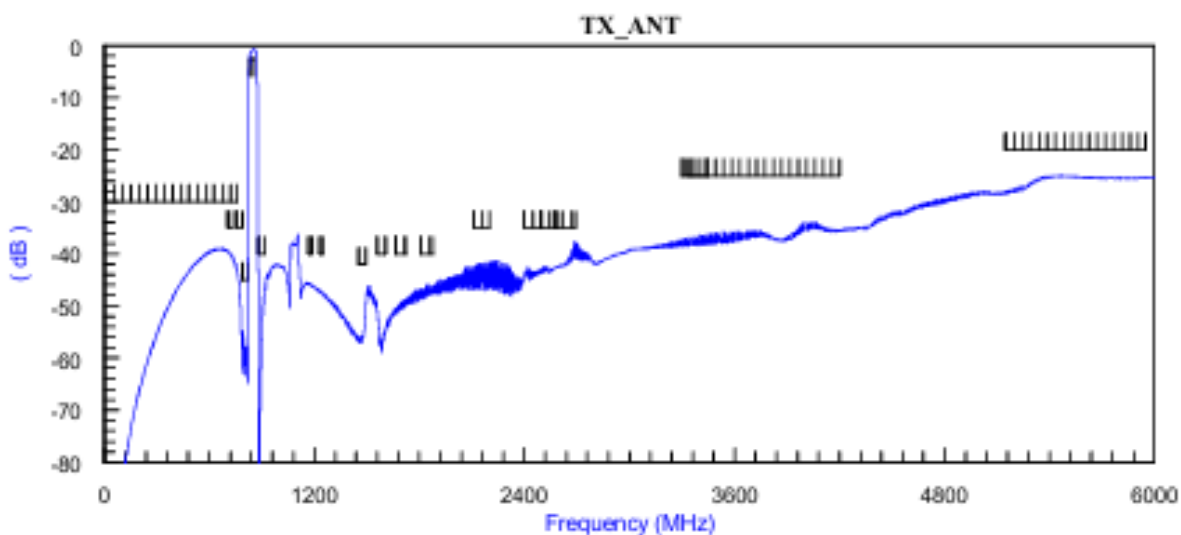
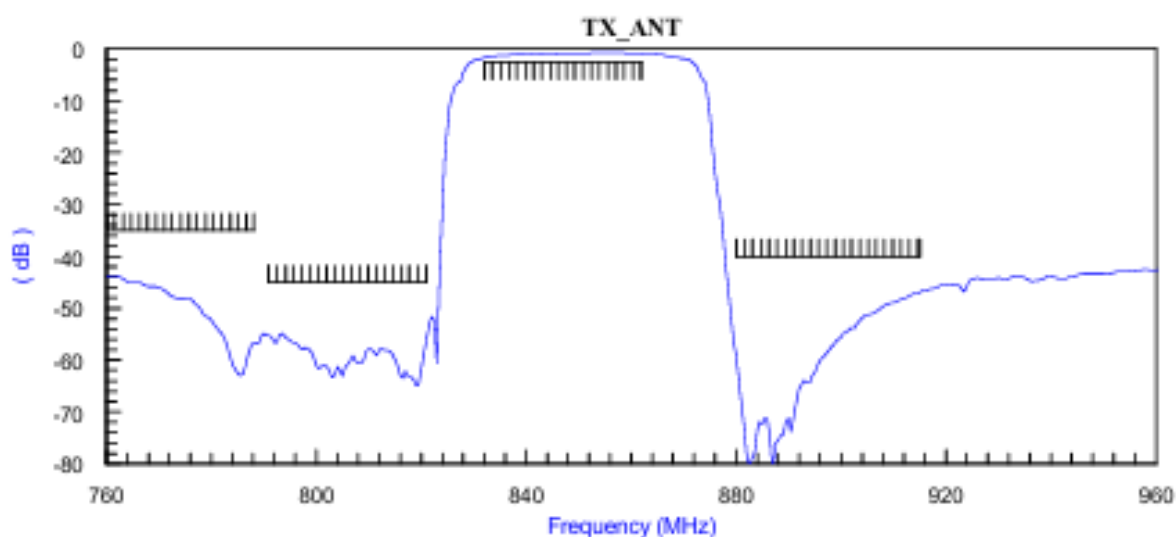
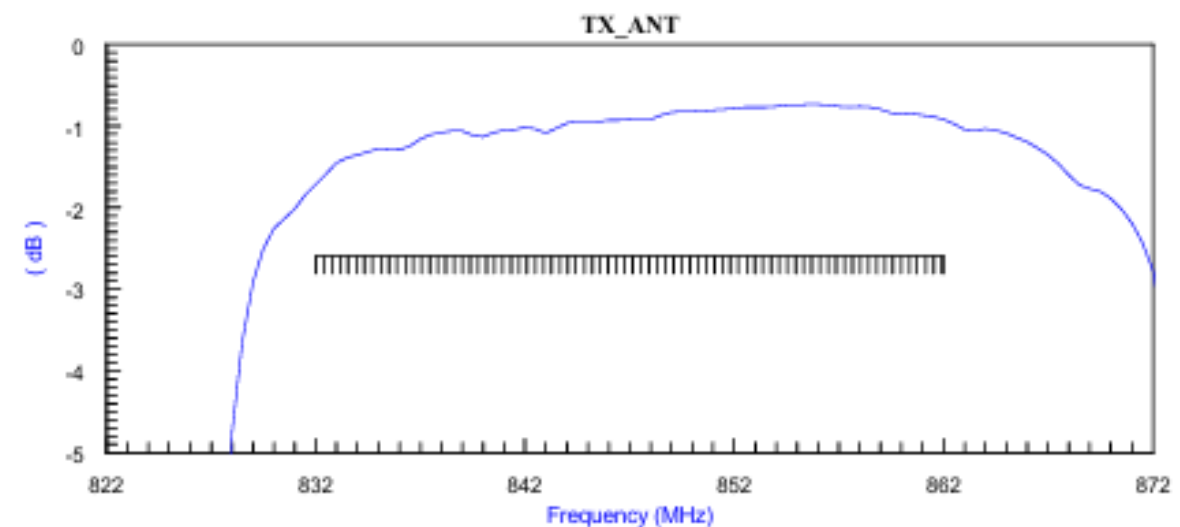
**Tx/Rx Electrical specification (-30 to +85 °C)**

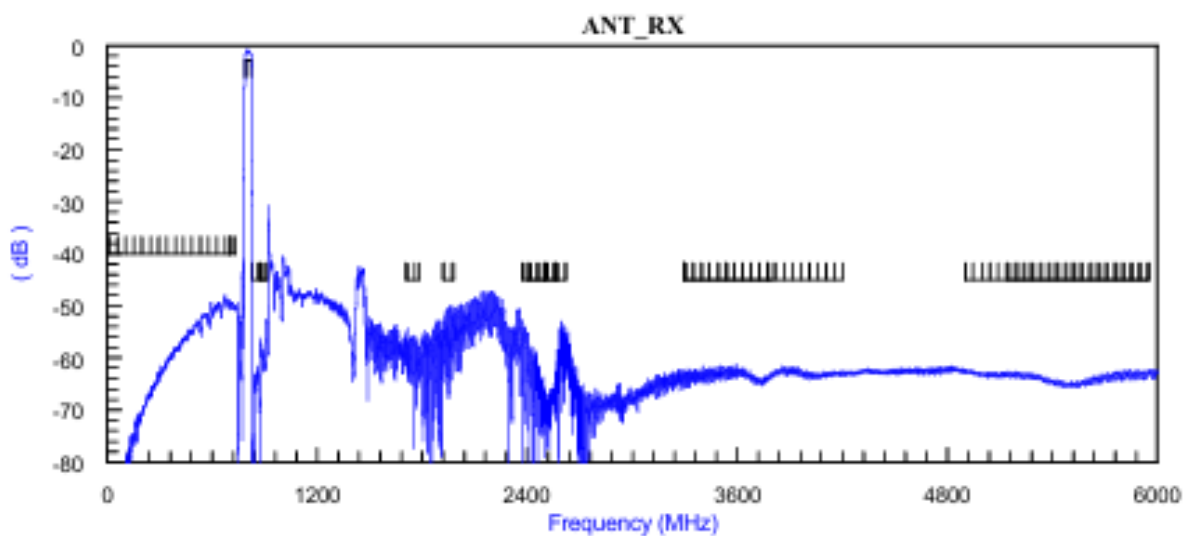
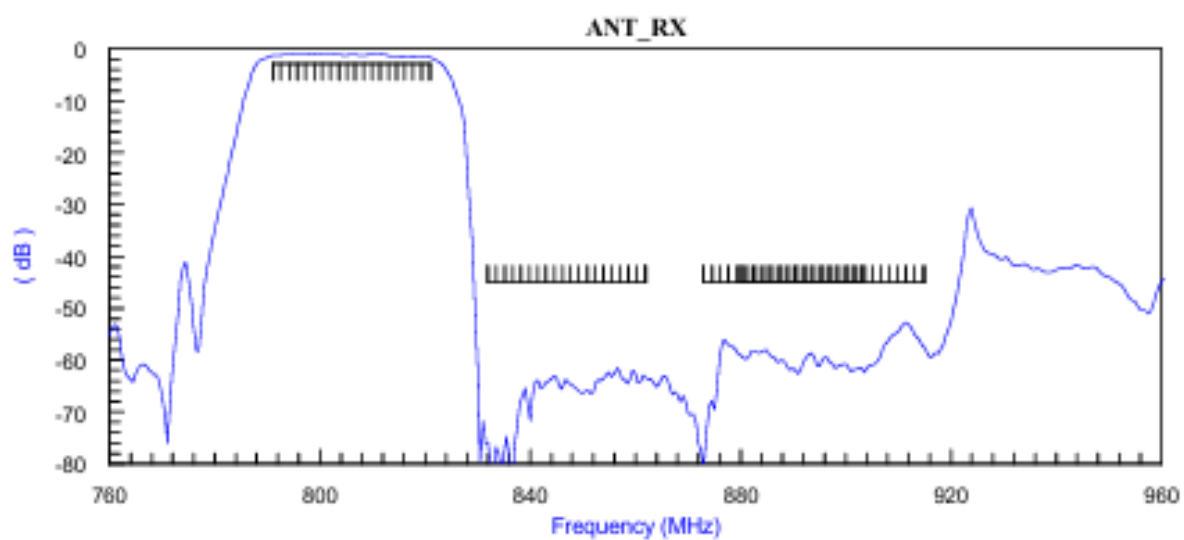
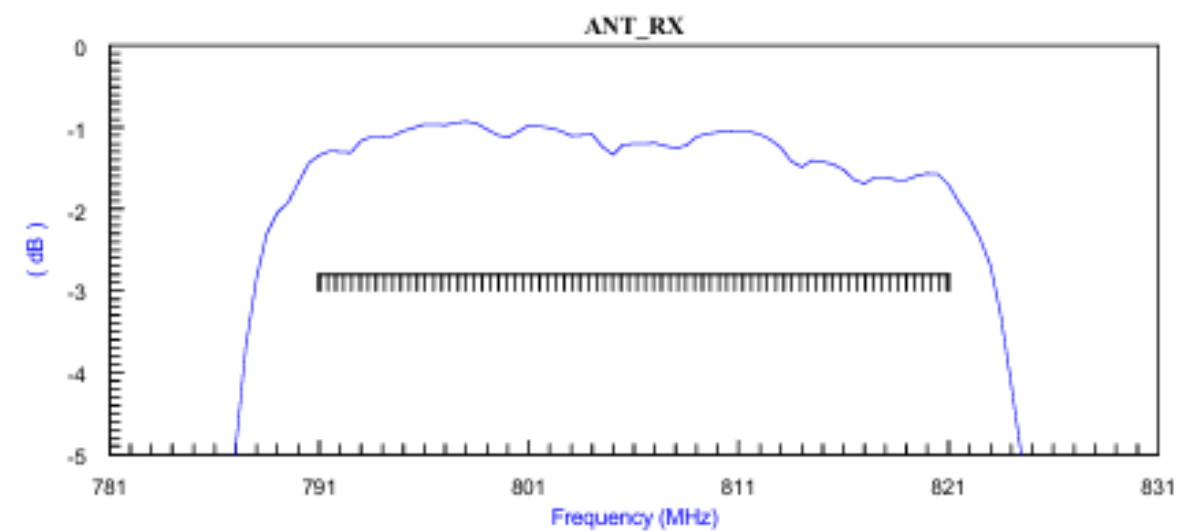
| TX / RX   |                     | Characteristics |                   |     | Unit | Note |
|-----------|---------------------|-----------------|-------------------|-----|------|------|
|           |                     | min             | Typ. <sup>1</sup> | max |      |      |
| Isolation | 791.00 ~ 821.00 MHz | 53              | 58                |     | dB   |      |
|           | 832.00 ~ 862.00 MHz | 53              | 60                |     | dB   |      |

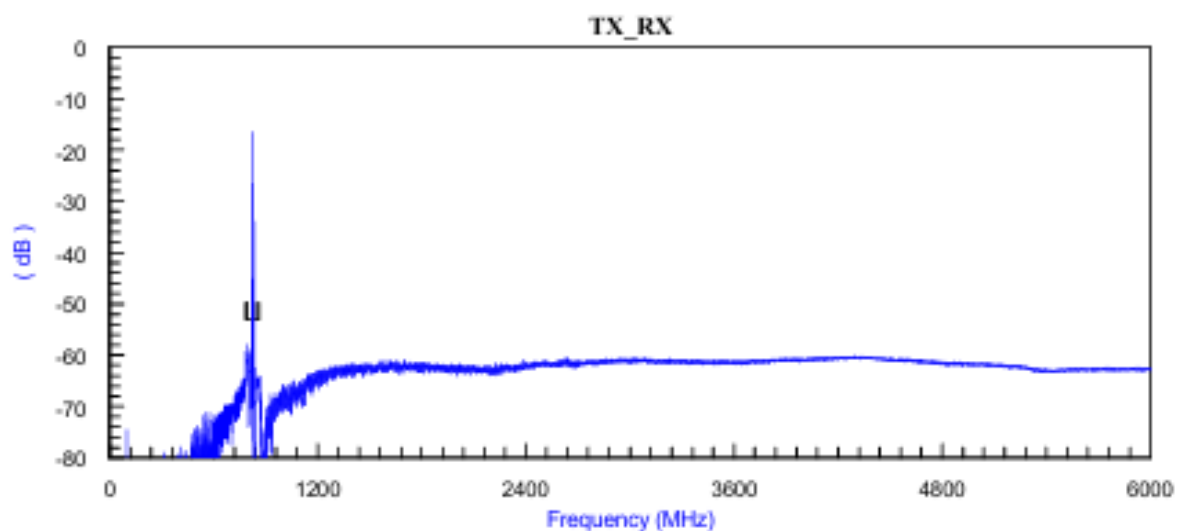
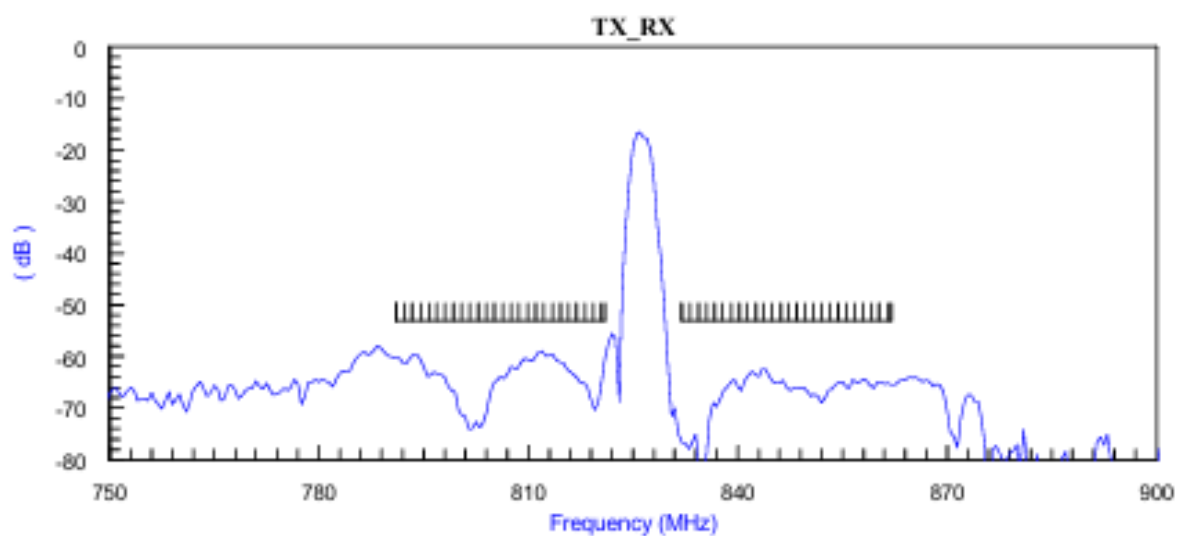
1) Typical value at 25±2deg.C

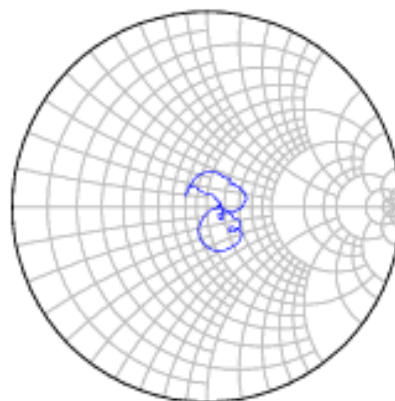
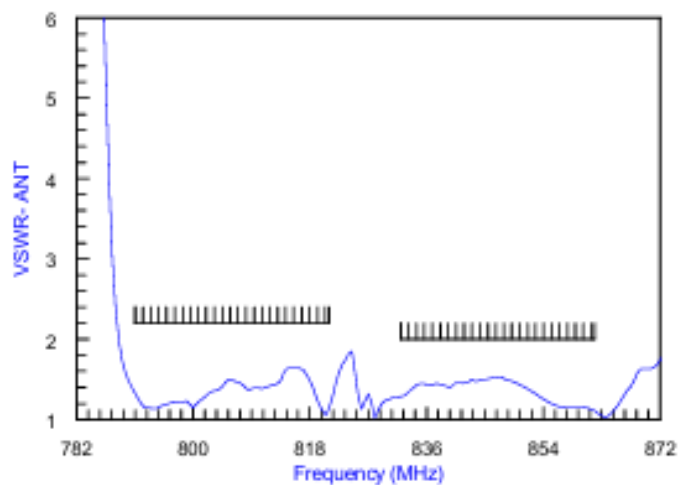
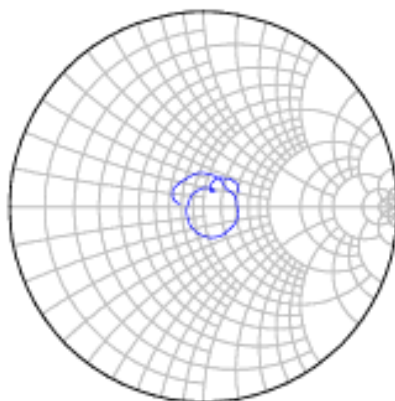
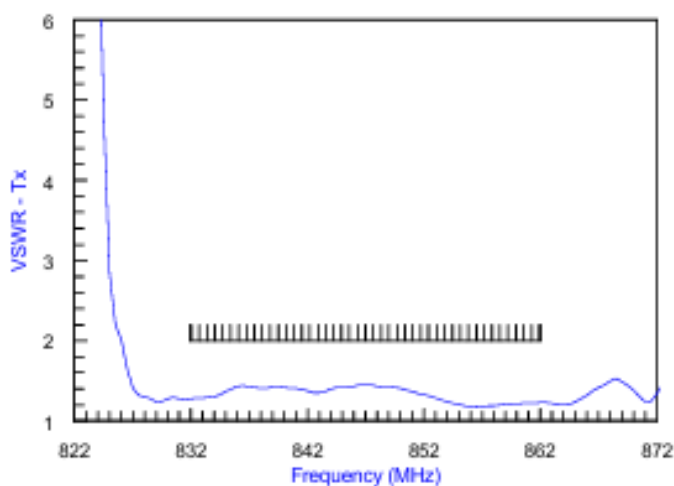
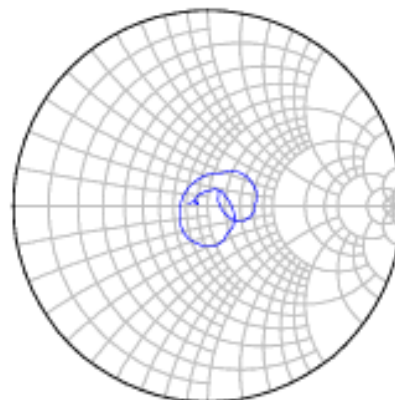
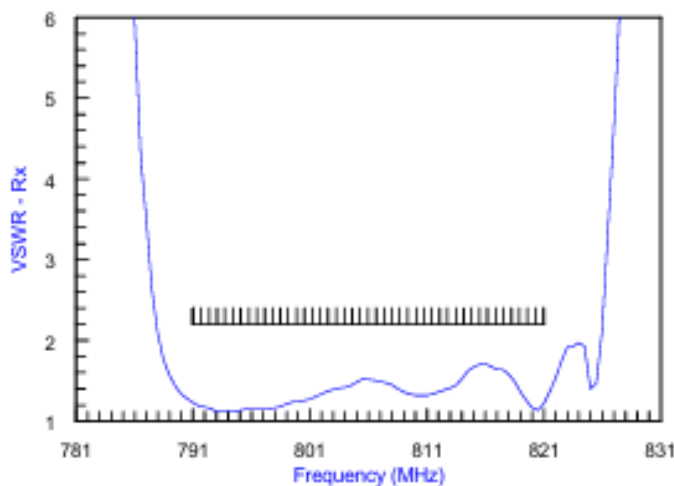
### 3.3 Plots

#### Tx - Ant



**Ant - Rx**

**Tx - Rx**

**Ant – VSWR / Impedance****Tx – VSWR / Impedance****Rx – VSWR / Impedance**

## 4.Packing Information

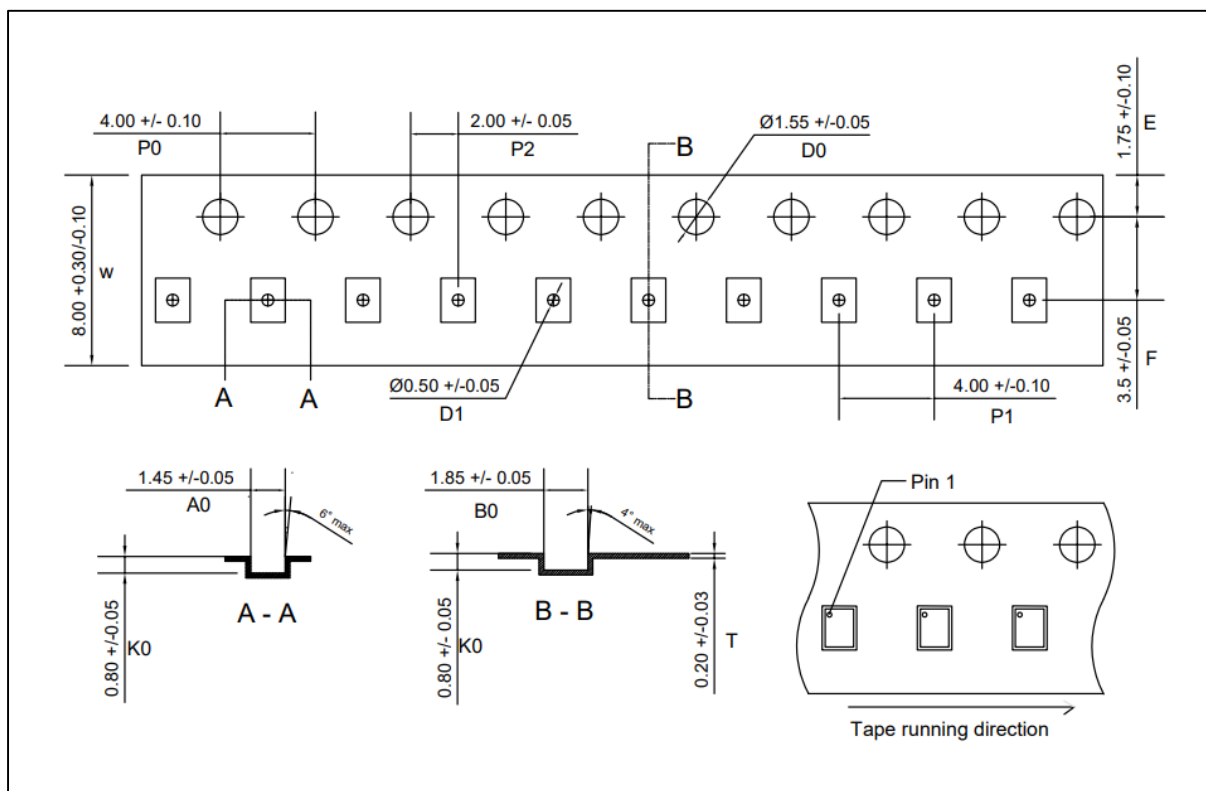


Figure 4-1 Carrier Tape Drawing (unit: mm)

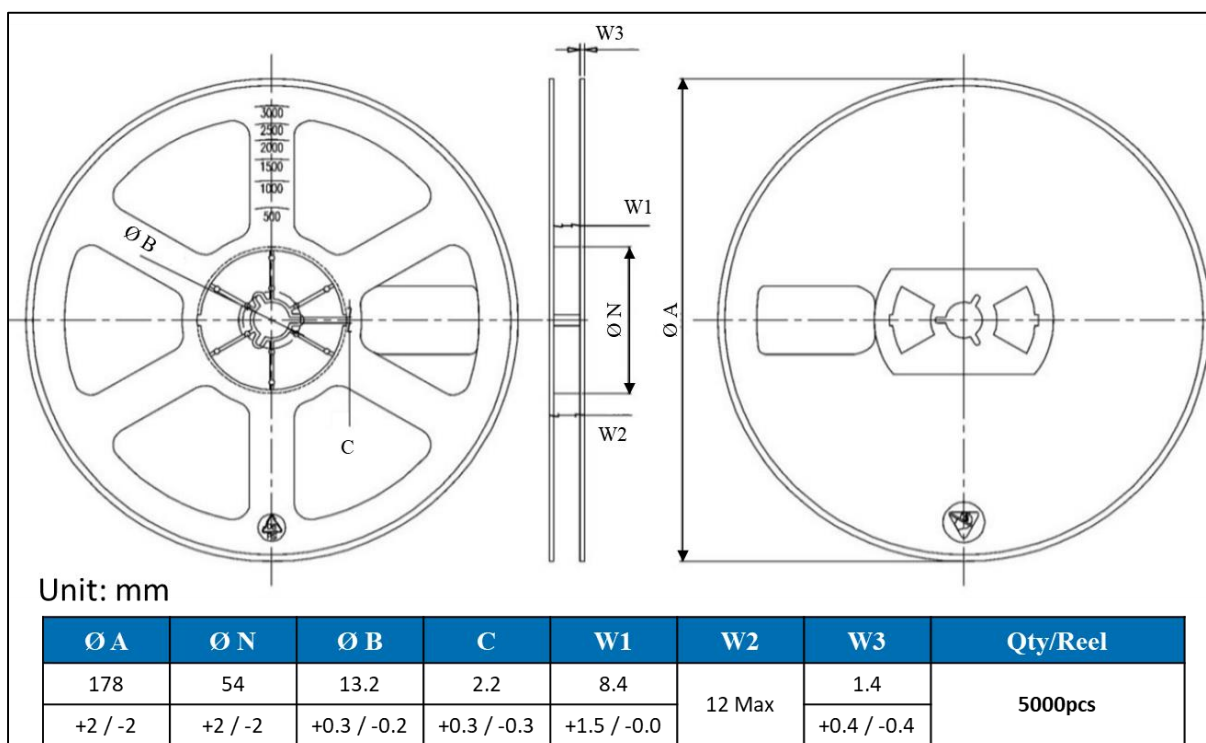


Figure 4-2 Reel Dimensions (Unit: mm) and Reeling Qty'