HANGZHOU SAPPLAND MICROELECTRONICS TECHNOLOGY CO., LTD

SAW Device Data Sheet

Band 7 Duplexer / Unbalanced /1814

PN: SPSD007U12A

Rev: 1.3

Feature:

- low insertion loss
- high isolation between Tx and Rx

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1.Revision History

Revision	Date	Comments
1.0	Oct-30-2023	Initial release
1.1	Mar-15-2024	Update specification table
1.2	May-07-2024	Add pin numbers in package Top view Change plots format , add limit lines in plots, add VSWR plots
1.3	Oct-08-2024	Update tx performance , packing Qty'/reel

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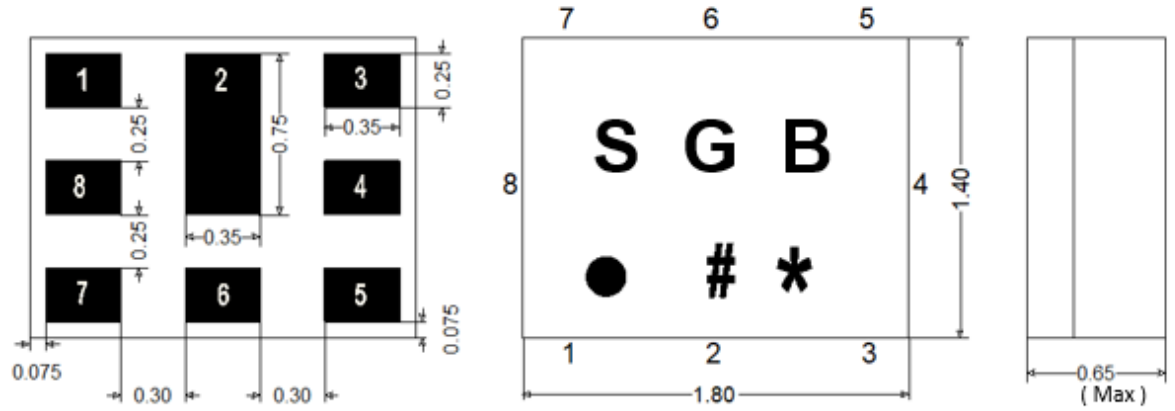
2.Package and Pin map

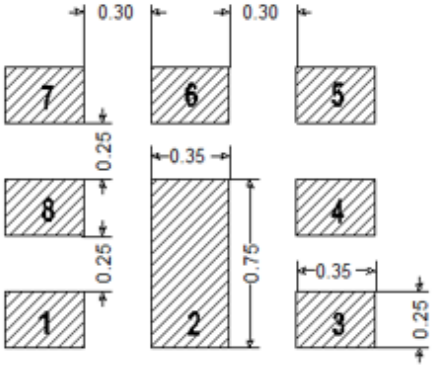
Package Dimensions(Unit: mm)



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

Mark	Mark definition
S G B	Product Code
●	Pin 1
# *	Date code

Recommended Land Pattern(Unit: mm)

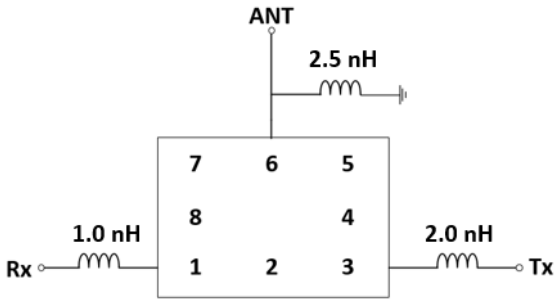


Notes:

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)



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3.Performance

3.1 Absolute maximum ratings

Item	Rating	Note
Storage Temperature	-40 ~ 85 ℃	
Operating Temperature	-30 ~ 85 ℃	
Input Power Max	30 dBm	CW 5000h,50℃
D.C Voltage between the terminals	3 V	25±2deg.C

3.2 Electrical specification

Tx Electrical specification （-30 to +85 ℃）

TX to ANT		Characteristics			Unit	Note
		min	Typ. [1]	max		
Center Frequency		-	2535.00	-	MHz	
Insertion Loss	2500.00 ~ 2570.00 MHz		2.3	3.2	dB	
Amplitude ripple	2500.00 ~ 2570.00 MHz		0.7	2.0	dB	
VSWR	2500.00 ~ 2570.00 MHz		1.5	2.0	-	Tx
	2500.00 ~ 2570.00 MHz		1.5	2.0	-	ANT
Absolute attenuation	10.00 ~ 1559.00 MHz	25	32		dB	
	791.00 ~ 821.00 MHz	35	44		dB	
	1166.00 ~ 1254.00 MHz	30	36		dB	
	1559.00 ~ 1607.00 MHz	25	32		dB	
	1710.00 ~ 1785.00 MHz	25	30		dB	
	1805.00 ~ 1880.00 MHz	25	30		dB	
	2010.00 ~ 2025.00 MHz	25	30		dB	
	2110.00 ~ 2200.00 MHz	25	29		dB	
	2400.00 ~ 2466.00 MHz	30	38		dB	
	2453.00 ~ 2471.00 MHz	18	29		dB	
	2458.00 ~ 2476.00 MHz	10	18		dB	
	2463.00 ~ 2481.00 MHz	6	9		dB	
	2453.00 ~ 2471.00 MHz	30	35		dBint	
	2458.00 ~ 2476.00 MHz	25	33		dBint	
	2463.00 ~ 2481.00 MHz	15	23		dBint	
	2620.00 ~ 2690.00 MHz	40	54		dB	
	3300.00 ~ 3800.00 MHz	30	34		dB	
	3800.00 ~ 4200.00 MHz	30	41		dB	
	4900.00 ~ 5950.00 MHz	15	22		dB	
	5000.00 ~ 5140.00 MHz	25	34		dB	

1) Typical value at 25±2deg.C

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Rx Electrical specification （-30 to +85 ℃）

ANT to RX		Characteristics			Unit	Note
		min	Typ. [1]	max		
Center Frequency		-	2655.00	-	MHz	
Insertion Loss	2620.00 ~ 2690.00 MHz		2.3	3.2	dB	
Amplitude ripple	2620.00 ~ 2690.00 MHz		0.5	1.7	dB	
VSWR	2620.00 ~ 2690.00 MHz		1.6	2.2	-	Rx
	2620.00 ~ 2690.00 MHz		1.5	2.2	-	ANT
Absolute attenuation	120.00 MHz	45	50		dB	
	10.00 ~ 2500.00 MHz	33	37		dB	
	718.00 ~ 748.00 MHz	40	51		dB	
	832.00 ~ 862.00 MHz	40	48		dB	
	880.00 ~ 915.00 MHz	40	47		dB	
	1710.00 ~ 1785.00 MHz	35	39		dB	
	1850.00 ~ 1915.00 MHz	35	38		dB	
	1920.00 ~ 1980.00 MHz	35	38		dB	
	2300.00 ~ 2400.00 MHz	35	41		dB	
	2500.00 ~ 2570.00 MHz	40	53		dB	
	3300.00 ~ 3800.00 MHz	30	40		dB	
	3300.00 ~ 4200.00 MHz	30	36		dB	
	4900.00 ~ 5950.00 MHz	20	29		dB	

1) Typical value at 25±2deg.C

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

TX / RX		Characteristics			Unit	Note
		min	Typ. [1]	max		
Isolation	2500.00 ~ 2570.00 MHz	50	56		dB	
	2500.00 ~ 2570.00 MHz	51 [2)]	56		dB	
	2620.00 ~ 2690.00 MHz	50	57		dB	
	2620.00 ~ 2690.00 MHz	52 [2)]	57		dB	

1) Typical value at 25±2deg.C

2) Valid for typical temperature 25 deg.C

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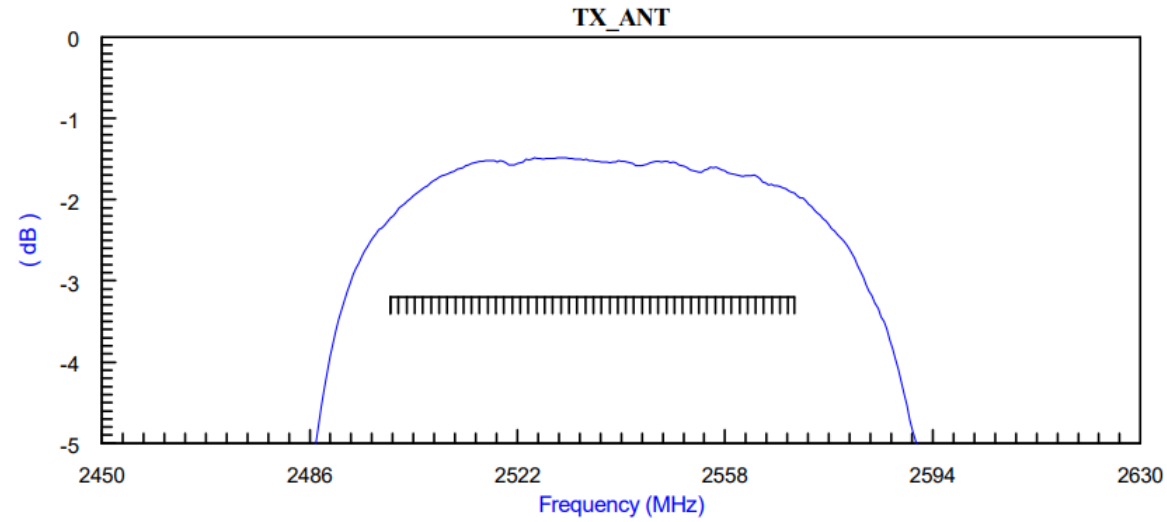
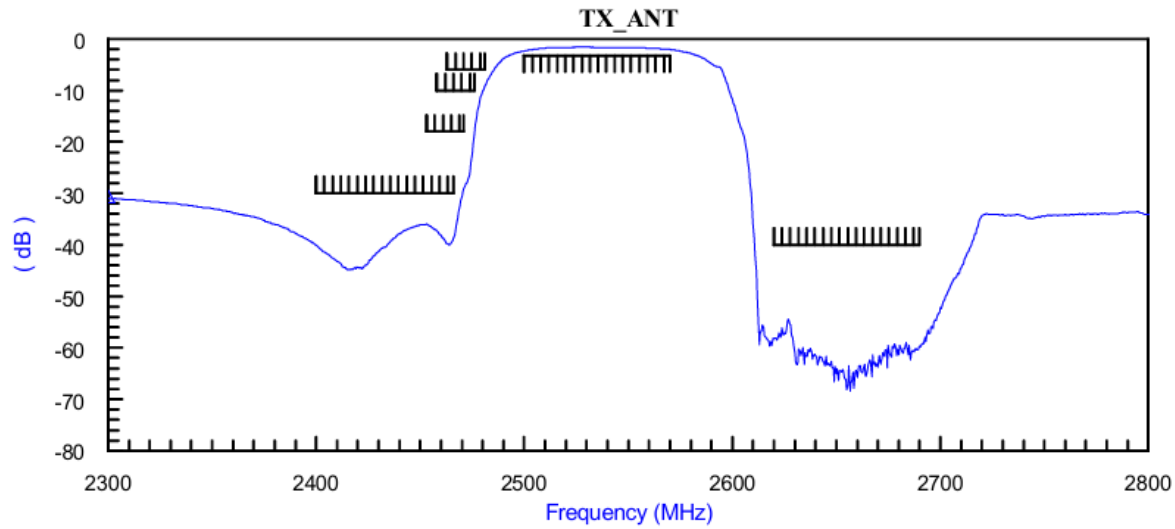
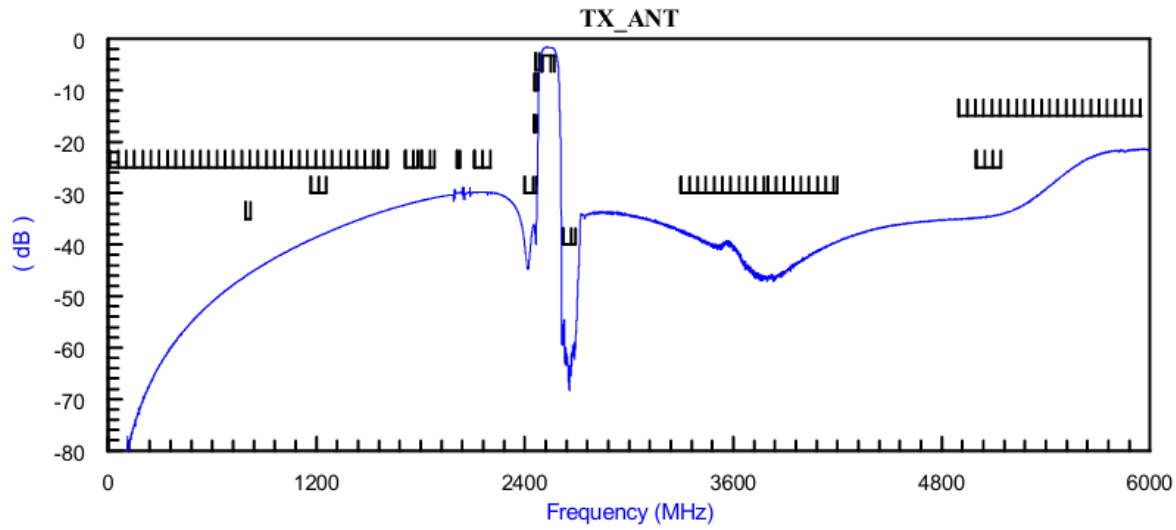
3.3 Plots

Tx-Ant







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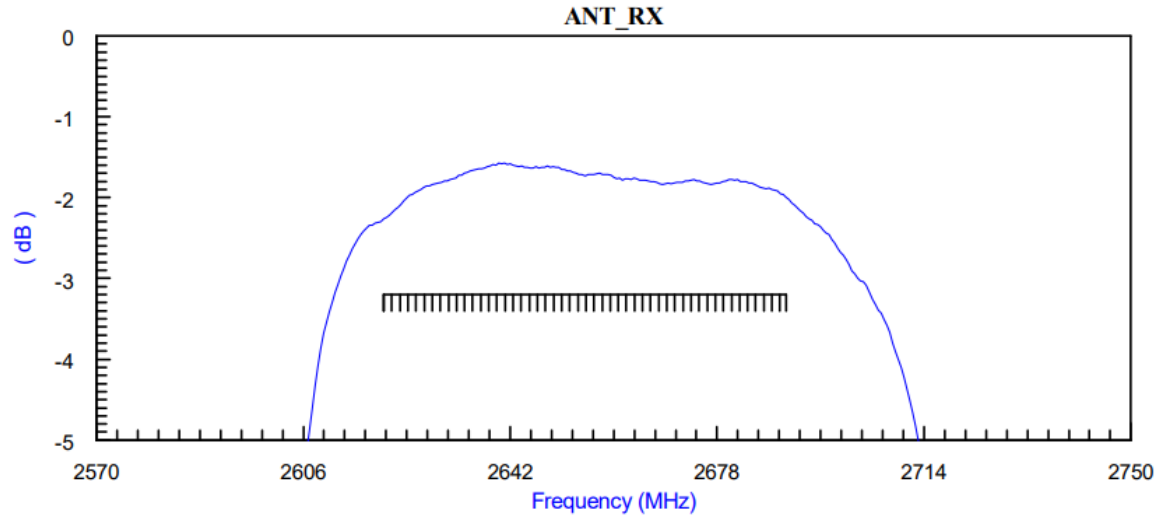
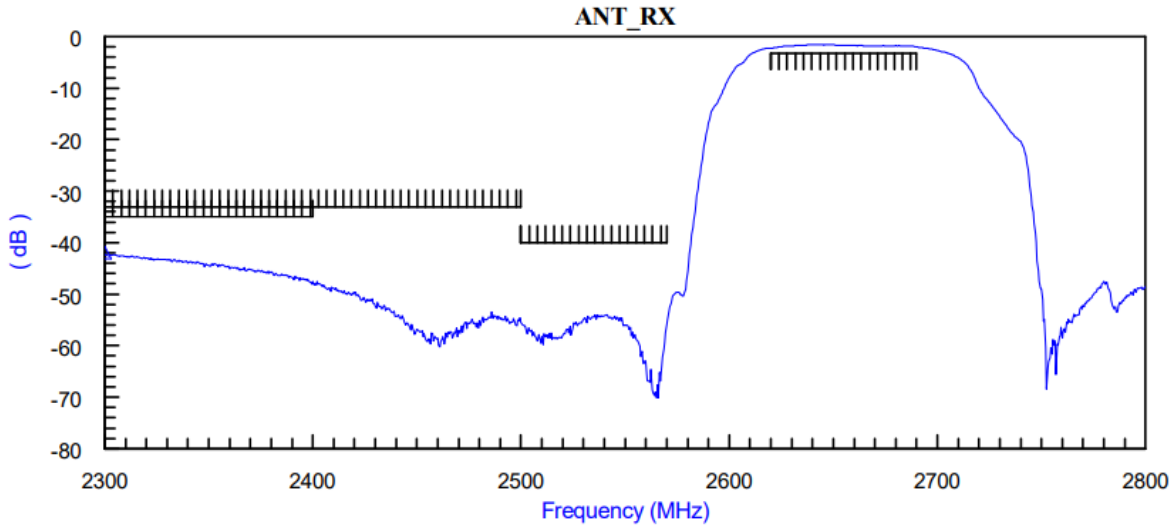
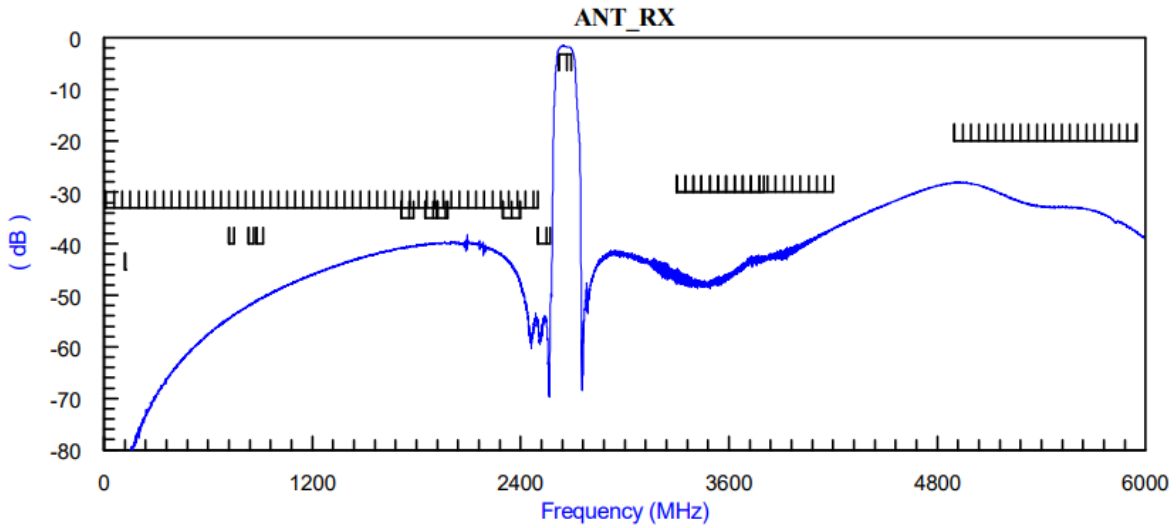
Ant-Rx







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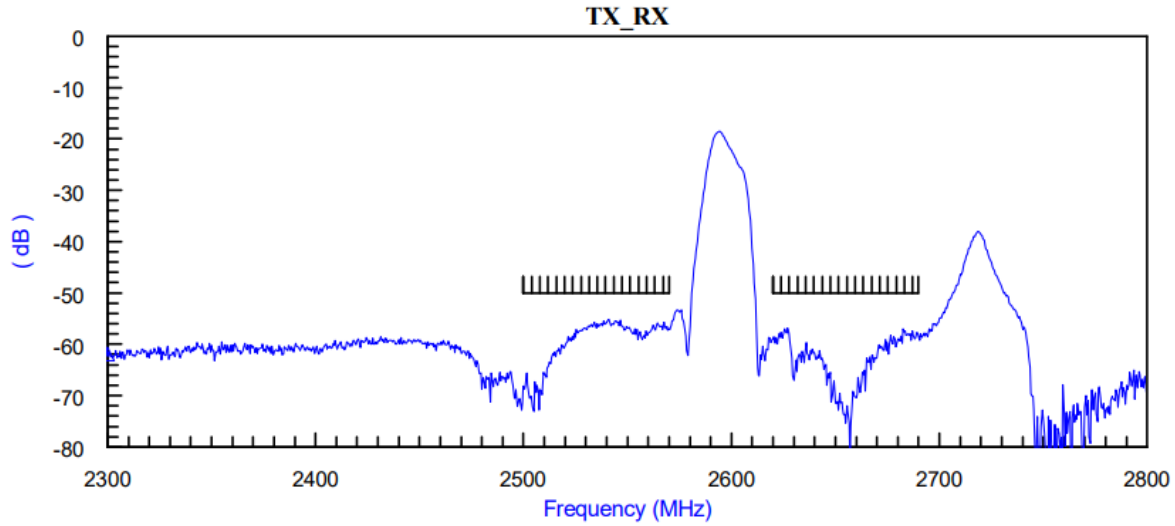
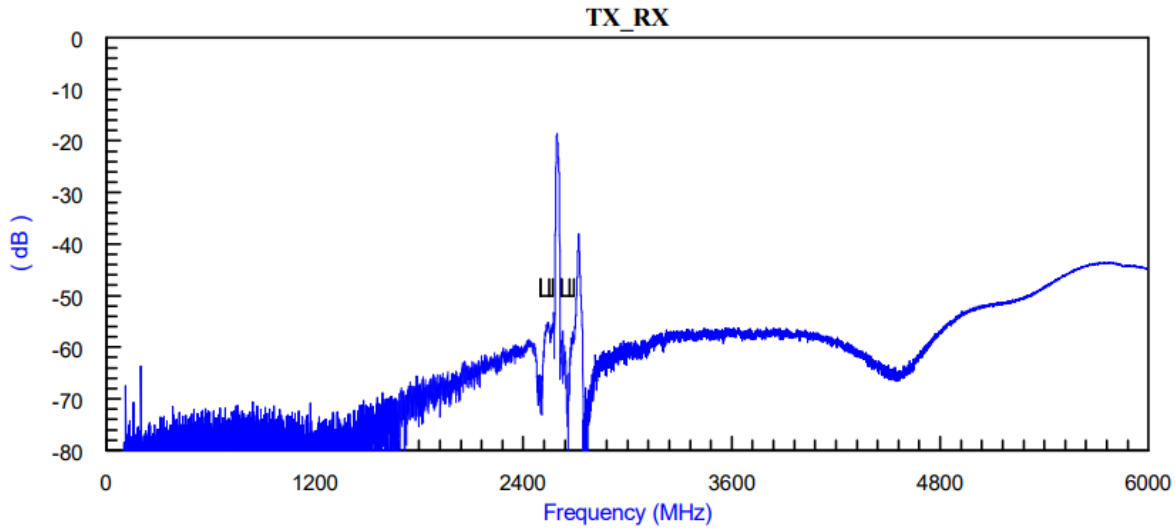
Tx-Rx





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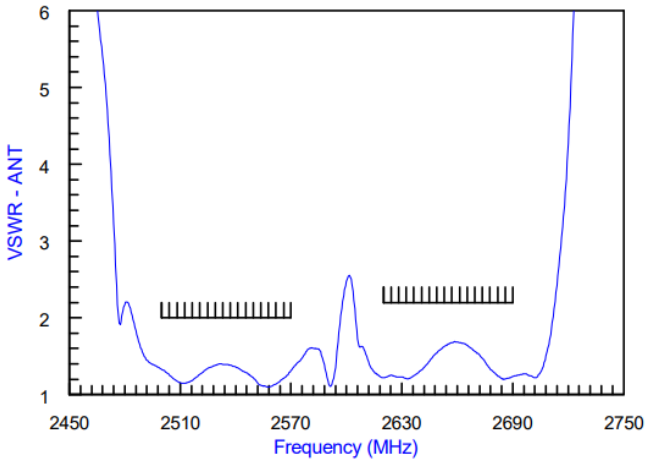
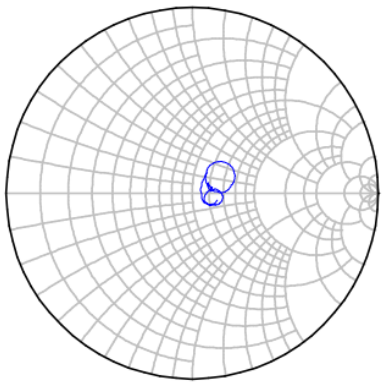
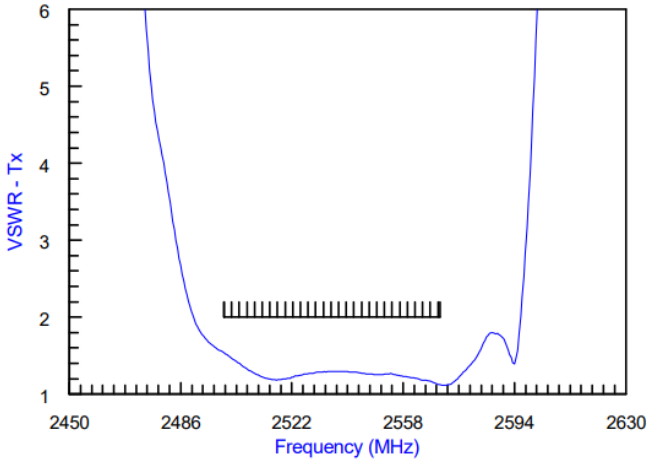
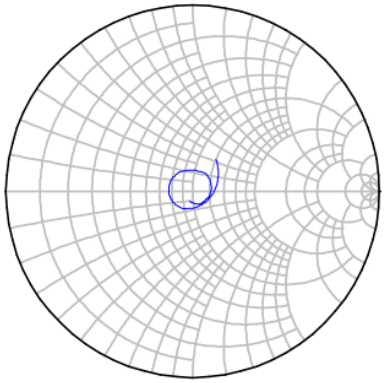
ANT – VSWR / Impedance



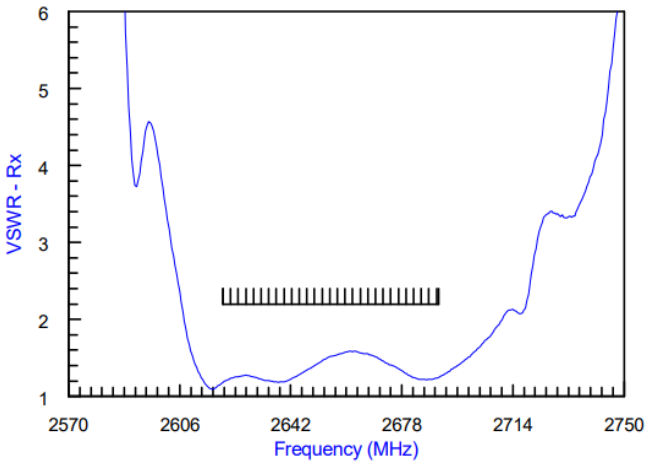


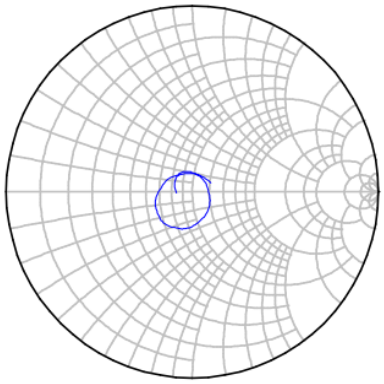
Tx – VSWR / Impedance





Rx – VSWR / Impedance





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4.Packing Information

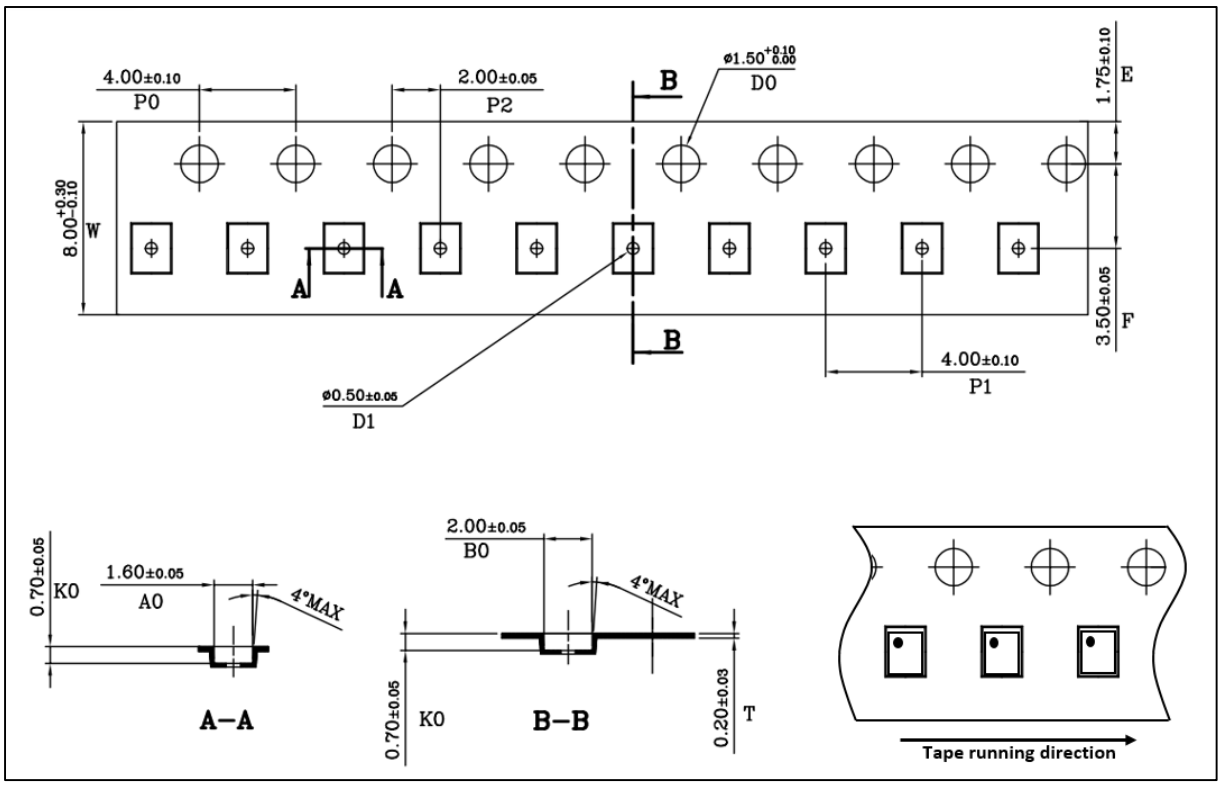
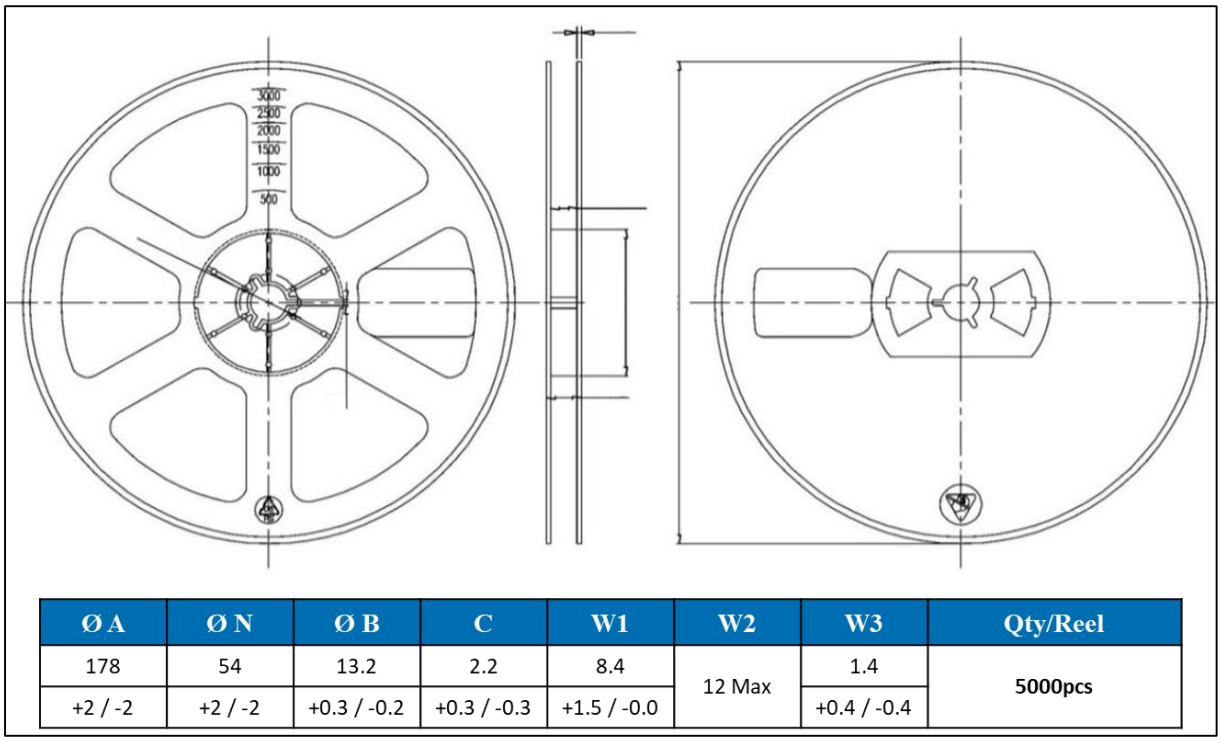


Figure 4-1 Carrier Tape Drawing (unit: mm)



Ø A	Ø N	Ø B	C	W1	W2	W3	Qty/Reel
178	54	13.2	2.2	8.4	12 Max	1.4	5000pcs
+2 / -2	+2 / -2	+0.3 / -0.2	+0.3 / -0.3	+1.5 / -0.0		+0.4 / -0.4	

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

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