



HANGZHOU SAPPLAND MICROELECTRONICS TECHNOLOGY CO., LTD

SAW Device Data Sheet

Band 1 Duplexer / Unbalanced /1814

PN: [SPSD001U12A](#)

Rev: 1.1

Feature:

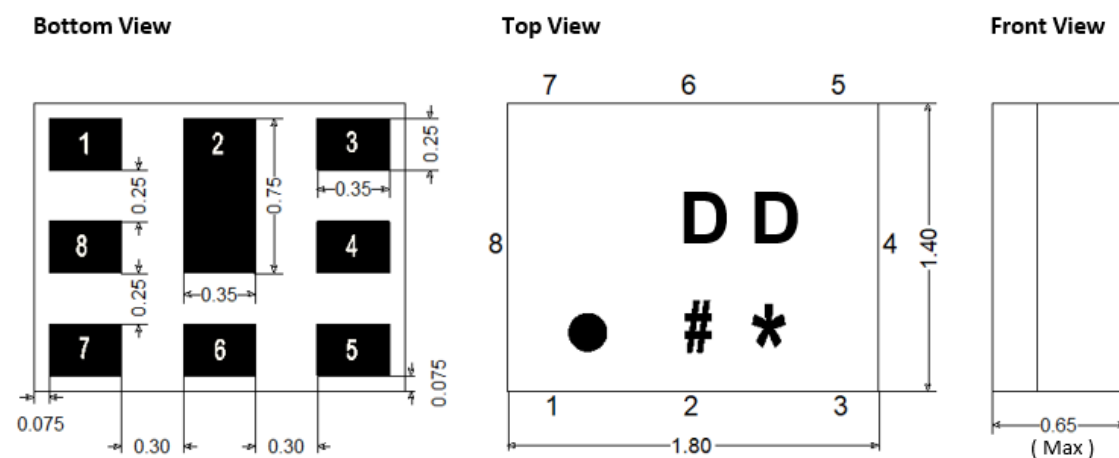
- low insertion loss
- high isolation between Tx and Rx

1.Revision History

Revision	Date	Comments
1.0	Jun-19-2024	Initial release
1.1	Jan-10-2025	Update marking

2.Package and Pin map

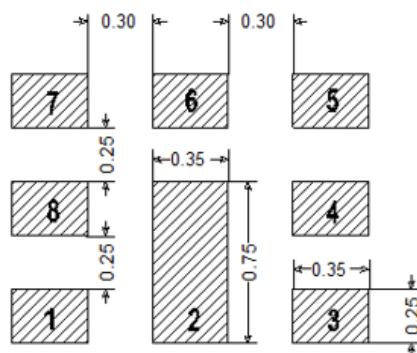
Package Dimensions(Unit: mm)



Pin No.	Pin definition
1	Rx Port
3	Tx Port
6	Ant Port
2,4,5,7,8	GND

Mark	Mark definition
D D	Product Code
●	Pin 1
# *	Date code

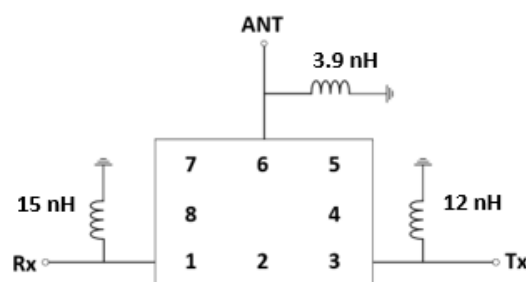
Recommended Land Pattern(Unit: mm)



Notes:

- 1, All dimensions are in millimeters
- 2, This drawing specifies the mounting pattern modification may be necessary to suit end user used on the Sappland evaluation board for this assembly material and process.

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	29 dBm	CW 5000h, 50°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. ¹	max		
Center Frequency		-	1950	-	MHz	
Insertion Loss	1920.00 ~ 1980.00 MHz		1.7	2.4	dB	
Amplitude ripple	1920.00 ~ 1980.00 MHz		0.5	1.2	dB	
VSWR	1920.00 ~ 1980.00 MHz		1.5	2.0	-	Tx
	1920.00 ~ 1980.00 MHz		1.5	2.0	-	ANT
Absolute attenuation	10.00 ~ 494.00 MHz	45	50		dB	
	814.00 ~ 894.00 MHz	40	45		dB	
	880.00 ~ 915.00 MHz	40	45		dB	
	925.00 ~ 960.00 MHz	35	40		dB	
	1226.00 ~ 1250.00 MHz	35	40		dB	
	1427.00 ~ 1463.00 MHz	35	40		dB	
	1475.00 ~ 1511.00 MHz	35	40		dB	
	1559.00 ~ 1606.00 MHz	35	40		dB	
	1805.00 ~ 1880.00 MHz	18	30		dB	
	2110.00 ~ 2170.00 MHz	43	47		dB	
	2300.00 ~ 2400.00 MHz	30	36		dB	
	2400.00 ~ 2500.00 MHz	30	36		dB	
	2620.00 ~ 2690.00 MHz	26	31		dB	
	3840.00 ~ 3960.00 MHz	15	24		dB	
	5000.00 ~ 5950.00 MHz	10	17		dB	

1) Typical value at 25±2deg.C

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

ANT to RX		Characteristics			Unit	Note
		min	Typ. ¹	max		
Center Frequency		-	2140	-	MHz	
Insertion Loss	2110.00 ~ 2170.00 MHz		1.9	2.8	dB	
Amplitude ripple	2110.00 ~ 2170.00 MHz		0.5	1.2	dB	
VSWR	2110.00 ~ 2170.00 MHz		1.6	2.0	-	Rx
	2110.00 ~ 2170.00 MHz		1.6	2.0	-	ANT
Absolute attenuation	10.00 ~ 718.00 MHz	40	50		dB	
	718.00 ~ 748.00 MHz	40	45		dB	
	814.00 ~ 849.00 MHz	40	45		dB	
	880.00 ~ 915.00 MHz	40	45		dB	
	1427.00 ~ 1463.00 MHz	35	39		dB	
	1710.00 ~ 1785.00 MHz	35	39		dB	
	1920.00 ~ 1980.00 MHz	45	50		dB	
	2300.00 ~ 2400.00 MHz	35	40		dB	
	2400.00 ~ 2500.00 MHz	35	40		dB	
	2500.00 ~ 2570.00 MHz	35	40		dB	
	4220.00 ~ 4340.00 MHz	30	37		dB	
	4900.00 ~ 5950.00 MHz	30	37		dB	

1) Typical value at 25±2deg.C

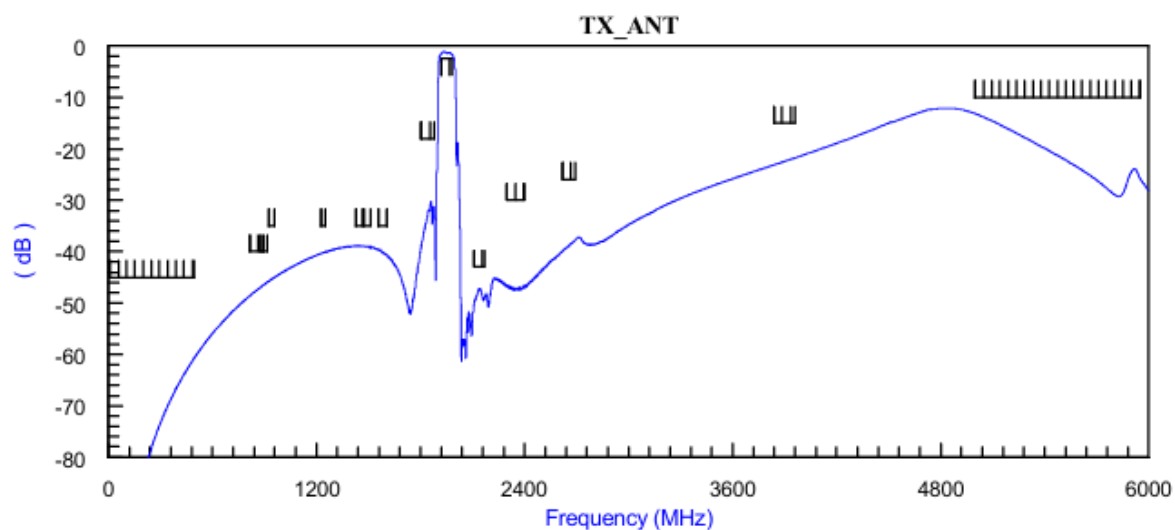
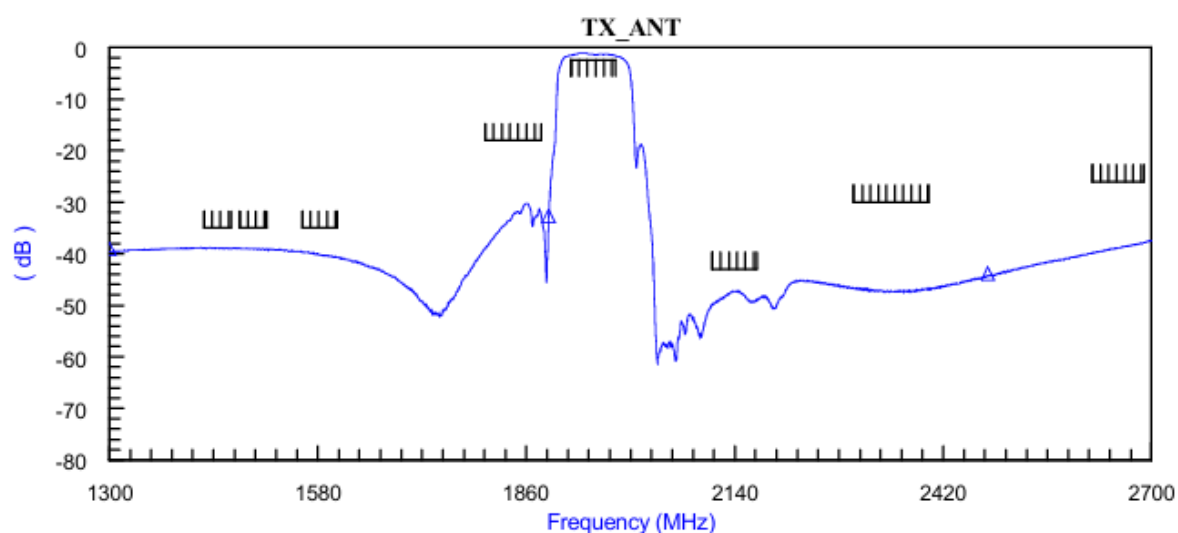
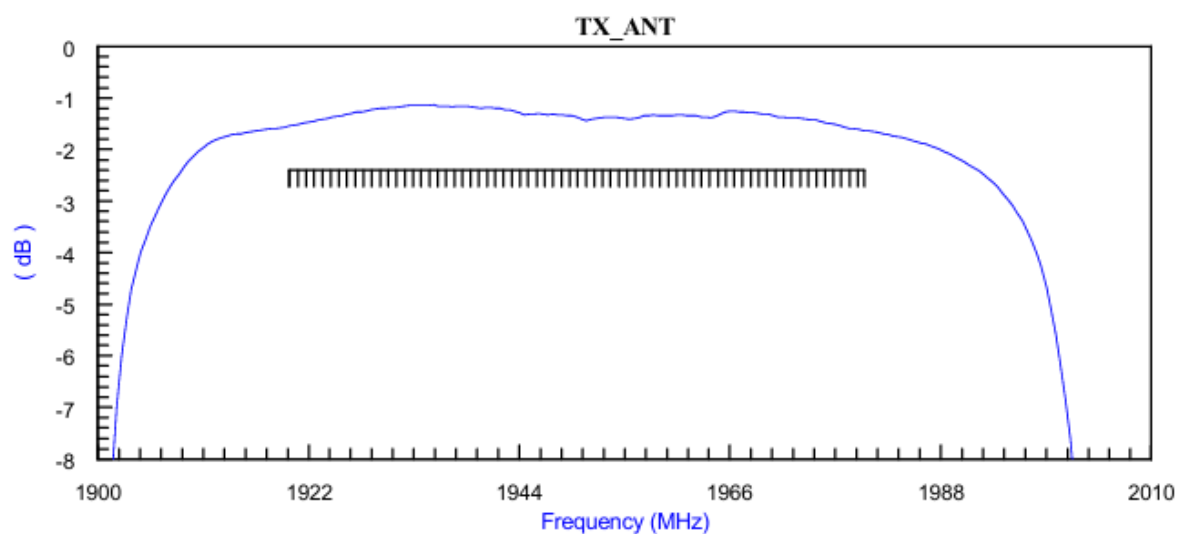
Tx/Rx Electrical specification (-30 to +85 °C)

TX / RX		Characteristics			Unit	Note
		min	Typ. ¹	max		
Isolation	1920.00 ~ 1980.00 MHz	47	52		dB	
	2110.00 ~ 2170.00 MHz	47	52		dB	

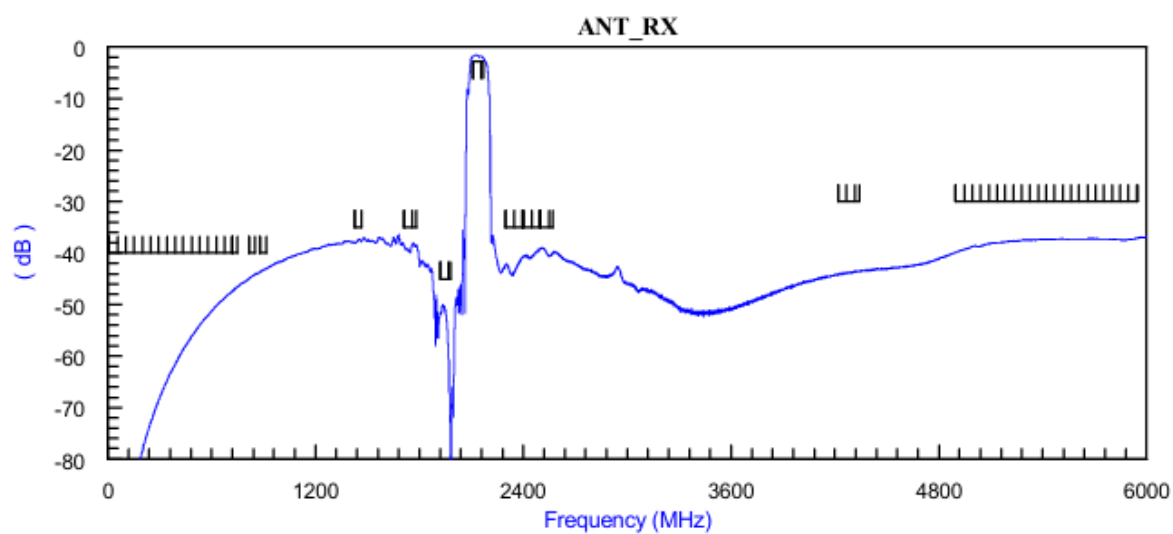
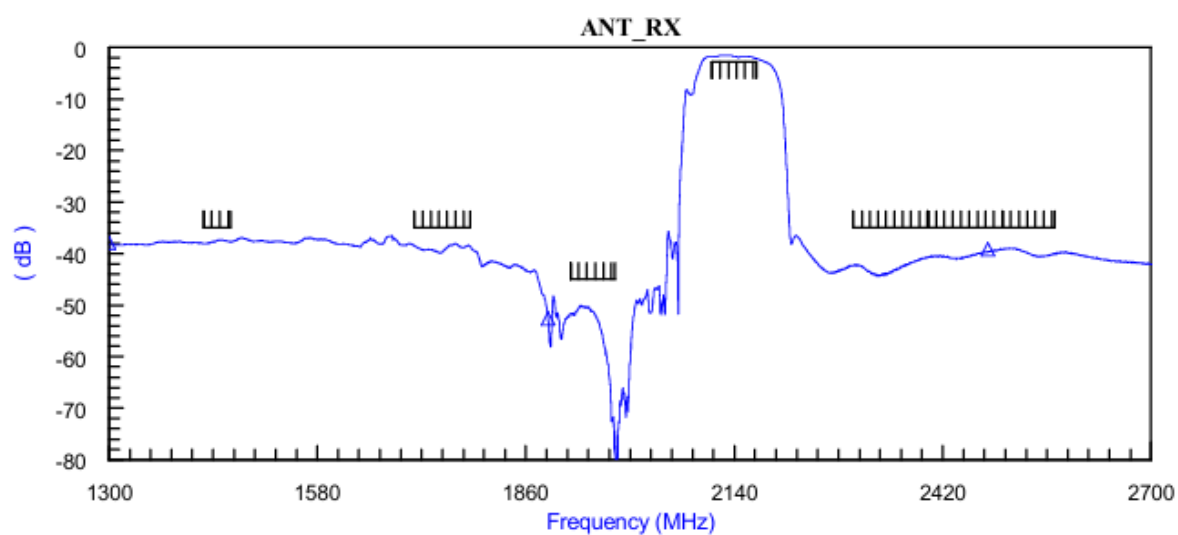
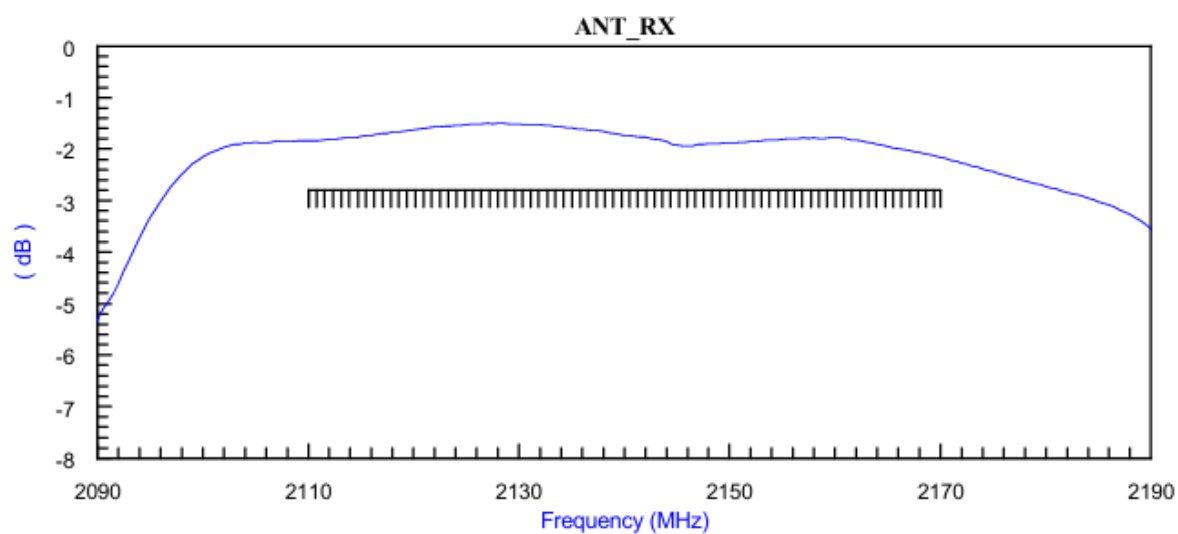
1) Typical value at 25±2deg.C

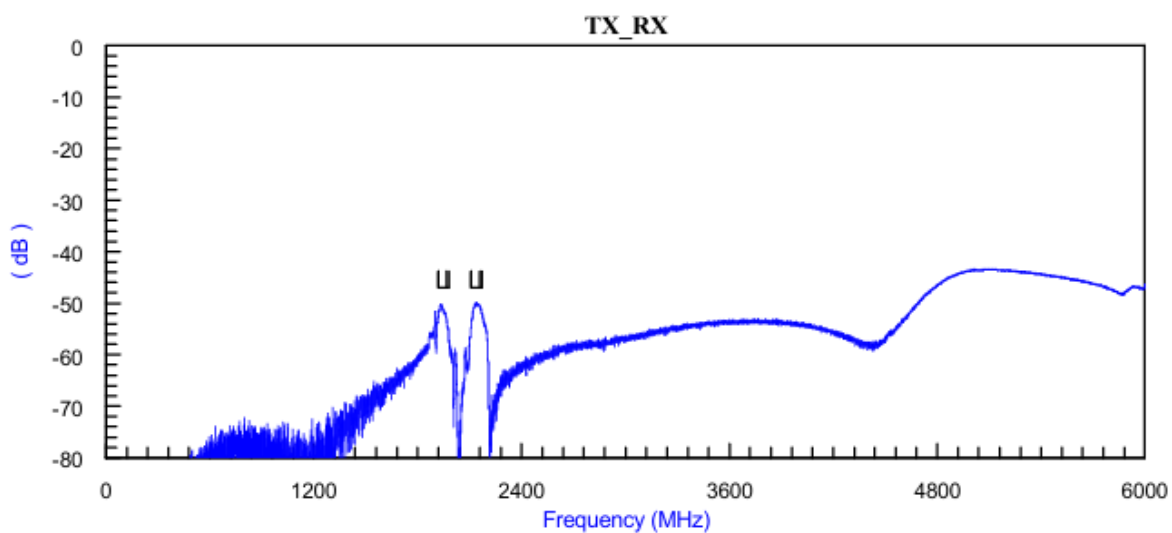
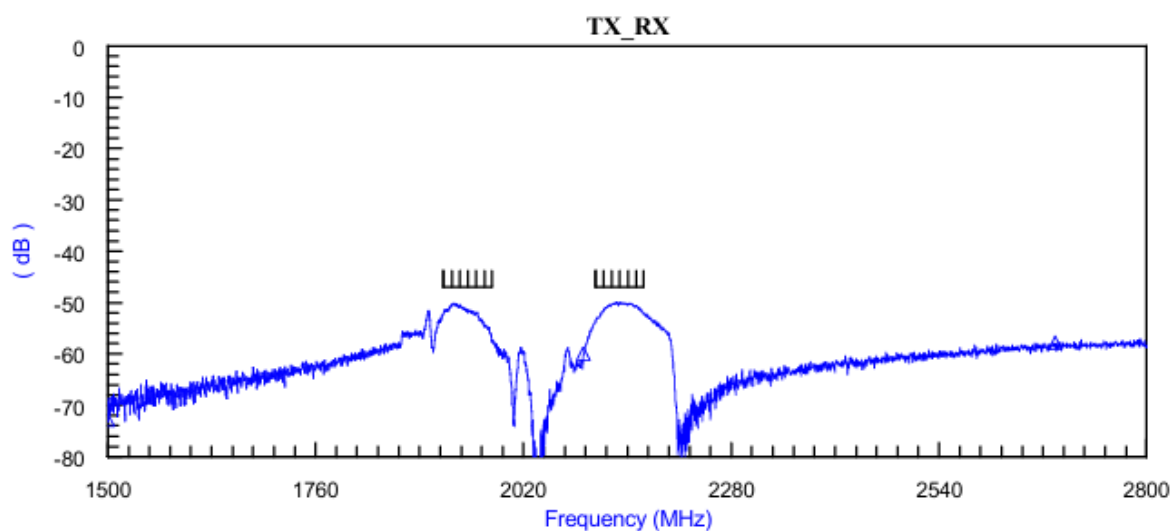
3.3 Plots

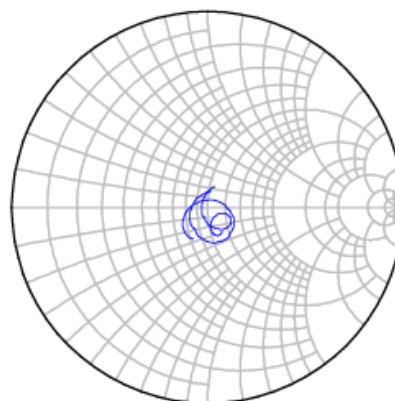
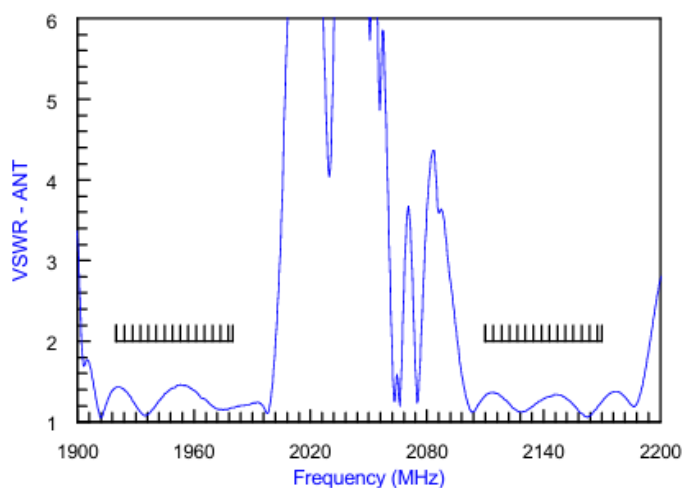
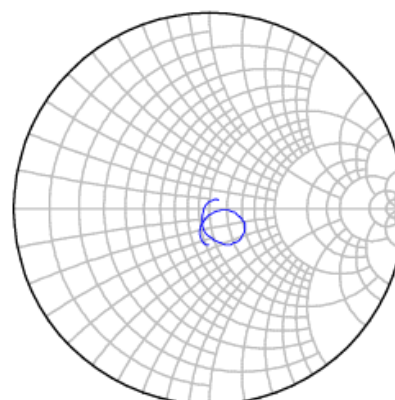
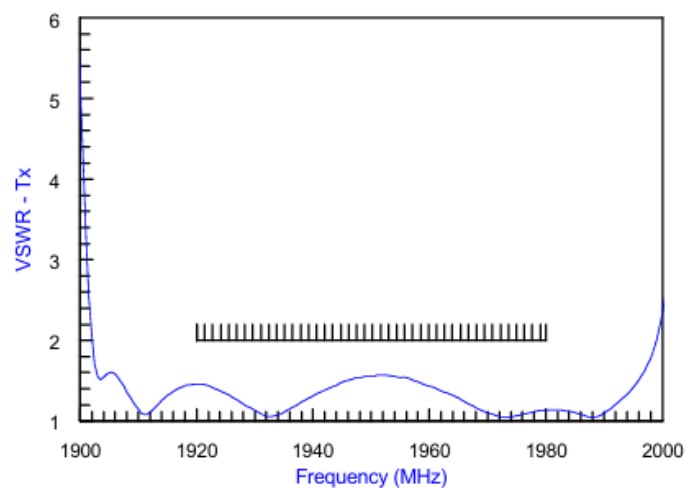
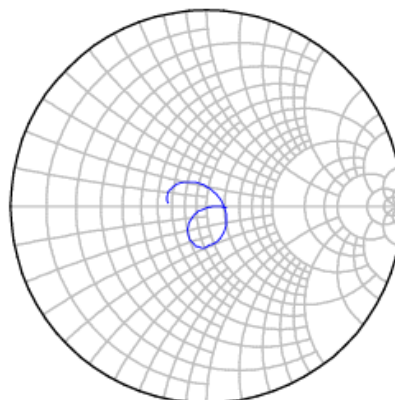
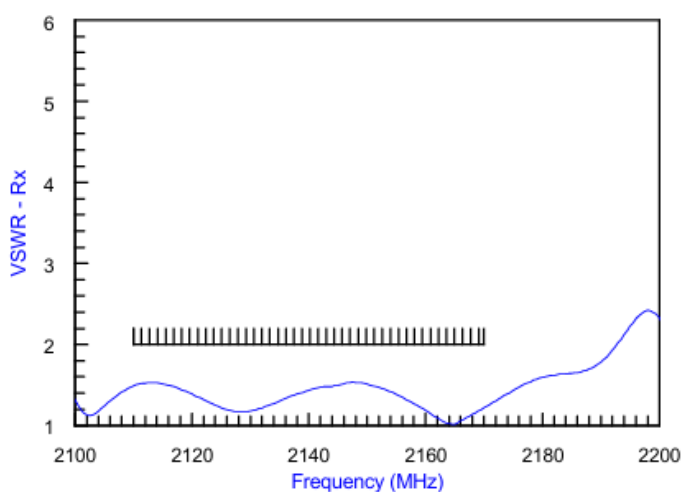
Tx - Ant



Ant - Rx



Tx – Rx

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

4.Packing Information

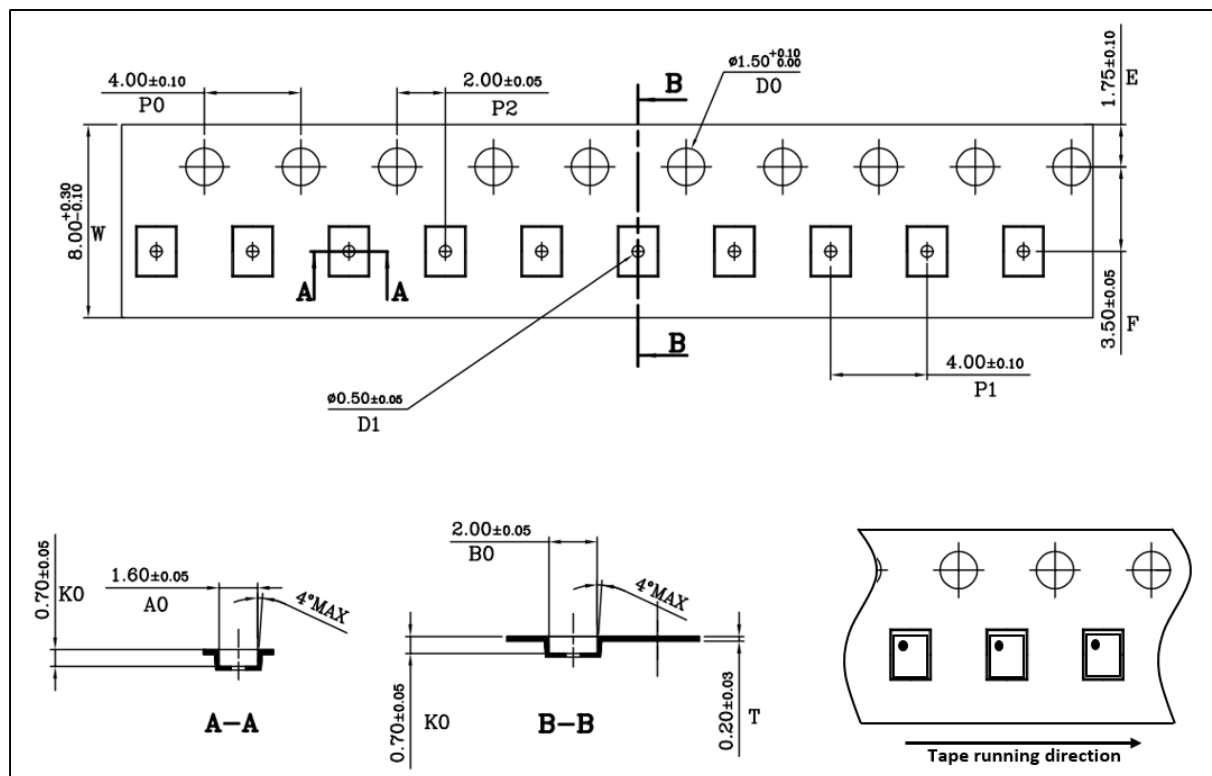


Figure 4-1 Carrier Tape Drawing (unit: mm)

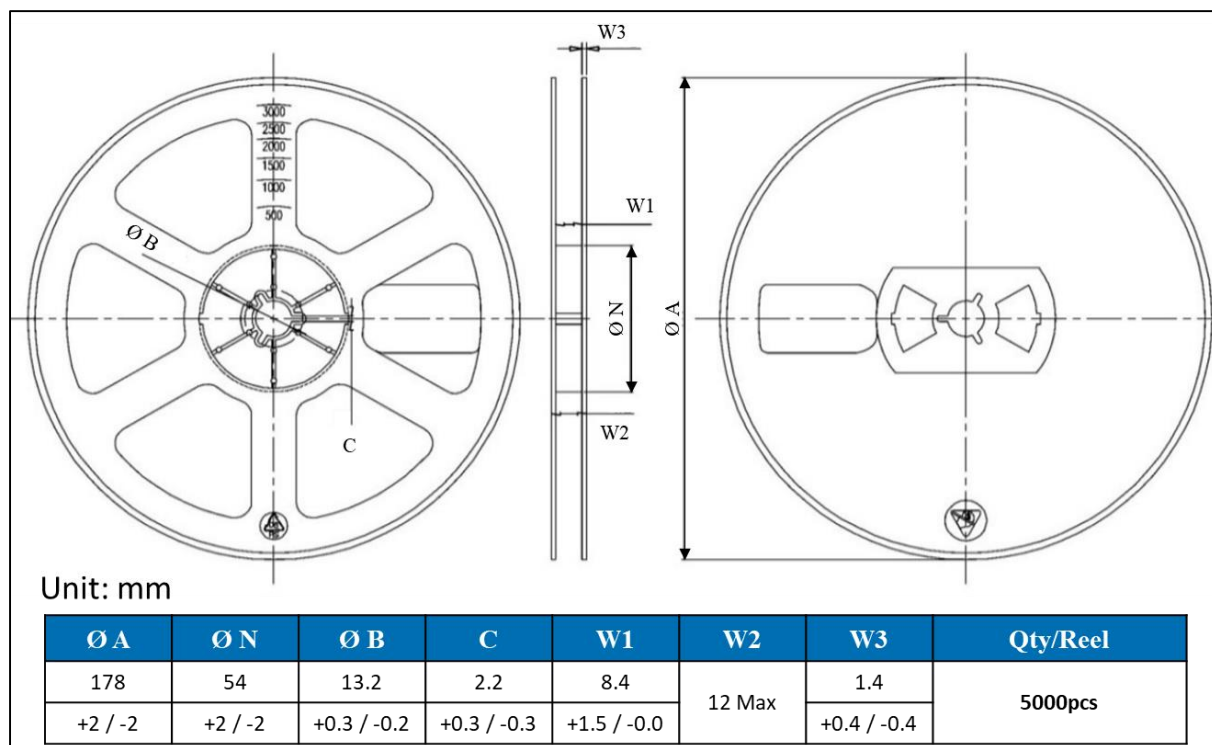


Figure 4-2 Reel Dimensions (Unit: mm) and Reeling Qty'