

**SAW Duplexer 1883.0 / 1963.0MHz**

**Model: TF0136A**

**Part No: MP07869**

**Rev. No: 2**

**A. MAXIMUM RATING:**

Electrostatic Sensitive Device (ESD)

1. Input power: 29dBm (Ta=+50°C, 50000h, CW) min 15dBm (CW @100000h and 85°C).
2. Maximum DC Voltage: ±3V
3. Operating temperature range: -10°C to +85°C
4. Storage temperature range: -10°C to +85°C
5. Moisture Sensitivity Level: Level 1 (MSL 1)
6. ESD 50V (MM), 150V(HBM)

**B. ELECTRICAL CHARACTERISTICS:**

1. Terminating impedance (Tx Port): 50Ω (Single-ended)
2. Terminating impedance (Rx Port): 50Ω (Single-ended)
3. Terminating impedance (Ant Port): 50 // 3.9nH Ω (Single-ended)

**Tx to ANT**

Parameters Description		Unit	Min.	Typ.	Max.	Note	
Insertion Loss	1850~ 1915MHz	dB(*1)	-	2.4	3.8		
	1850.48~ 1909.52MHz			1.9	2.7	(*2)	
	1850.625~1909.375MHz			2.0	3.0	(*3)	
Ripple(any 5MHz)	1850 ~ 1915MHz	dB	-	0.5	2.4		
VSWR	ANT	1850 ~ 1915MHz	-	-	1.6	2.1	
	Tx		-	-	1.6	2.2	
Attenuation:							
1559 ~1563 MHz		dB	31	34	-	-	
1565.4 ~ 1573.4MHz		dB	31	34	-	-	
1573.4 ~ 1577.5MHz		dB	31	34	-	-	
1577.5 ~ 1585.4MHz		dB	31	34	-	-	
1597.6 ~ 1605.9MHz		dB	31	34	-	-	
1930 ~ 1995MHz		dB	35	50	-	-10~25°C	
1930 ~ 1995MHz		dB	45	50	-	+25~85°C	
2400 ~ 2500MHz		dB	22	36			
3700 ~ 3830MHz		dB	28	38			
5550 ~ 5745MHz		dB	20	30			

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**ANT to Rx**

Parameters Description		Unit	Min.	Typ.	Max.	Note
Insertion Loss	1930.48~1994.52MHz	dB(*1)	-	2.7	3.8	-10~25°C
					3.6	+25~85°C
Ripple(any 5MHz)		1930.48~1994.52MHz	dB	-	0.8	2.5
VSWR	ANT	1930.48~1994.52MHz	-	-	1.7	2.2
	Rx		-	-	1.8	2.3
Attenuation:						
1850 ~ 1915MHz			dB	40	57	-
2400 ~ 2500MHz			dB	40	49	-
3860 ~ 3990MHz			dB	40	63	
5790 ~ 5985MHz			dB	40	65	

**Tx to Rx**

Isolation	1850.25~1914.75MHz	dB	53	57	-	-10~60°C
		dB	50	57	-	+60~85°C
	1930.25~1994.75MHz	dB	45	52	-	(*3)-10~25°C
		dB	48	52		(*3)+25~85°C

(\*1) Specification of insertion loss excludes loss that comes from the test board.

(\*2) The integrated isolation over channel band width ( $\pm 1.92$ MHz).

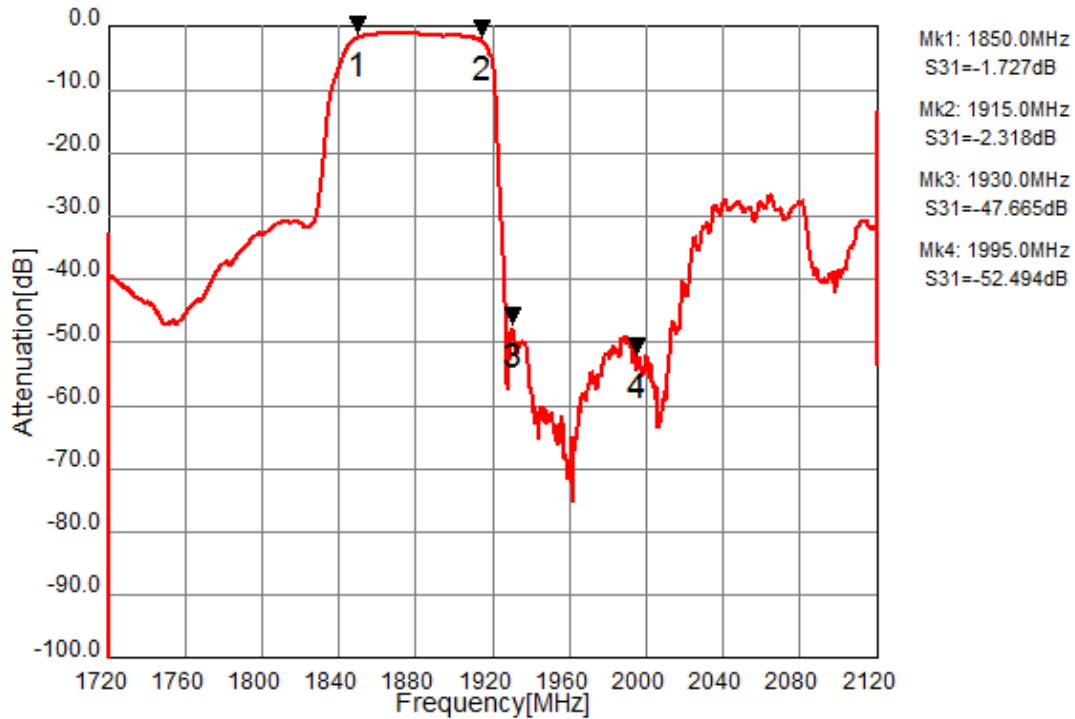
(\*3) The integrated isolation over channel band width ( $\pm 0.625$ MHz).

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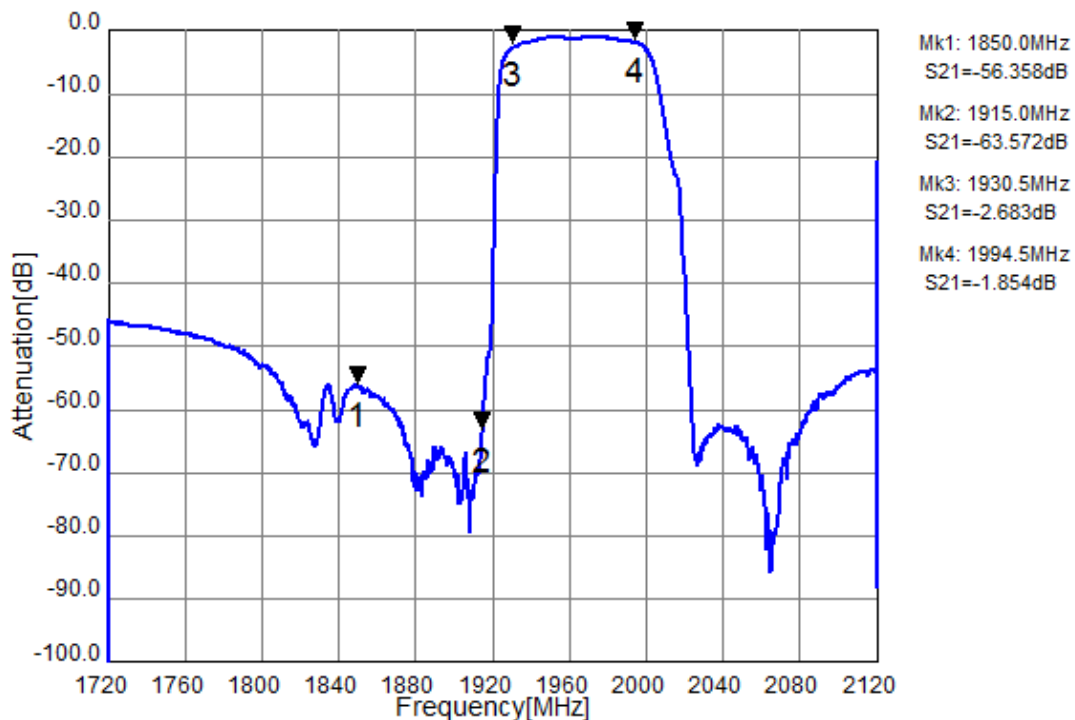
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**Rev. No: 2**

**C. FREQUENCY CHARACTERISTICS:**

Tx to Ant



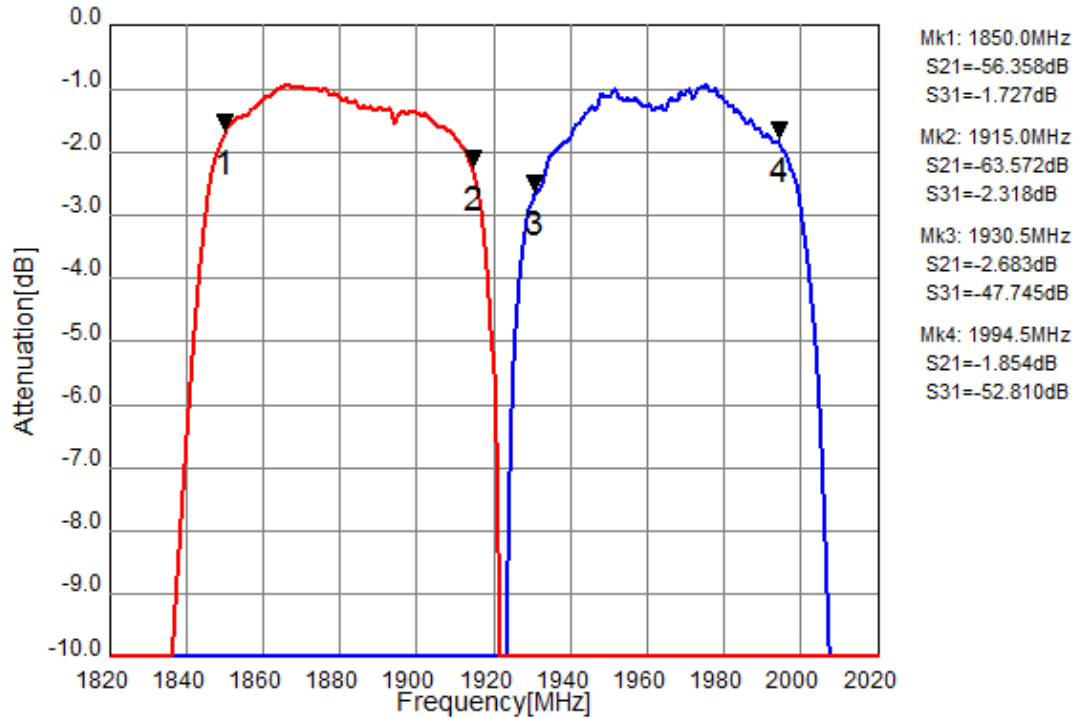
Ant to Rx



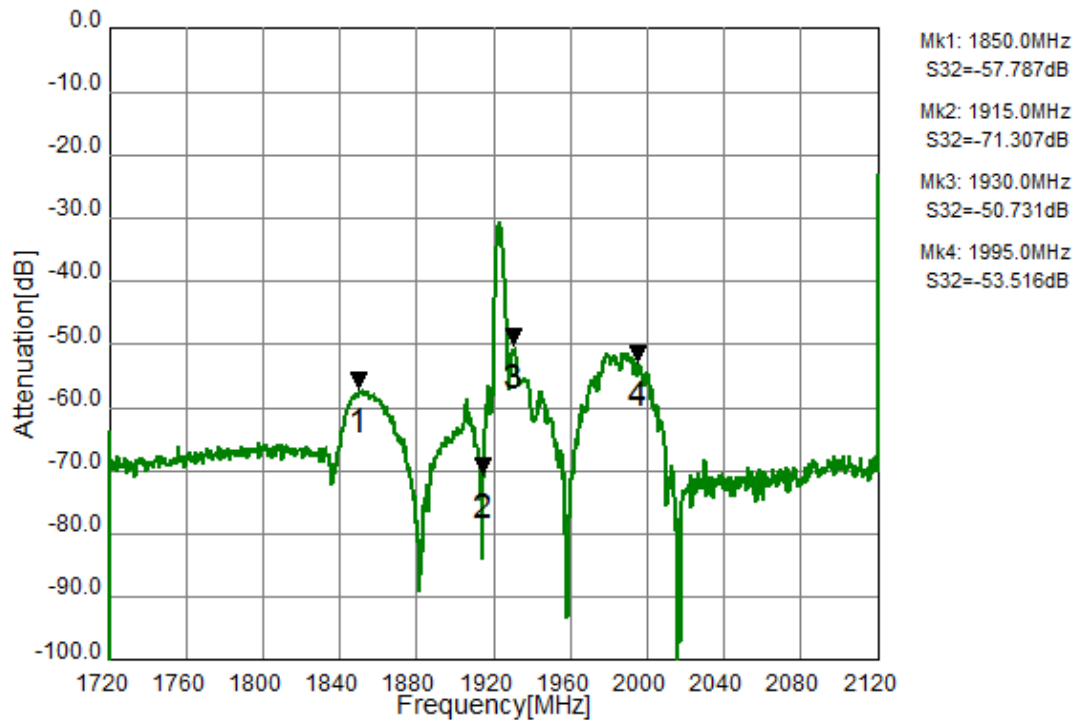
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Tx to Ant, Ant to Rx



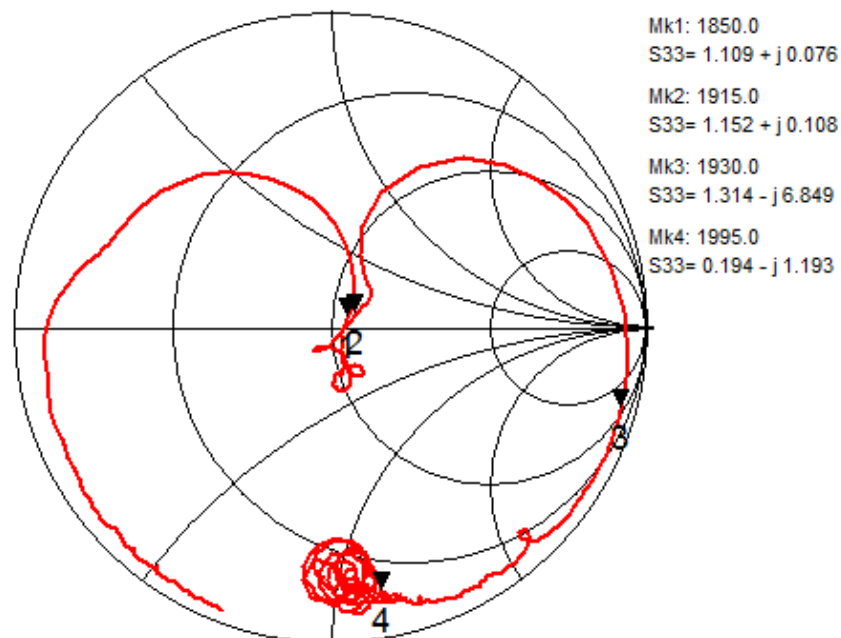
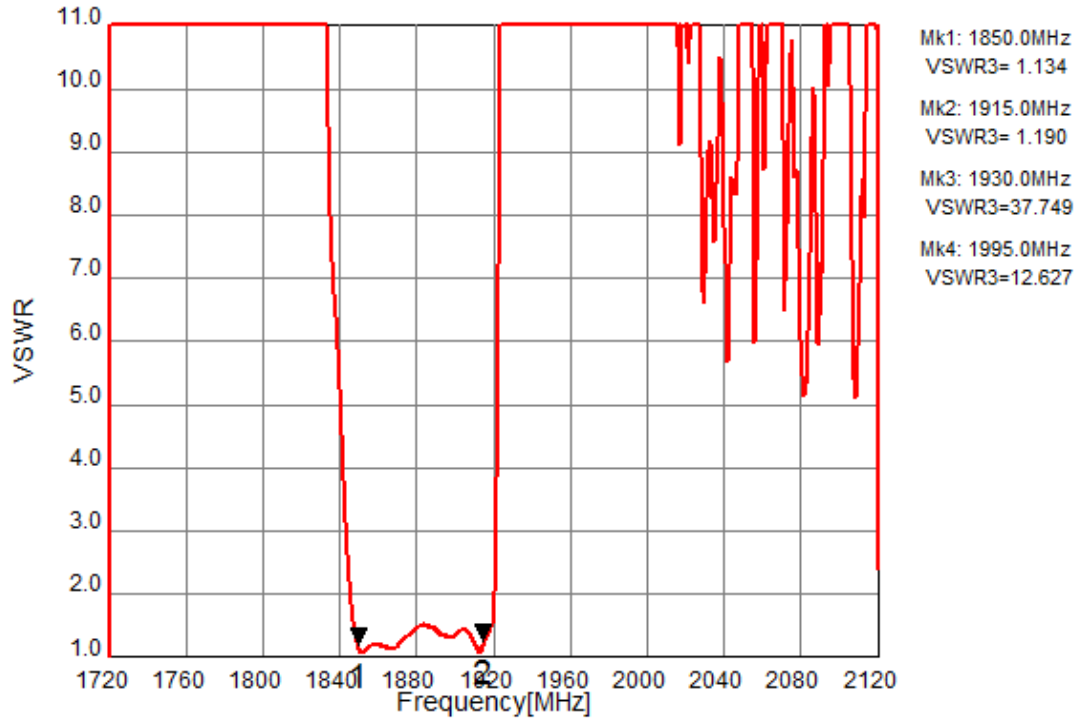
Tx to Rx Isolation



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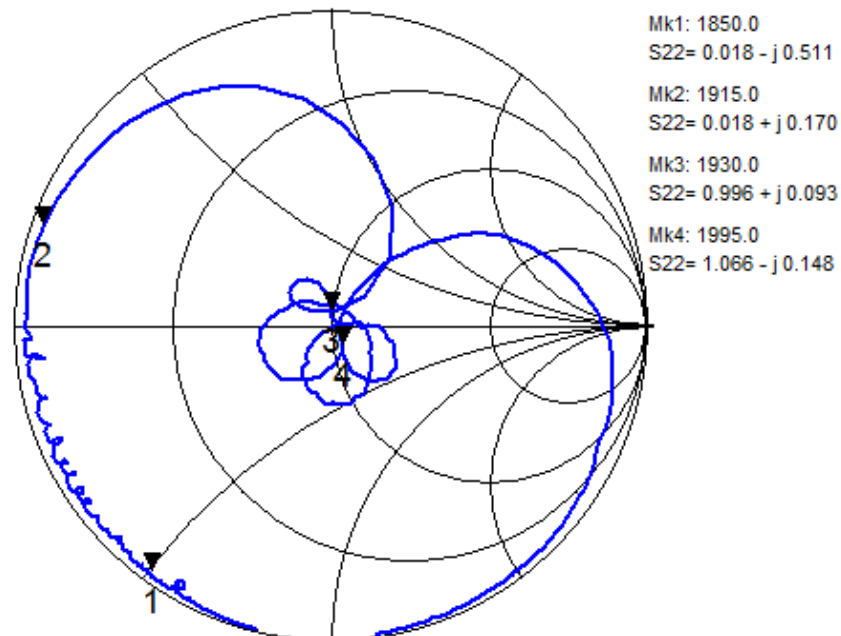
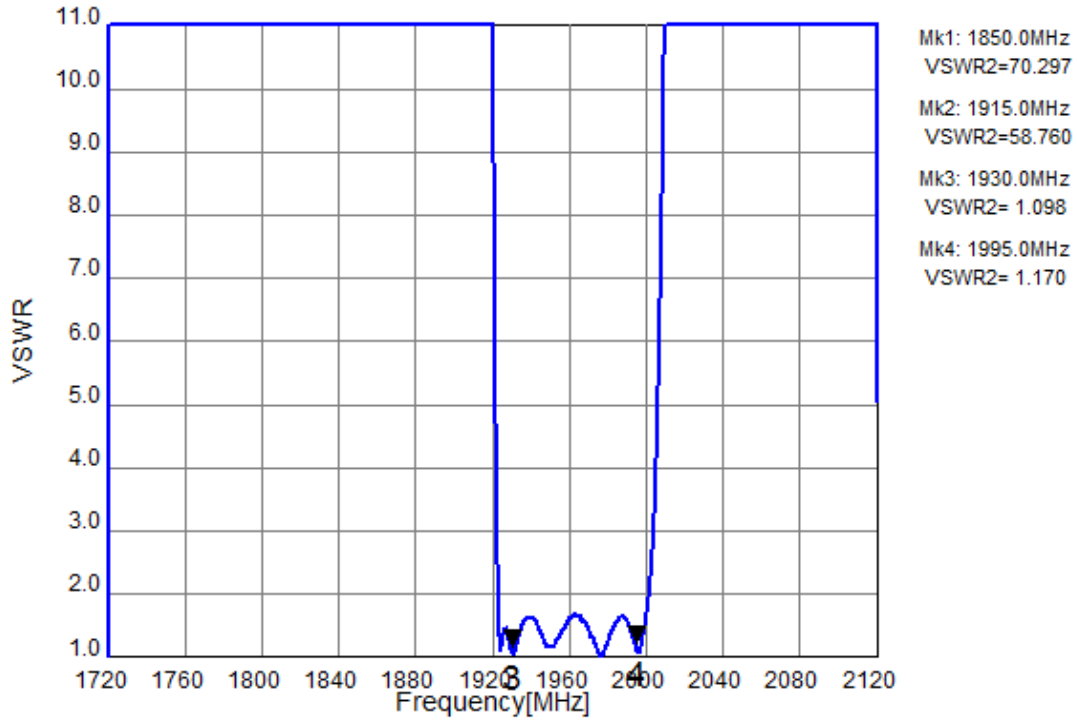
Tx Port



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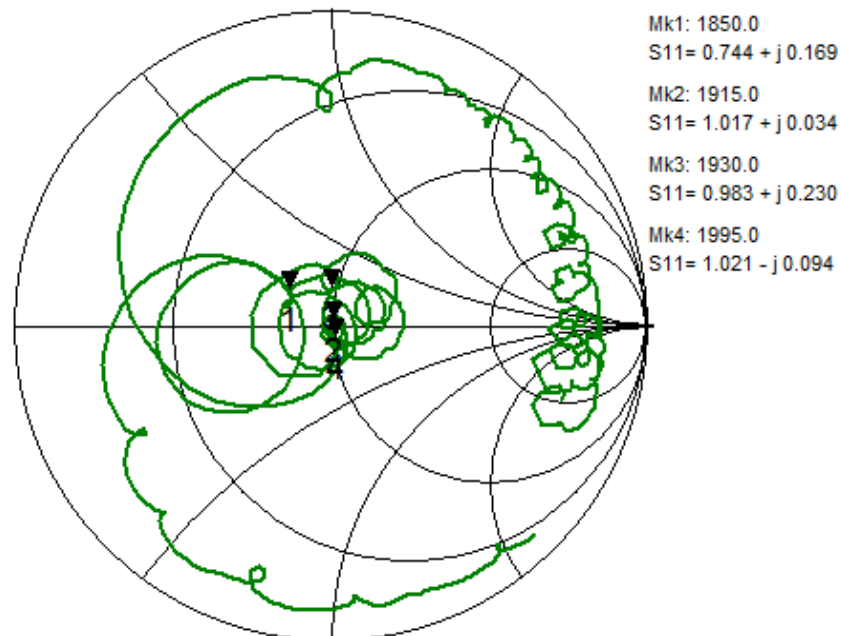
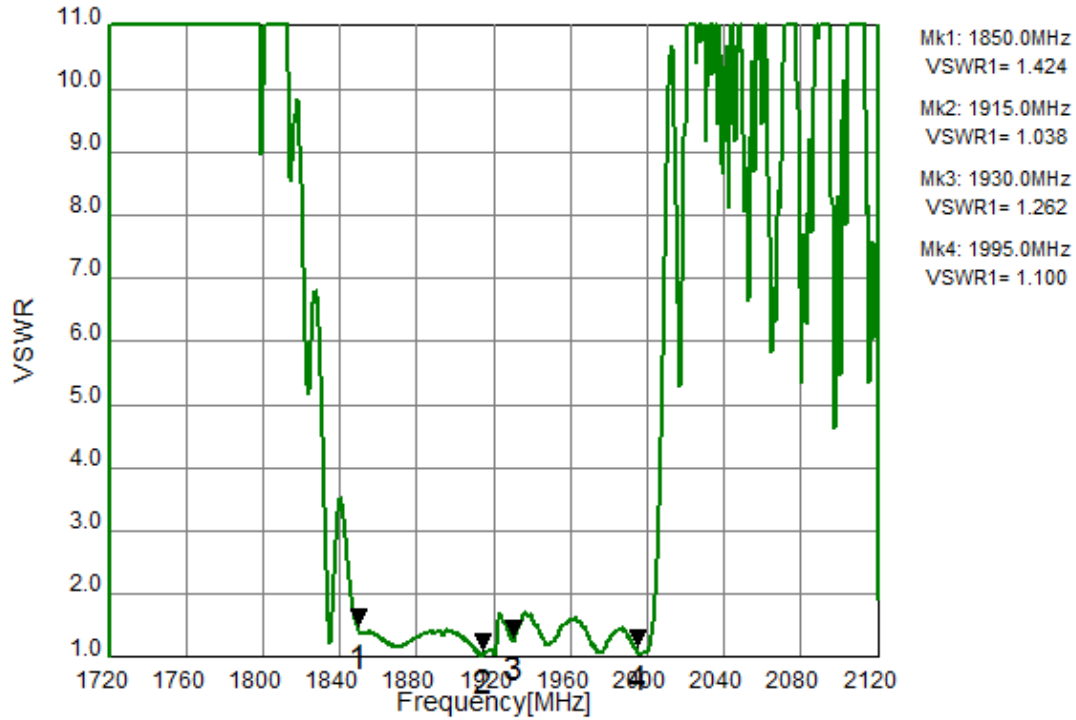
Rx Port



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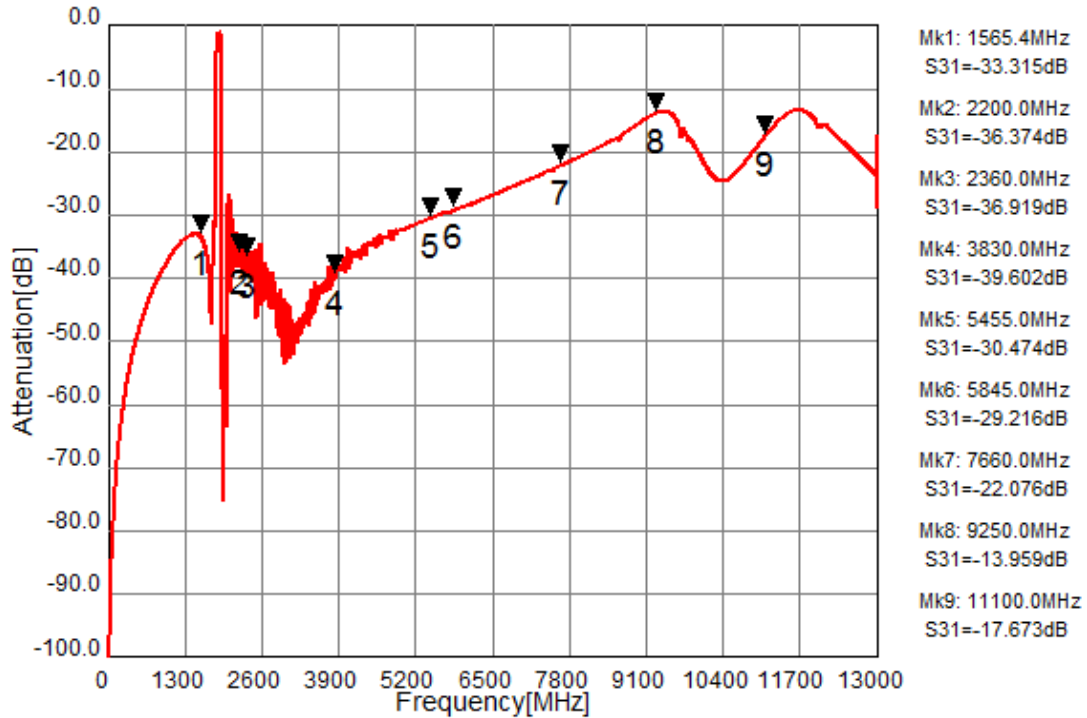
Ant Port



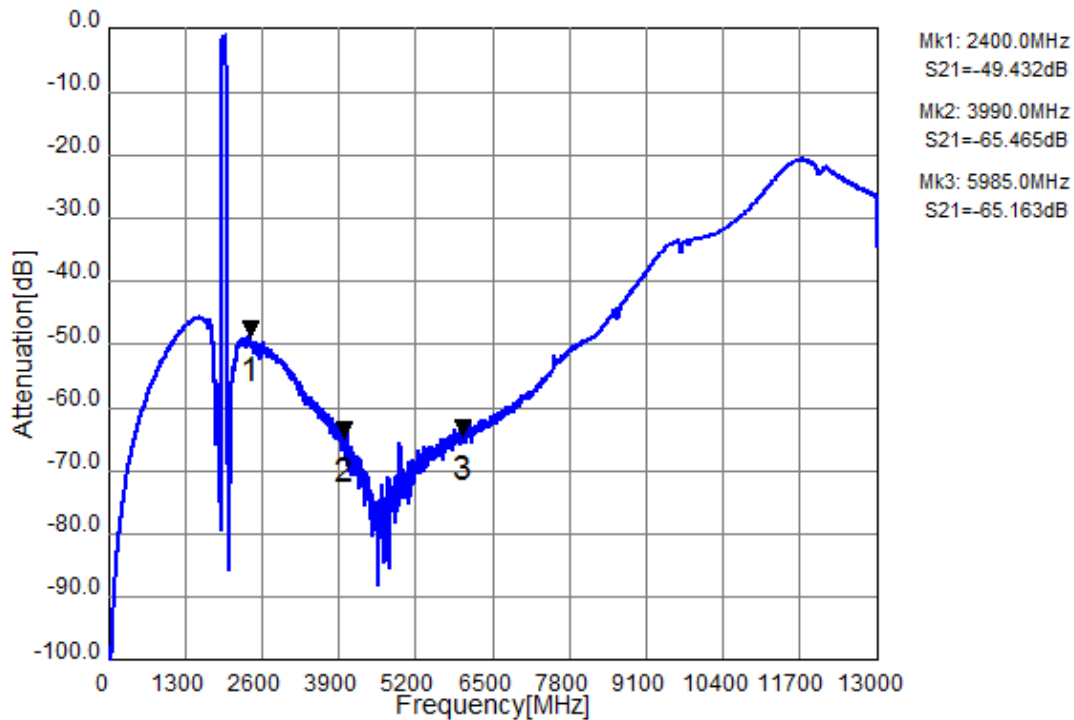
**SAW Duplexer 1883.0 / 1963.0MHz**  
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Tx to Ant (Wide span)



Ant to Rx (Wide span)

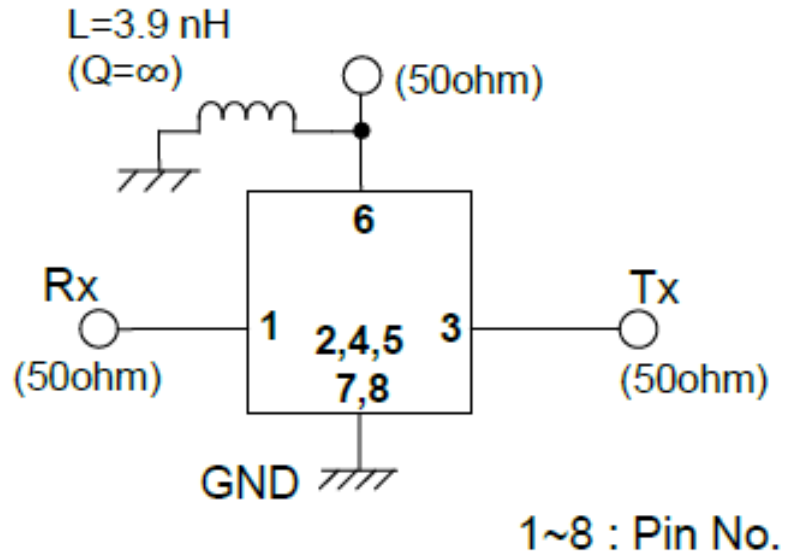




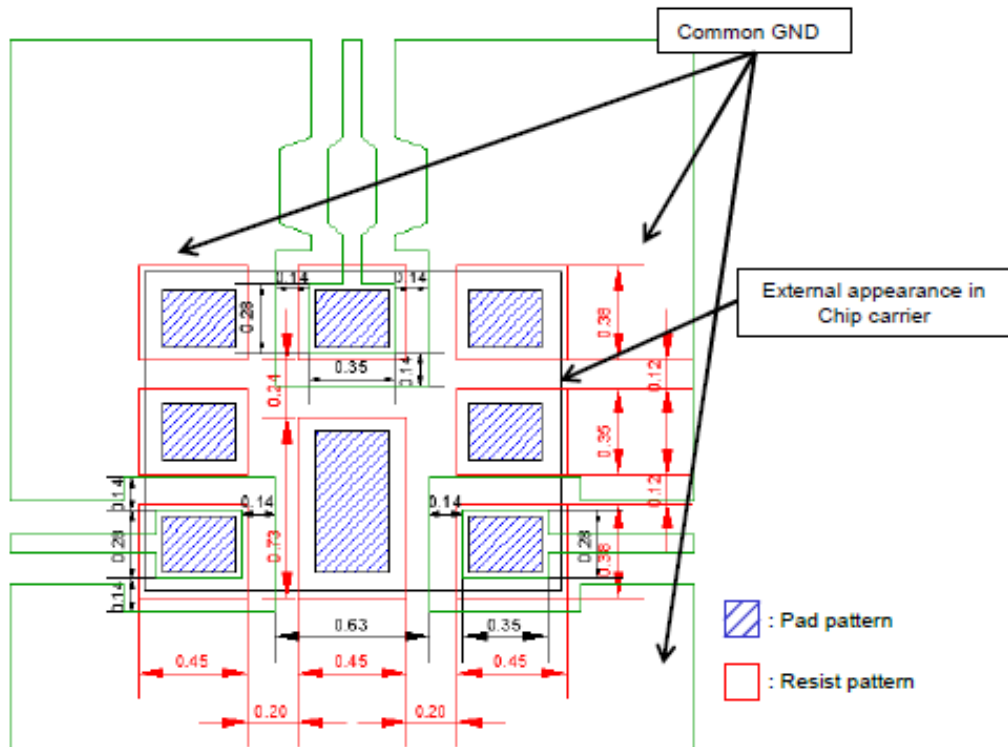
**SAW Duplexer 1883.0 / 1963.0MHz**  
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**D. MEASUREMENT CIRCUIT:**



**Recommended foot print pattern**

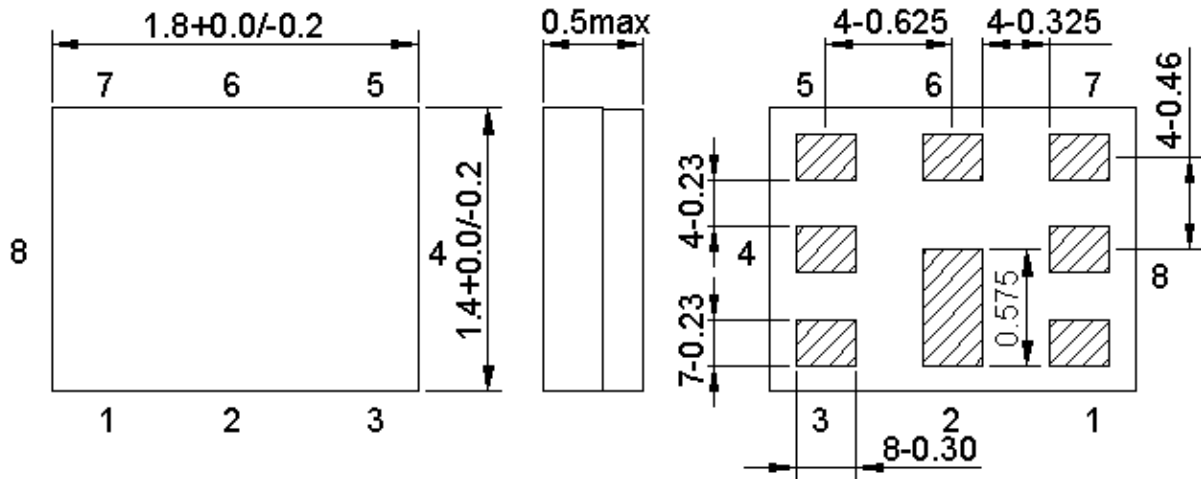


**Figure 2. Recommended foot print pattern**

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**E. OUTLINE DRAWING:** (Mass Production)



**Pin Configuration**

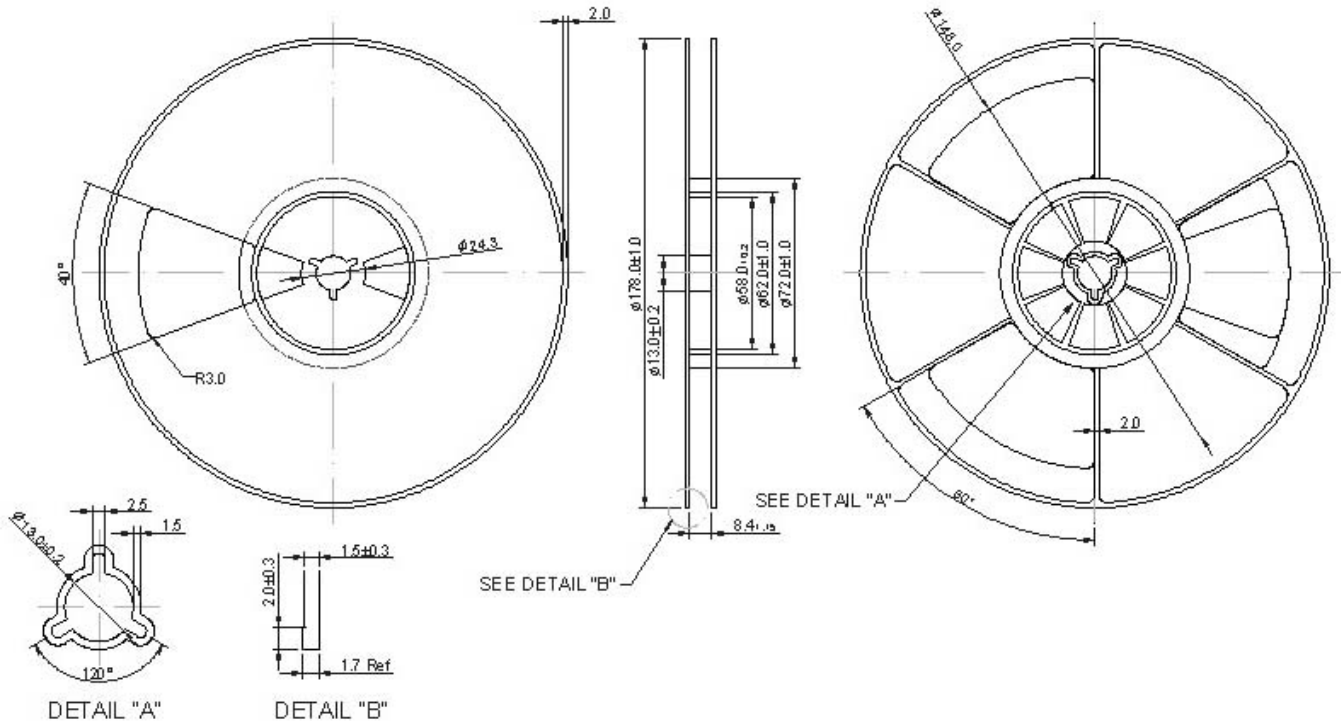
Pin No.	Pin name	Description
1	Rx	Receiver Pin
2	GND	Ground Pin
3	Tx	Transmitter Pin
4	GND	Ground Pin
5	GND	Ground Pin
6	ANT	Antenna Pin
7	GND	Ground Pin
8	GND	Ground Pin

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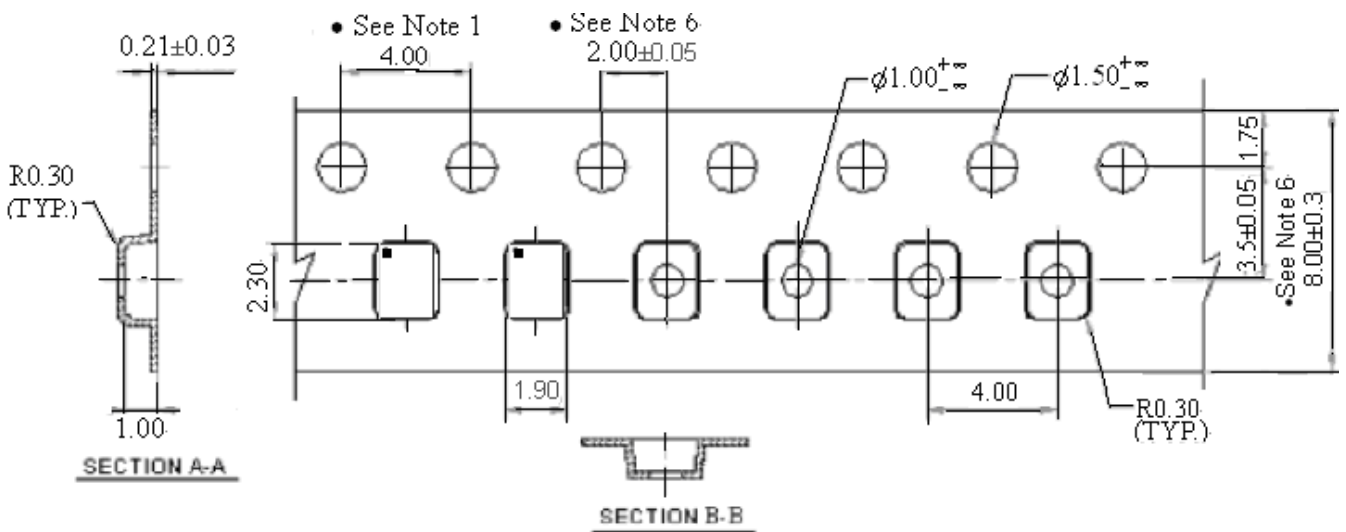
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**F. PACKING:**

1. Reel Dimension



2. Tape Dimension



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**G. RECOMMENDED REFLOW PROFILE:**

1. Preheating shall be fixed at 150 ~ 180°C for 60 ~ 90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50 ~ 80 seconds and at 260°C +0/-5°C peak (20 ~ 40 sec).
4. Time: 2 times.

