

SAW Duplexer 1880.0 / 1960.0MHz

Model: TF0121A

Part No: MP07402

Rev. No: 1

A. MAXIMUM RATING:

Electrostatic Sensitive Device (ESD)

1. Operating temperature range: -30°C to +85°C
2. Storage temperature range: -30°C to +85°C
3. Input power: 29dBm (Ta = +50°C, 50kh, CW)
4. Maximum DC Voltage: ±3V
5. Moisture Sensitivity Level: Level 1

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 // 3.9nHΩ (Single-ended)

Tx to ANT (f_{T0} = 1880MHz)

Parameters Description		Unit	Min	Typ	Max	Remarks
Insertion Loss	1850.48~1909.52MHz	dB(*1)	-	1.9	3.0	-20 to+85°C
	1852.4~1907.6MHz(*2)	dB(*1)	-	1.7	2.7	-20 to+85°C
	1851.25~1908.75MHz(*3)	dB(*1)	-	1.8	2.9	
Amplitude ripple	1850.48~1909.52MHz	dB	-	1.5	2.2	
VSWR	ANT	-	-	1.6	2.0	
	Tx	-	-	1.6	2.1	
Attenuation:						
1570~1580MHz		dB	35	38	-	
1930.48~1989.52MHz		dB	42	51	-	-20 to+85°C
1931.25~1988.75MHz(*3)		dB	41	51	-	
3700~3820MHz		dB	20	34	-	
5550~5730MHz		dB	15	27	-	

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ANT to Rx (f_{T0} = 1960MHz)

Parameters Description		Unit	Min	Typ	Max	Remarks
Insertion Loss	1930.48~1989.52MHz	dB(*1)		2.5	3.3	-20 to+85°C
	1932.4~1987.6MHz(*2)	dB(*1)		2.2	3.0	-20 to+85°C
	1931.25~1988.75MHz(*3)	dB(*1)		2.3	3.2	
Amplitude ripple		dB		1.5	2.3	
VSWR	ANT			1.6	2.1	
	Rx			1.9	2.2	
Attenuation:						
1850.48~1909.52MHz		dB	42	53	-	-20 to+85°C
1851.25~1908.75MHz(*3)		dB	43	53	-	

Tx to Rx

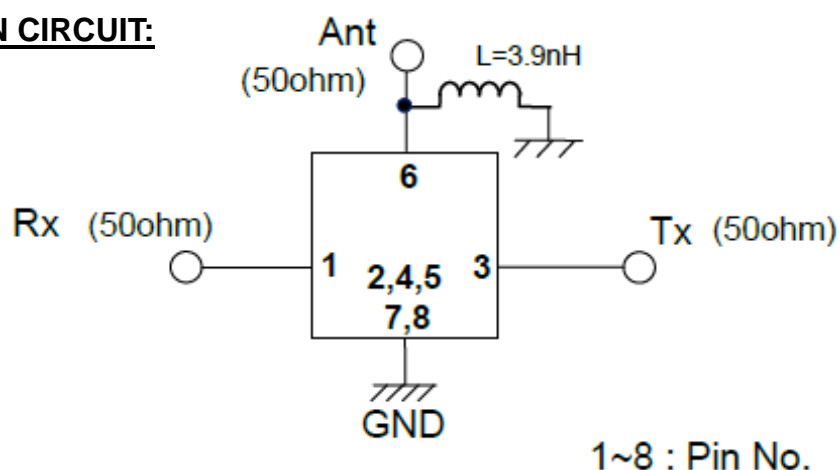
Isolation	1850.48~1909.52 MHz	dB	51	54	-	-20 to+85°C
	1851.25~1908.75 MHz(*3)	dB	51	54	-	
	1930.48~1989.52 MHz	dB	48	54	-	-20 to+25°C
		dB	51	54	-	+25 to+85°C
	1932.4~1987.6 MHz(*2)	dB	50	54	-	-20 to+25°C
		dB	51	54	-	+25 to+85°C
	1931.25~1988.75 MHz(*3)	dB	47	54	-	-30 to+25°C
		dB	51	54	-	+25 to+85°C

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

(*2) The integrated loss over any 3.84MHz (±1.92MHz) channel within the band.

(*3) The integrated loss over any 1.25MHz (±0.625MHz) channel within the band.

C. EVALUATION CIRCUIT:

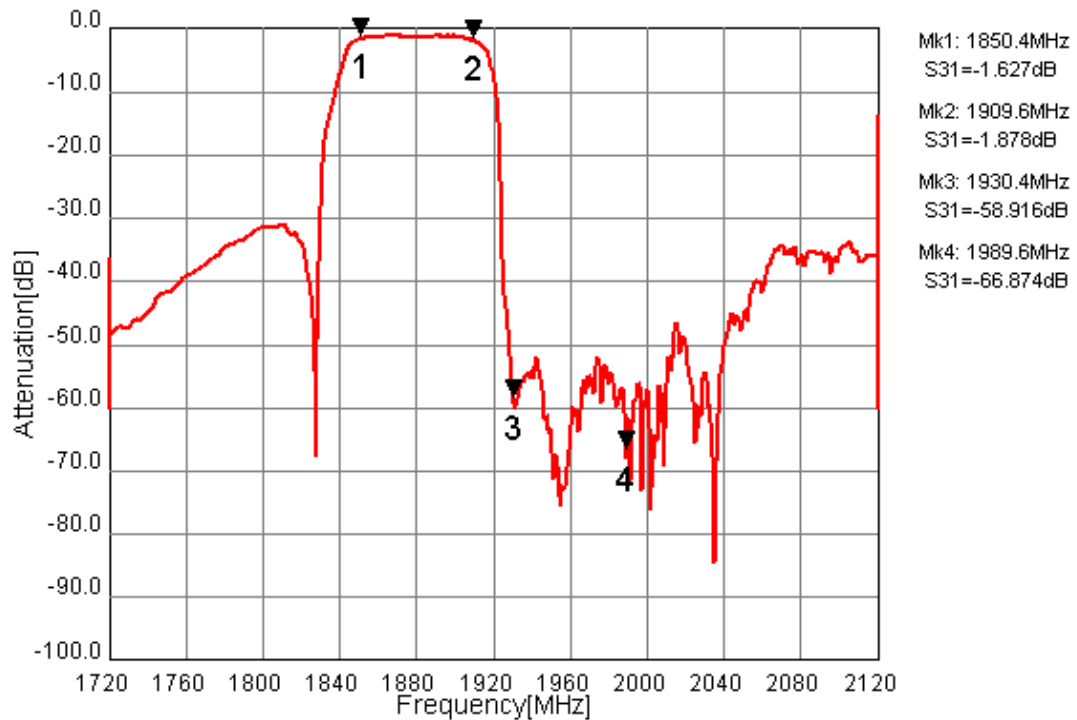


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D. FREQUENCY CHARACTERISTICS:

Tx to Ant



Ant to Rx

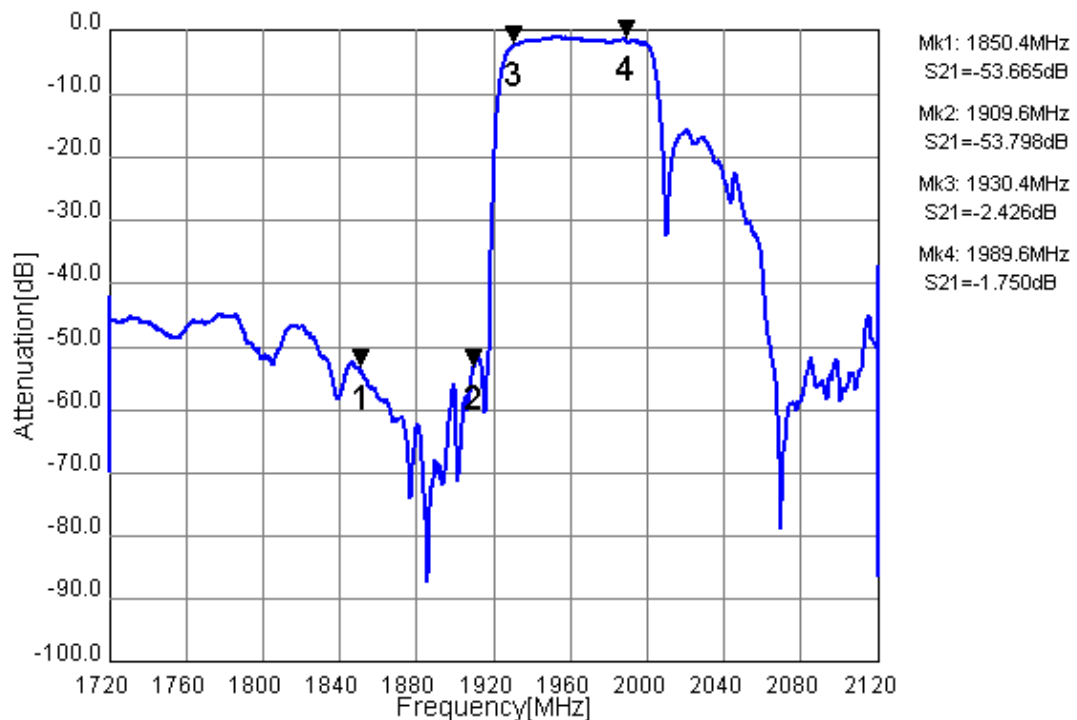
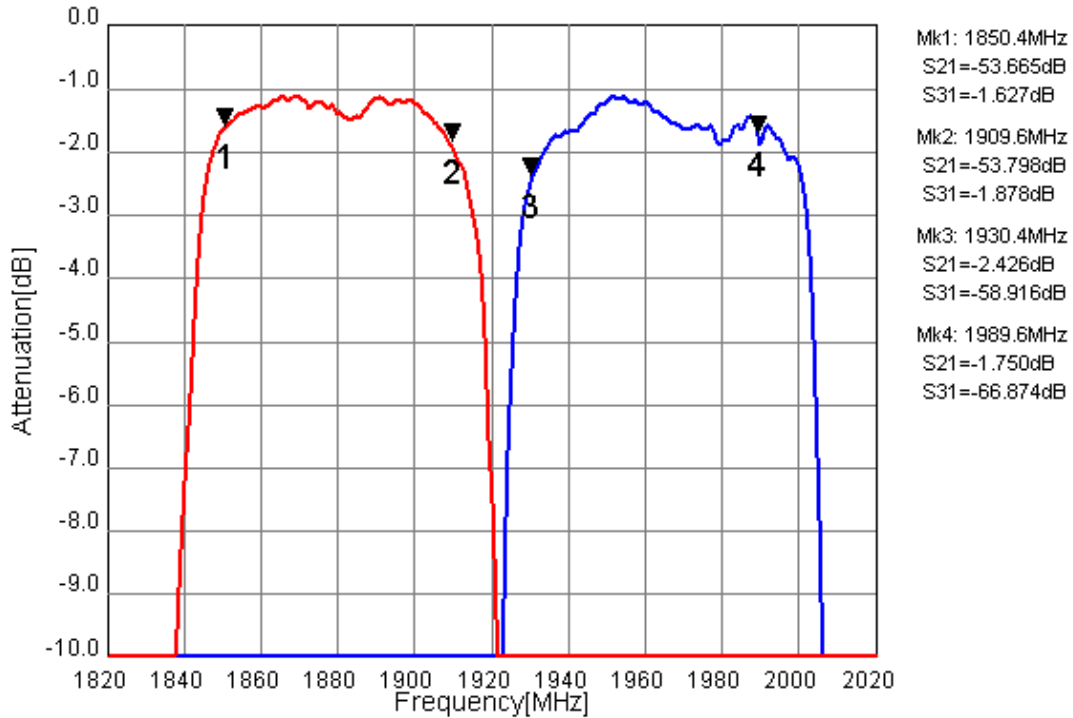


Figure 3 - 1. Electrical Characteristics. These data exclude loss that comes from the test board.

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Tx to Ant ,Ant to Rx



Tx to Rx Isolation

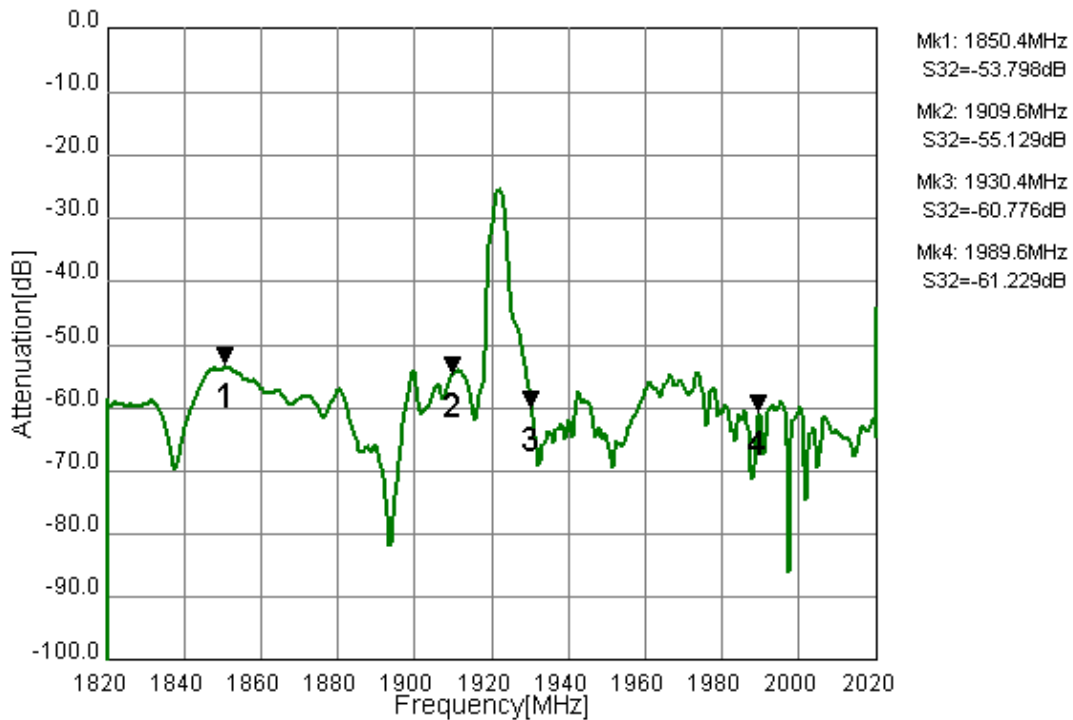


Figure 3 - 2. Electrical Characteristics. These data exclude loss that comes from the test board.

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Tx Port

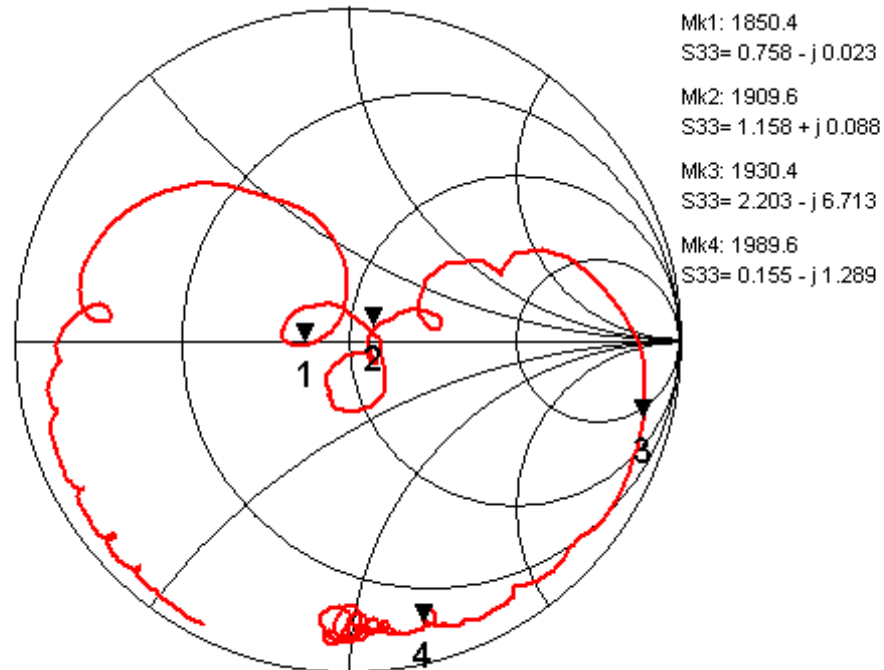
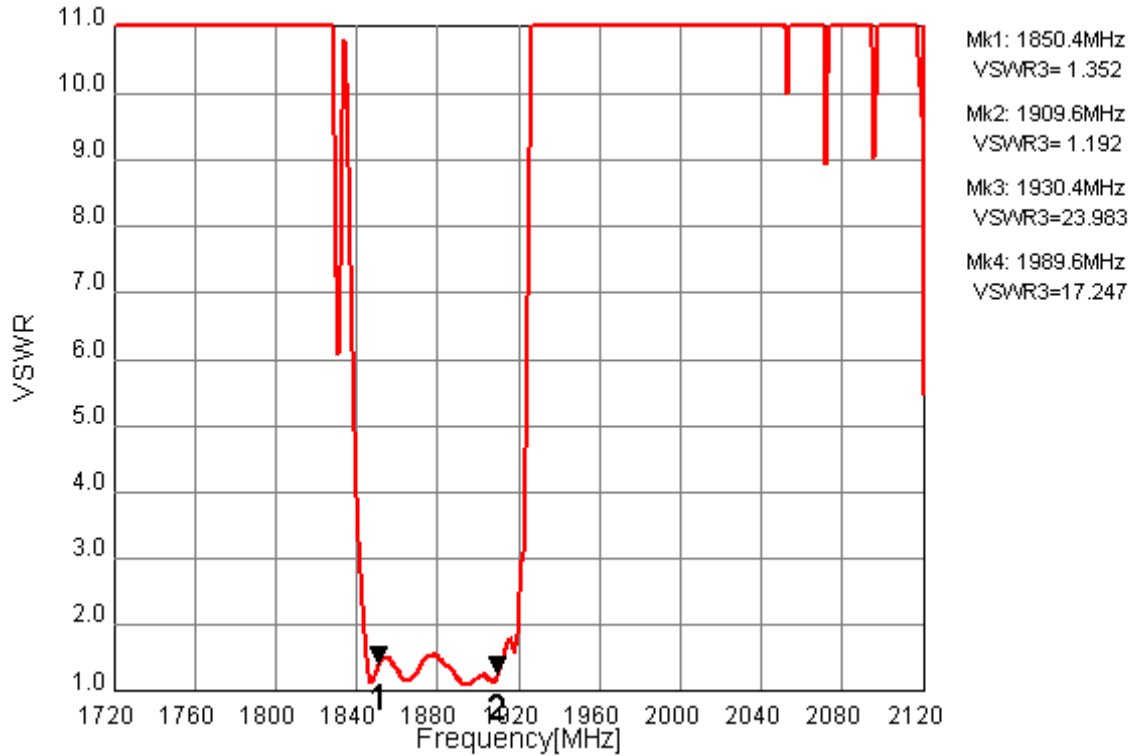


Figure 3 - 3. Electrical Characteristics.

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Rx Port

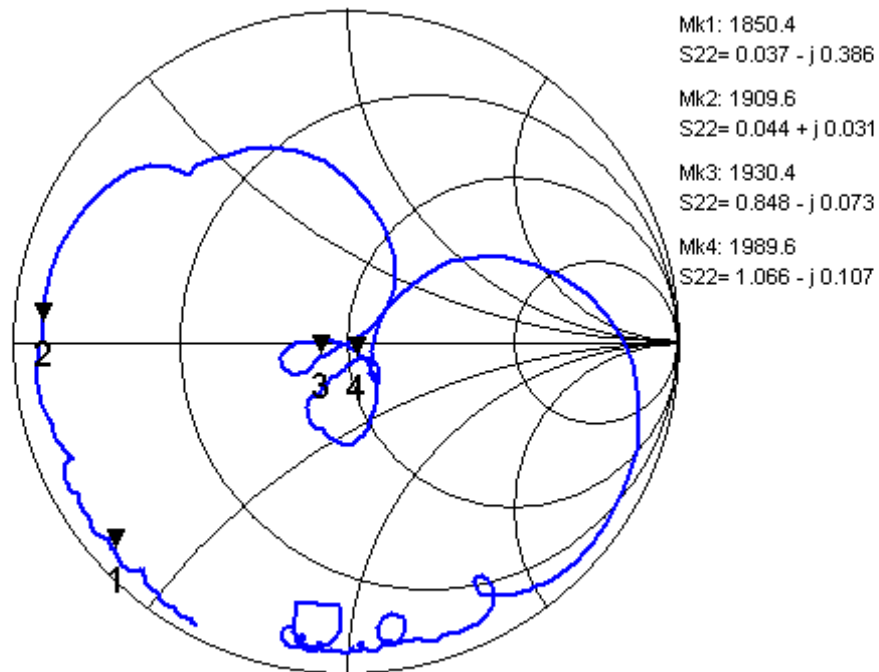
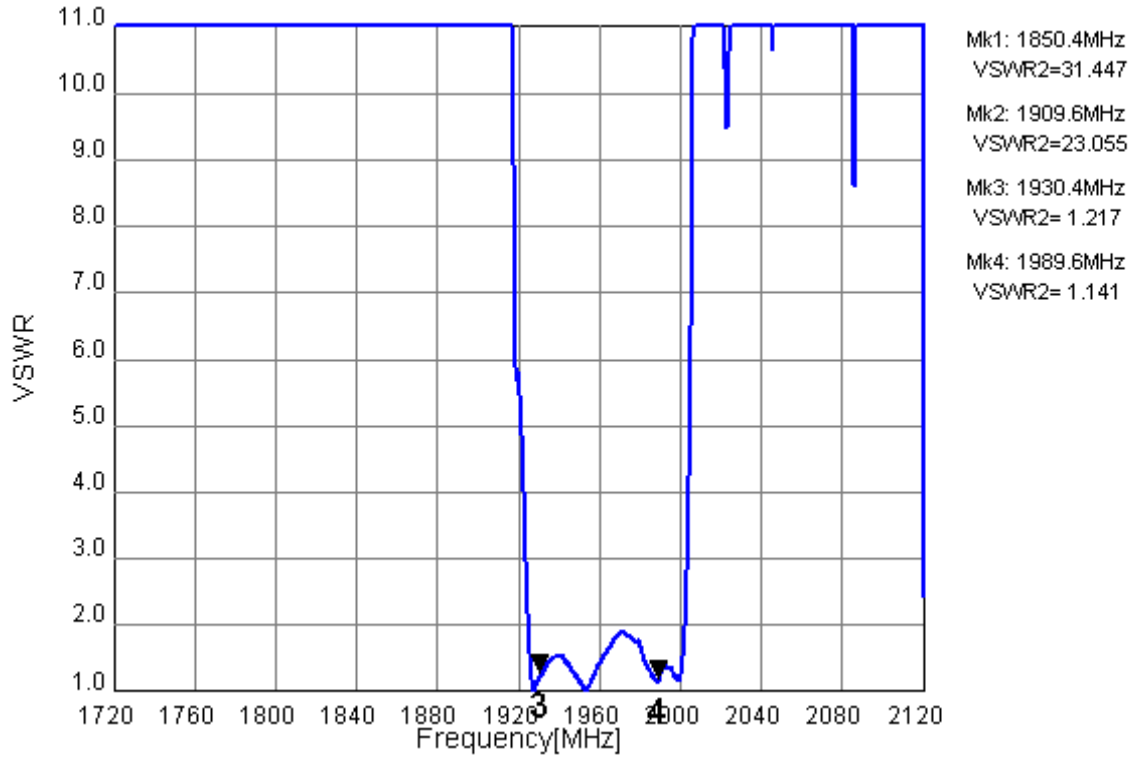


Figure 3 - 4. Electrical Characteristics.

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Ant Port

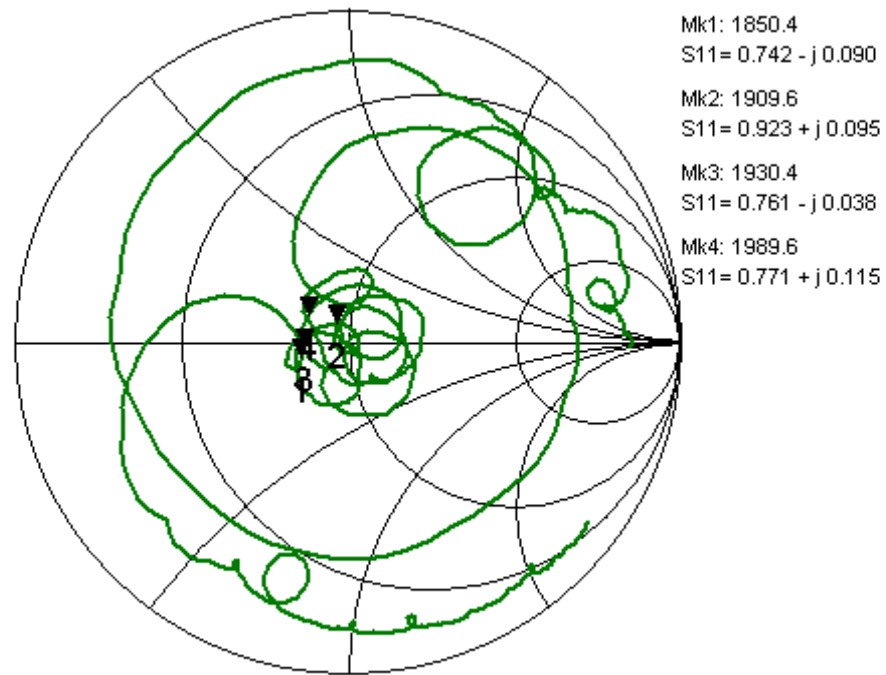
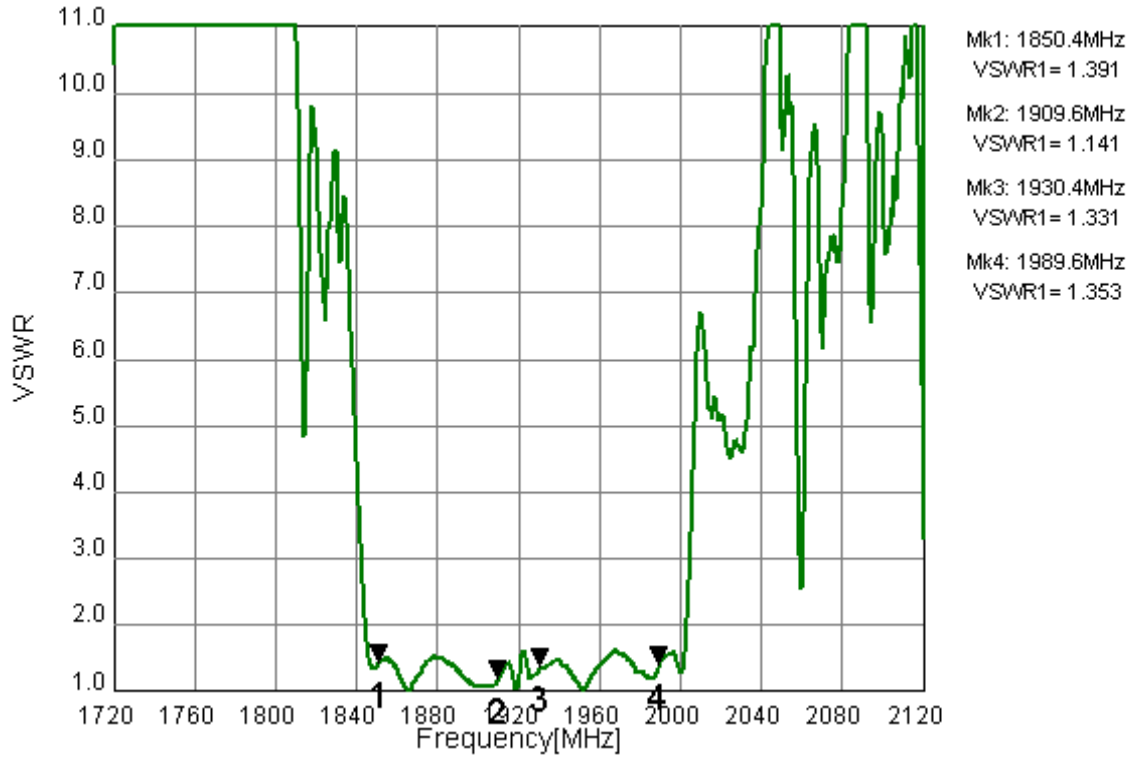
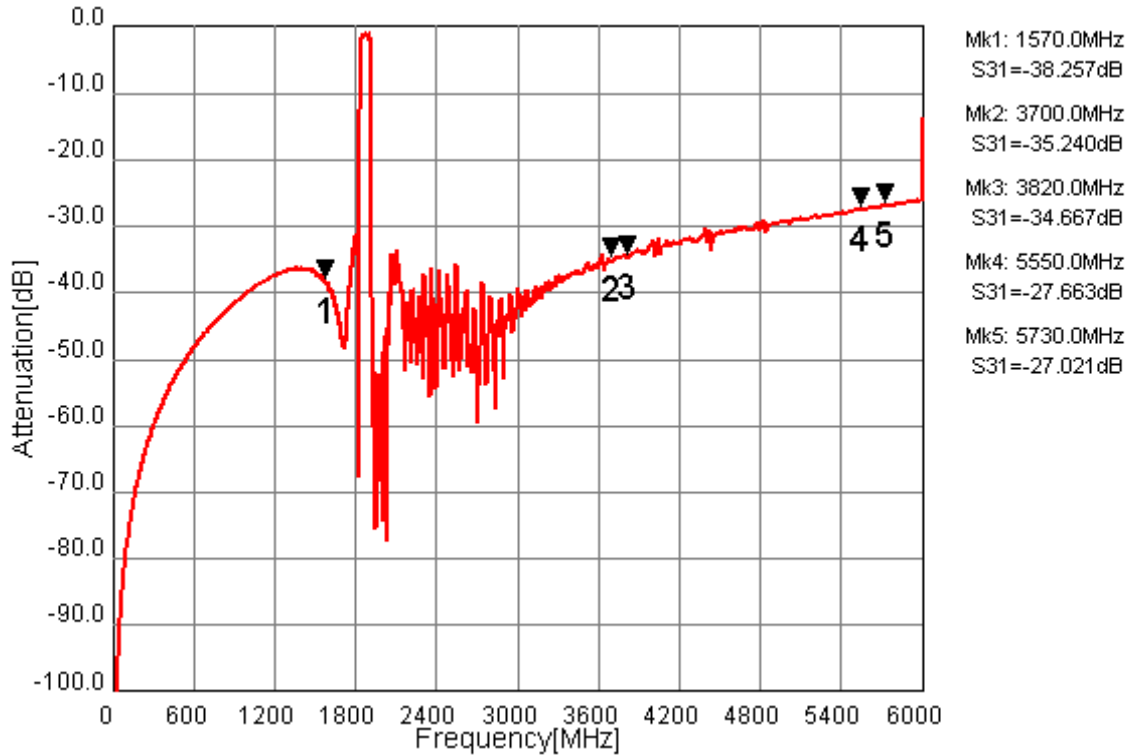


Figure 3 - 5. Electrical Characteristics.

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Tx to Ant (Wide span)



Ant to Rx (Wide span)

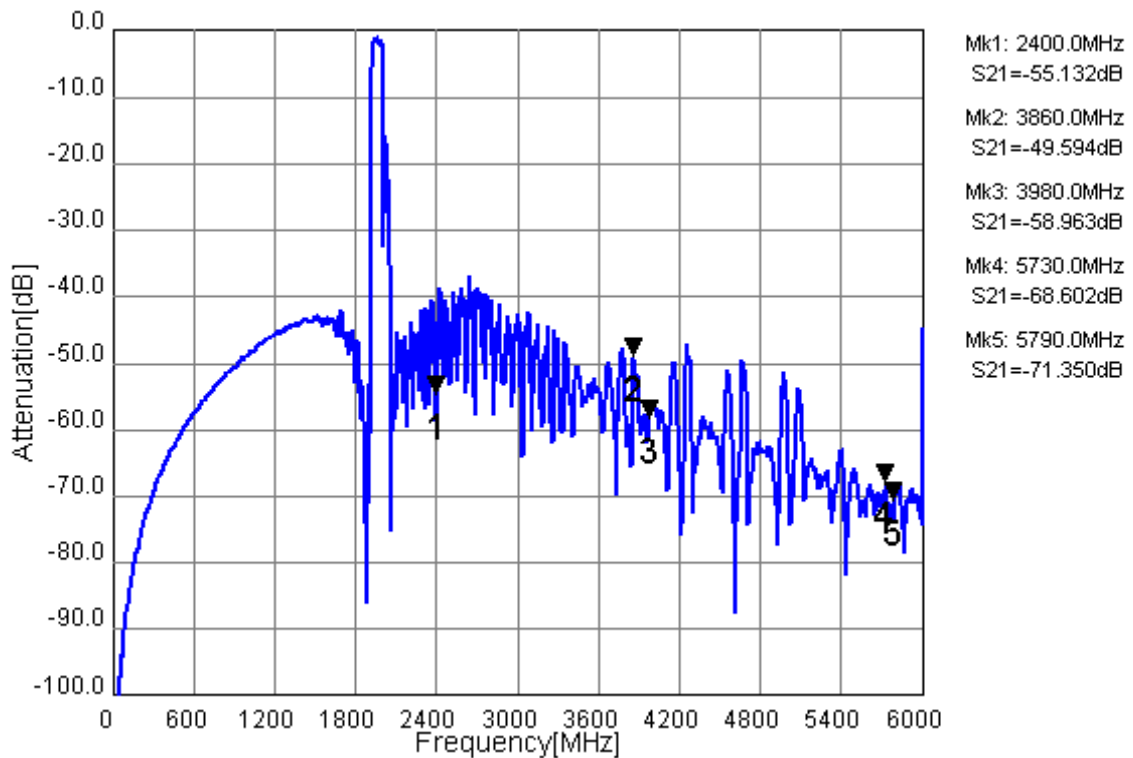
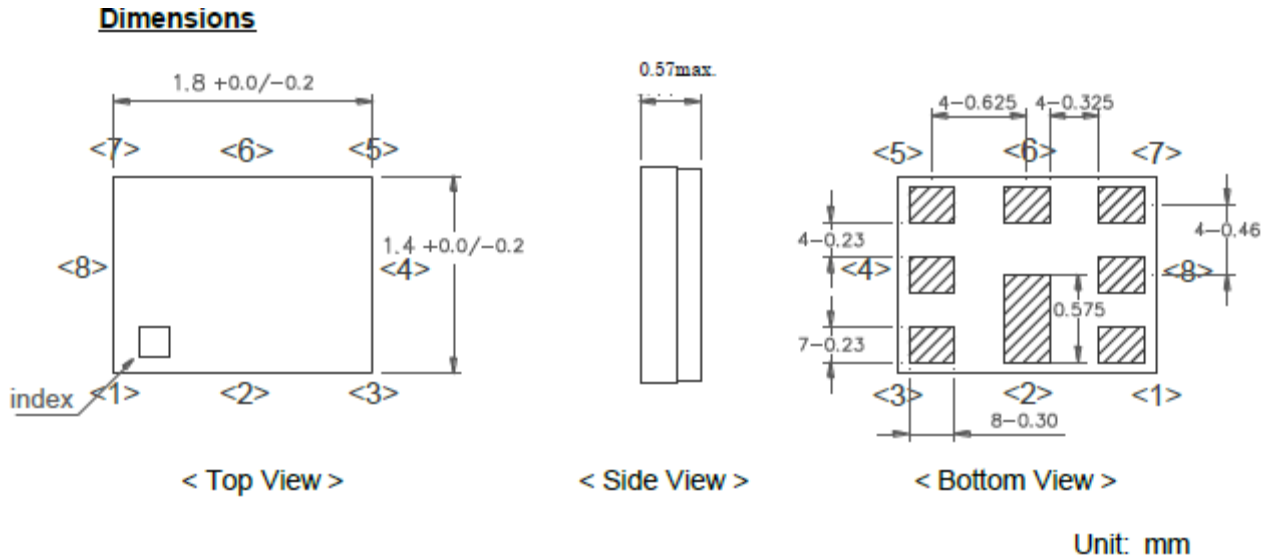


Figure 3 - 6. Electrical Characteristics.

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E.OUTLINE DRAWING:



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

Figure 1. Dimensions and Pin assignment

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F. FOOTPRINT:

Recommended foot print pattern

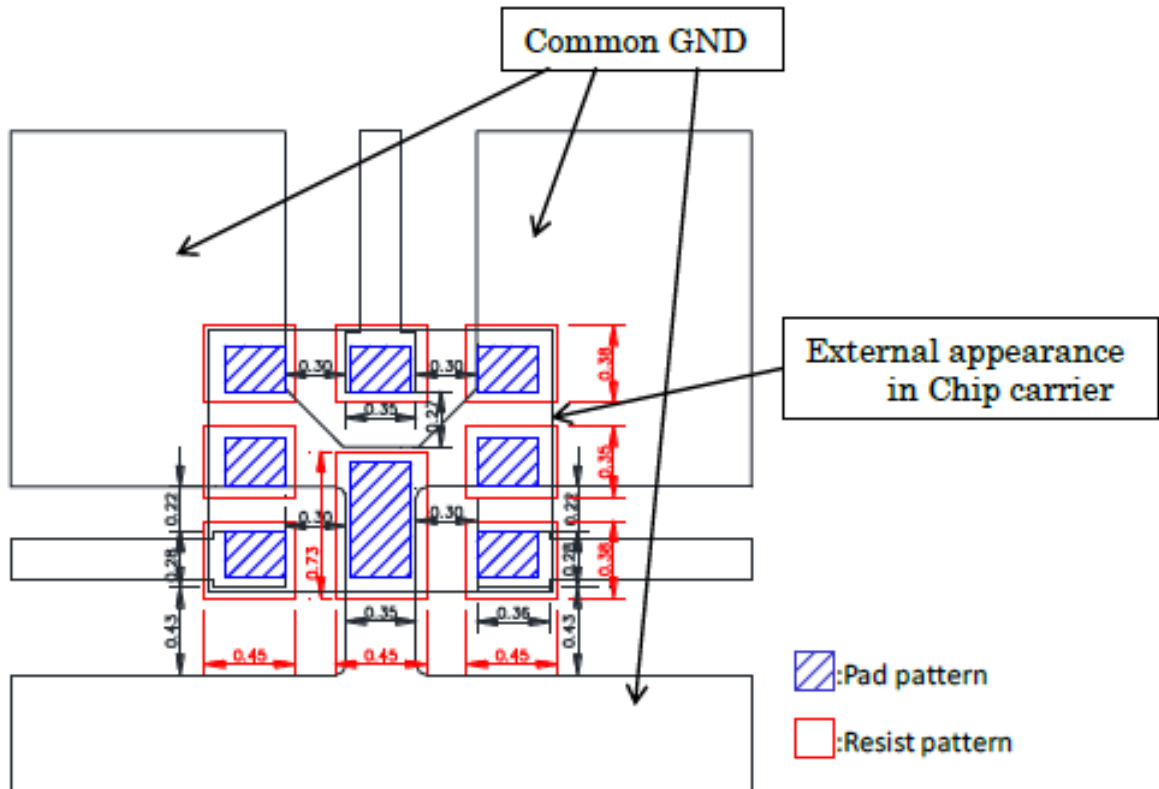


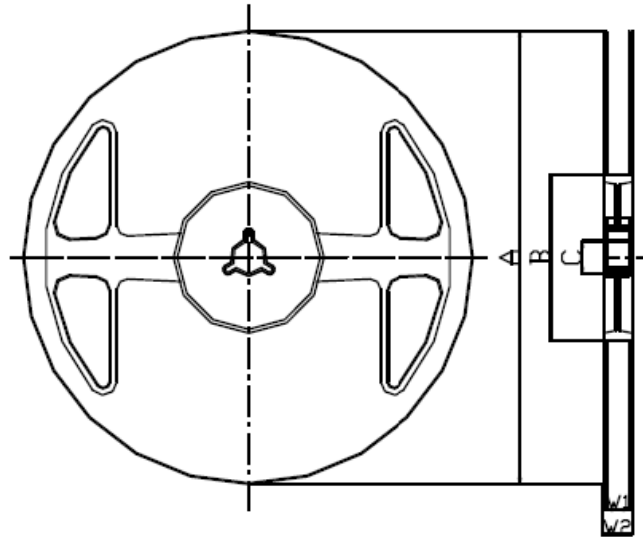
Figure 2. Recommended foot print pattern

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G. PACKING:

1. Reel Dimension



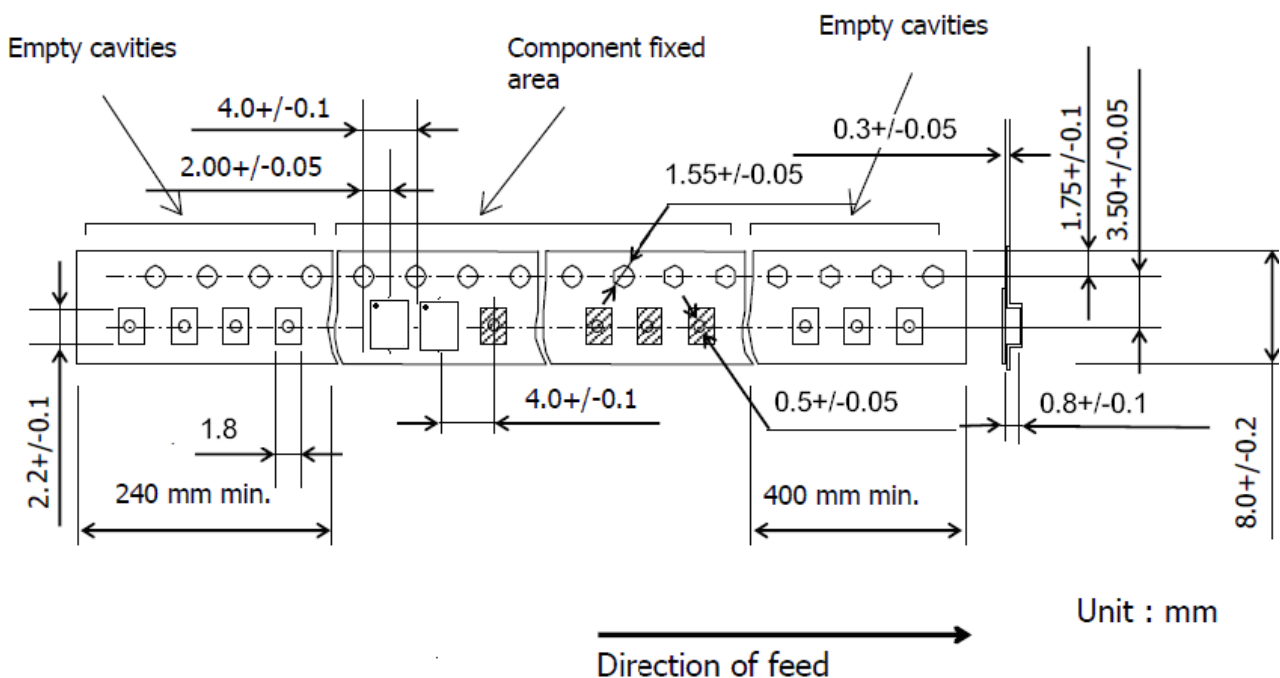
Materials of Reel

Material : Polystyrene + Carbon
 Characteristics : Conforms to EIAJ-ET-7200A
 Color : Black
 Surface resistance (reference value) : $10^9 \Omega/\text{sq Max.}$

Unit : mm

Code	Quantity	A	B	C	W1	W2
Z	3,000 pcs	$\phi 180.0 +0.0/-1.5$	$\phi 66.0 +/-0.5$	$\phi 13.0 +/-0.2$	$9.0 +1.0/-0.0$	$11.4 +/-1.0$

2. Tape Dimension



Unit : mm

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H. 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 245 ~ 260°C peak (min. 10 sec).
4. Time: 2 times.

