

SAW Duplexer 2535.0 / 2655.0MHz

Model: TF0124A

Part No: MP07405

Rev. No: 1

A. MAXIMUM RATING:

Electrostatic Sensitive Device (ESD)

1. Operating temperature range: -20°C to +85°C
2. Storage temperature range: -20°C to +85°C
3. Input power: 29dBm (Ta = +50°C, 5k hours, CW)
4. Maximum DC Voltage: ±3 V
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//3.2nH Ω (Single-ended)

Tx to ANT (f_{T0}=2535MHz)

Parameters Description		Unit	Min	Typ	Max	Remarks
Insertion Loss	2500~2570MHz	dB(*1)	-	2.3	2.9	2500~2510MHz
		dB(*1)		1.7	2.7	2510~2570MHz
Ripple	2500~2570MHz	dB	-	1.2	2.3	
Ripple(any 5MHz)	2500~2570MHz	dB		0.5	1.0	
VSWR	ANT	2500~2570MHz	-	-	1.6	2.4
	Tx		-	-	1.8	2.5
Attenuation:						
10~1565.42MHz		dB	35	40	-	
832~862MHz		dB	45	51	-	
1226~1250MHz		dB	38	44	-	
1559~1563MHz		dB	35	40	-	
1565.42~1573.374MHz		dB	35	40	-	
1573.374~1577.466MHz		dB	35	40		
1577.466~1585.42MHz		dB	35	40		
1597.5515~1605.886MHz		dB	35	40		
1605.886~1680MHz		dB	35	39		
1710~1785MHz		dB	33	38		
1805~1880MHz		dB	33	38		
1710~1755MHz		dB	33	38		
1900~1920MHz		dB	32	37		
2010~2025MHz		dB	32	37		
2110~2170MHz		dB	32	36		

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2402~2470MHz	dB(*2)	40	47		
2440~2460MHz	dB(*2)	40	44		
2474MHz	dB	28	43		
2402~2467MHz	dB(*3)	35	45		
2474~2500MHz	dB	1	2.3		
2620~2690MHz	dB	45	52		
4900~5950MHz	dB	35	50		
5000~5140MHz	dB	40	51		
5100~5280MHz	dB	40	52		
7500~7710MHz	dB	27	44		
2401~2423MHz	dB(*2)	45	51		Ch1
2406~2428MHz	dB(*2)	48	53		Ch2
2411~2433MHz	dB(*2)	47	53		Ch3
2416~2438MHz	dB(*2)	45	51		Ch4
2421~2443MHz	dB(*2)	41	49		Ch5
2426~2448MHz	dB(*2)	41	47		Ch6
2431~2453MHz	dB(*2)	40	46		Ch7
2436~2458MHz	dB(*2)	40	45		Ch8
2441~2463MHz	dB(*2)	40	44		Ch9
2446~2468MHz	dB(*2)	40	44		Ch10
2451~2473MHz	dB(*2)	40	45		Ch11
2456~2478MHz	dB(*2)	33	46		Ch12
2461~2483MHz	dB(*2)	23	40		Ch13

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ANT to Rx (f_{T0}=2655 MHz)

Parameters Description		Unit	Min	Typ	Max	Remarks
Insertion Loss	2620~2690MHz	dB(*1)	-	2.2	2.6	
VSWR	ANT	-		1.7	2.3	
	Rx			1.8	2.3	
Attenuation:						
1~2500MHz		dB	40	43	-	
45MHz		dB	60	99	-	
718~748MHz		dB	51	58		
814~849MHz		dB	50	56		
832~862MHz		dB	50	56		
880~915MHz		dB	50	55		
1710~1785MHz		dB	40	45		
1920~1980MHz		dB	40	44		
2400~2500MHz		dB	40	48		
2402~2470MHz		dB	44	48		
2500~2570MHz		dB	45	57		
2570~2600MHz		dB	1	8		
2775~2790MHz		dB	37	64		
2775~6000MHz		dB	40	47		
4900~5300MHz		dB	47	59		
5300~5950MHz		dB	40	58		
7620~7830MHz		dB	40	48		
7860~8070MHz		dB	40	47		

Tx to Rx

Isolation	2500~2570MHz	dB	55	58	-	
	2620~2690MHz	dB	52	57	-	
	1574~1577MHz	dB	50	70		
	5000~5140MHz	dB	32	57		
	7500~7710MHz	dB	25	48		

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

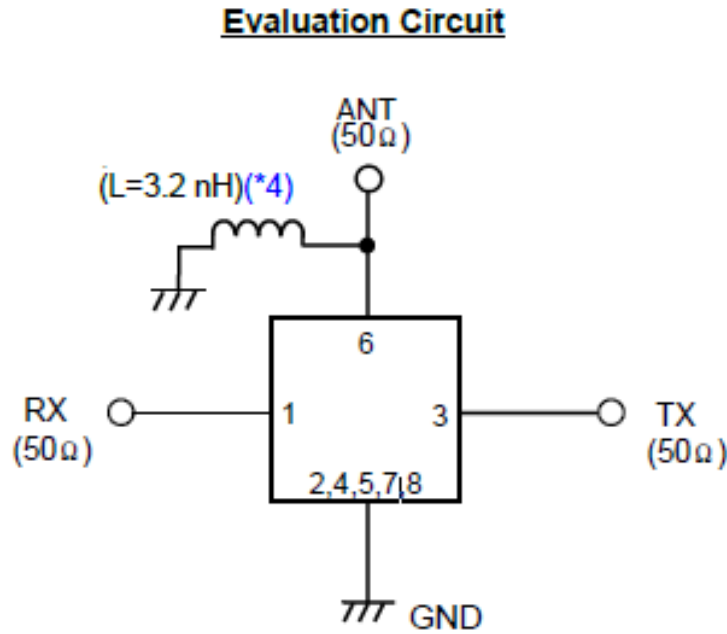
(*2) Integrated attenuation per 22MHz.

(*3) Integrated attenuation per 18MHz.

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C. EVALUATION CIRCUIT:



D. FOOTPRINT:

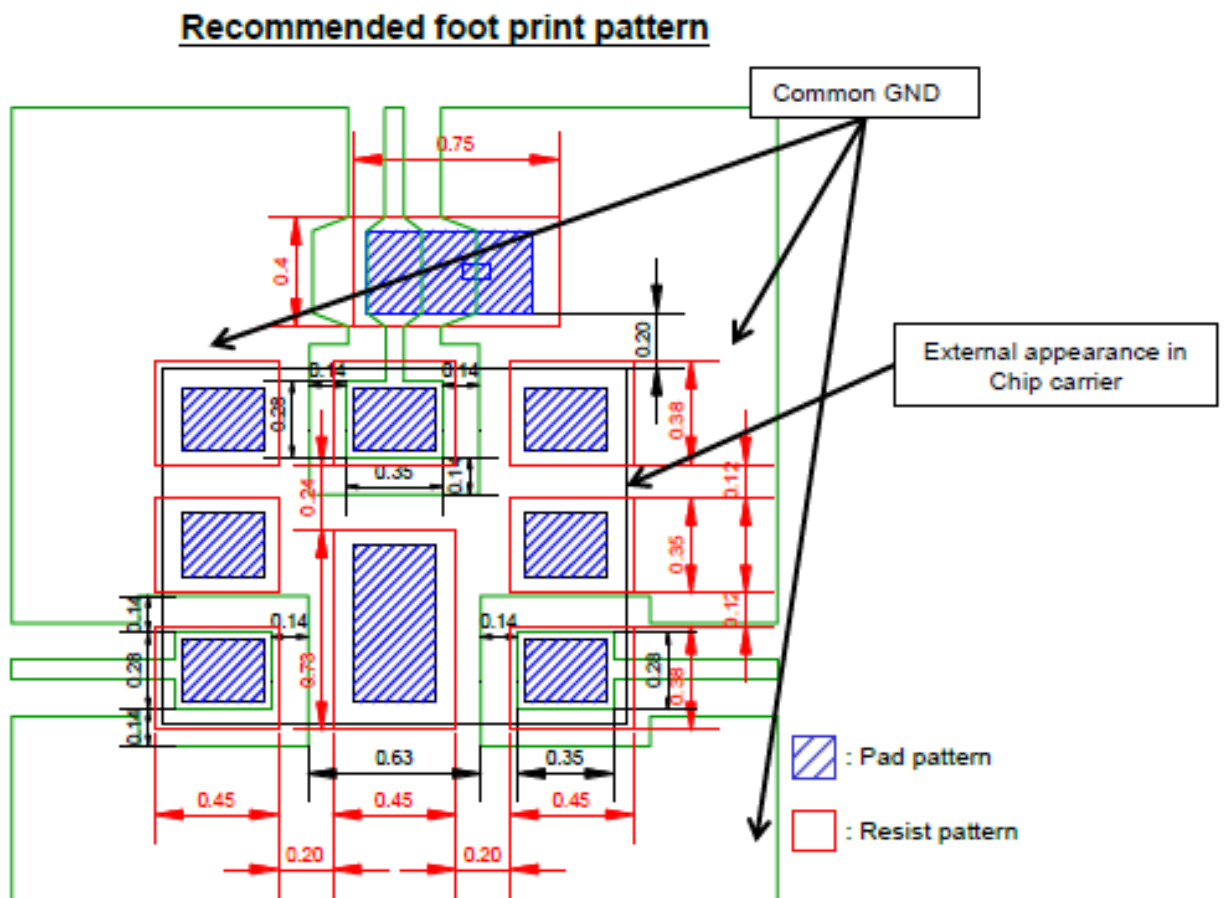


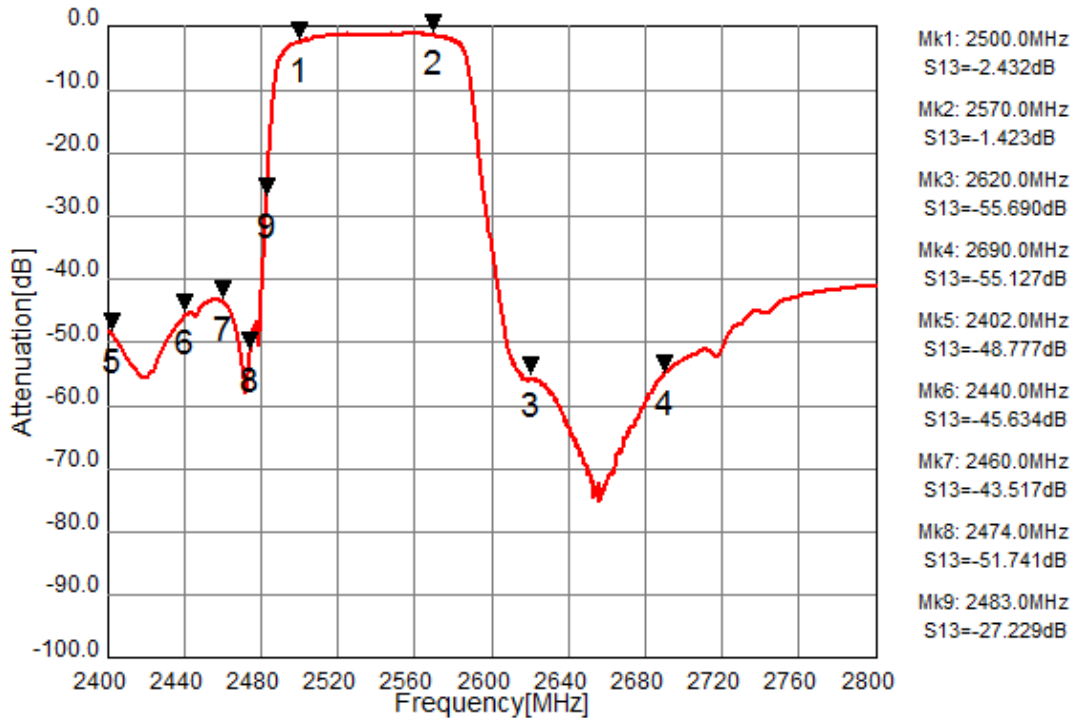
Figure 2. Evaluation Circuit and Recommended foot print pattern

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E. FREQUENCY CHARACTERISTICS:

Tx to Ant



Ant to Rx

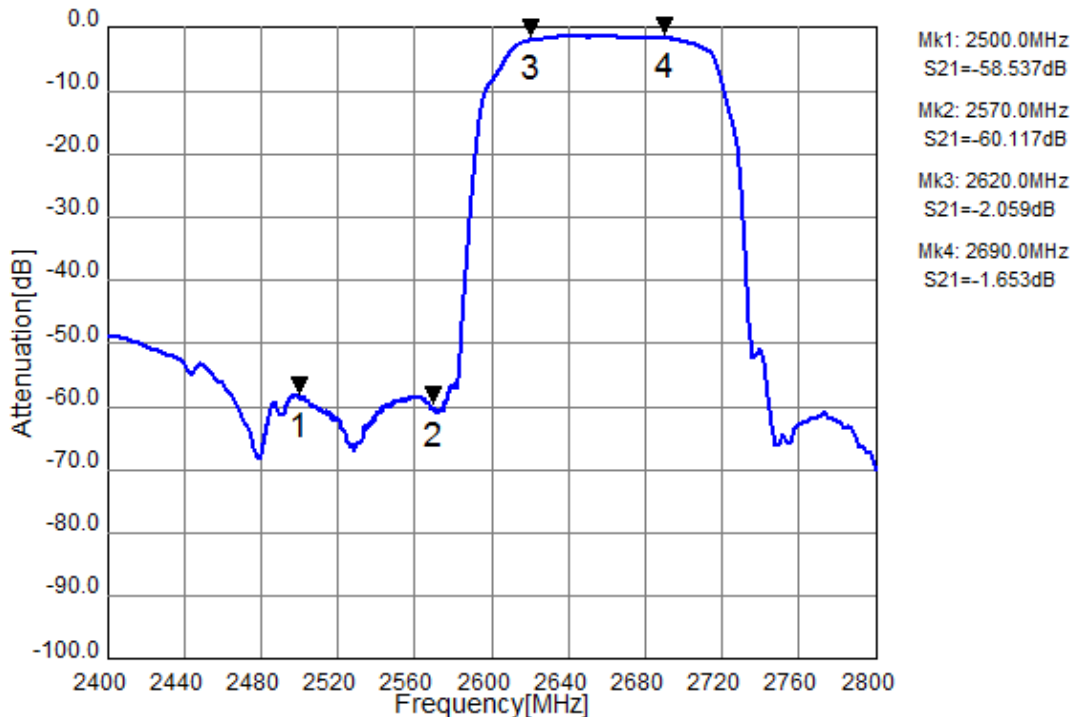
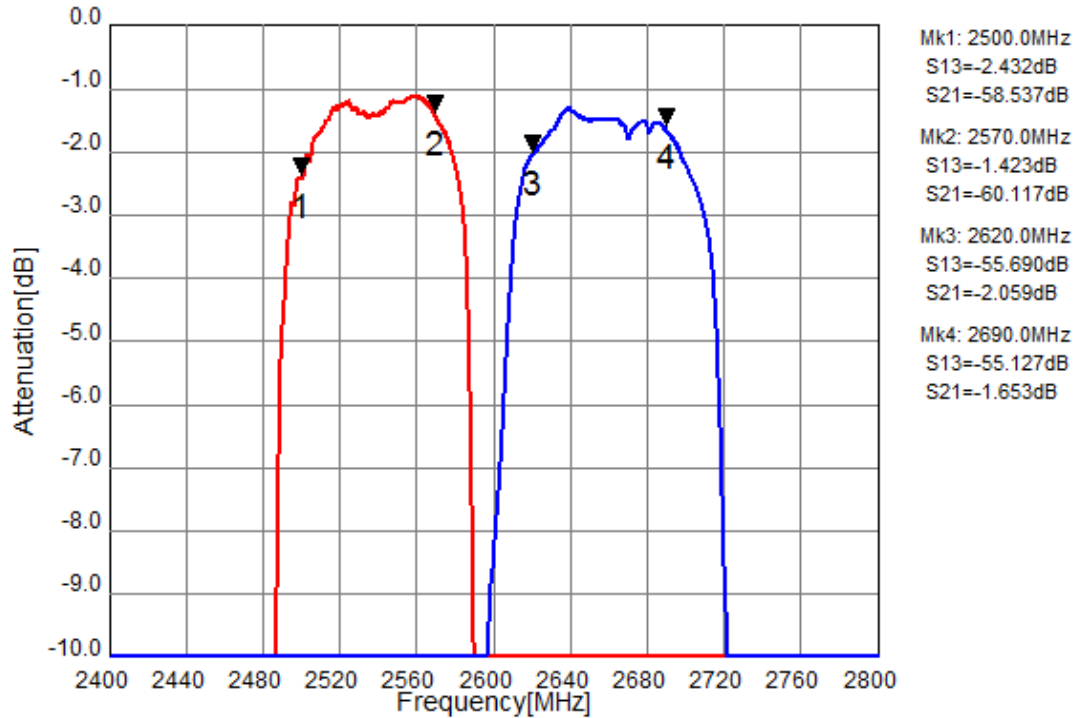


Figure 3 - 1. Electrical Characteristics. These data exclude loss that comes from the test board.

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Tx to Ant ,Ant to Rx



Tx to Rx Isolation

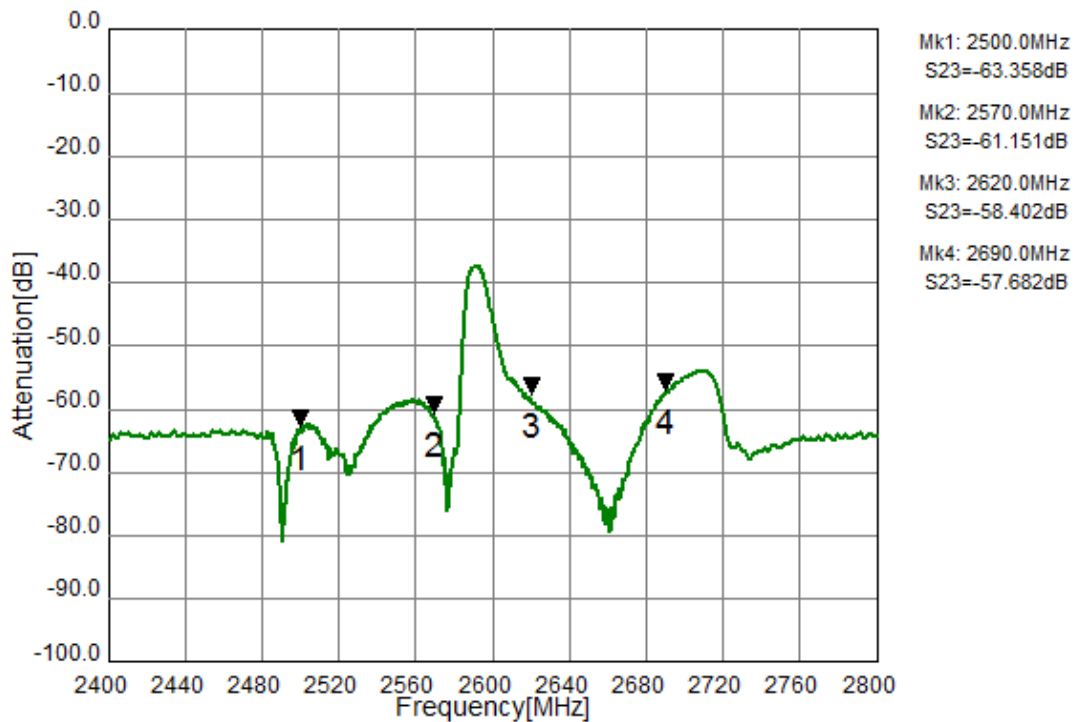


Figure 3 - 2. Electrical Characteristics. These data exclude loss that comes from the test board.

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Tx Port

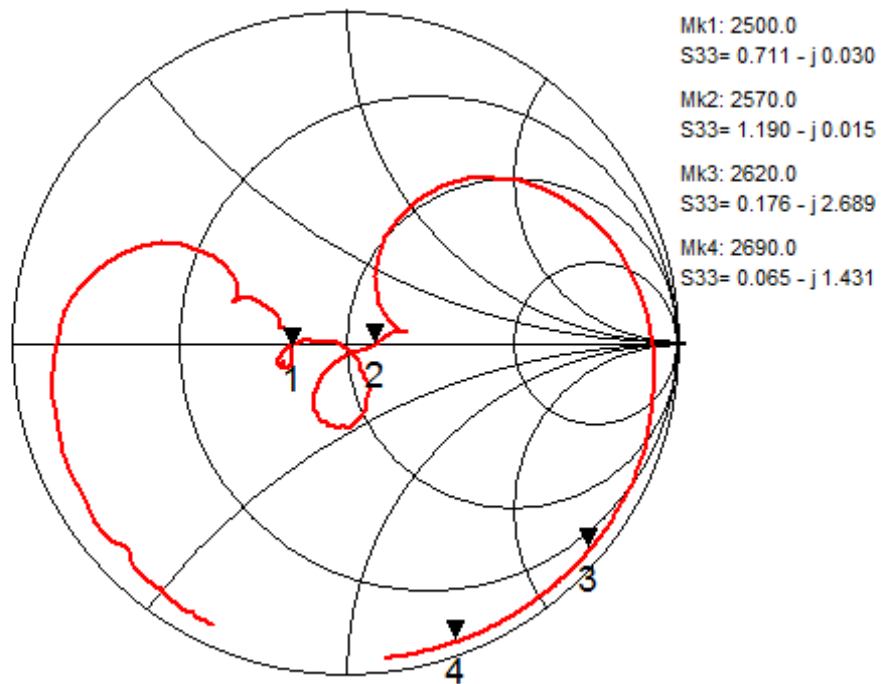
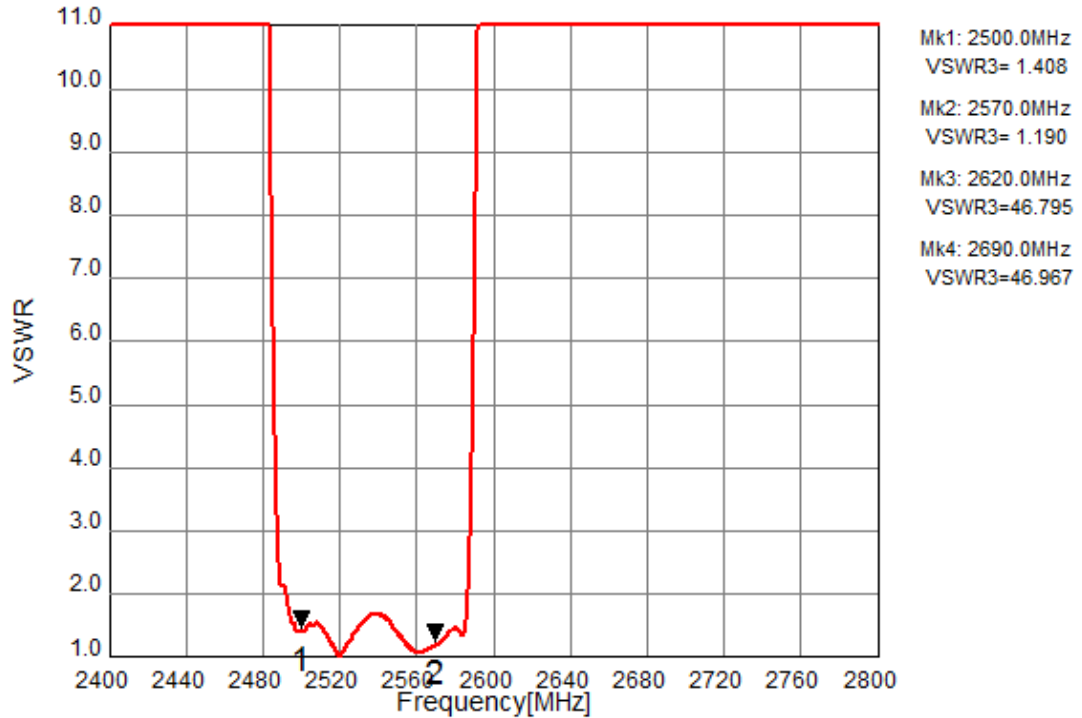


Figure 3 - 3. Electrical Characteristics of Simulation.

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Rx Port

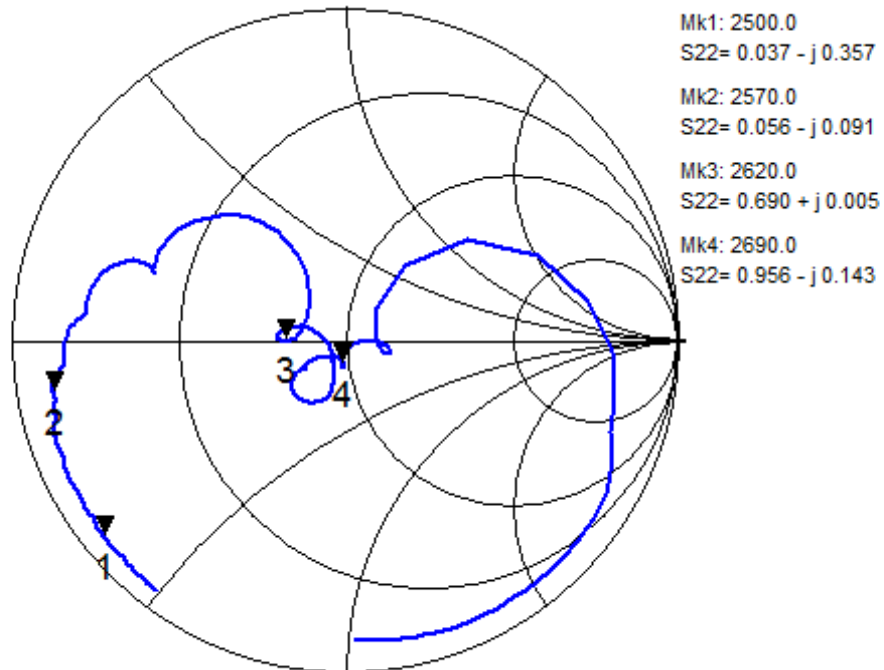
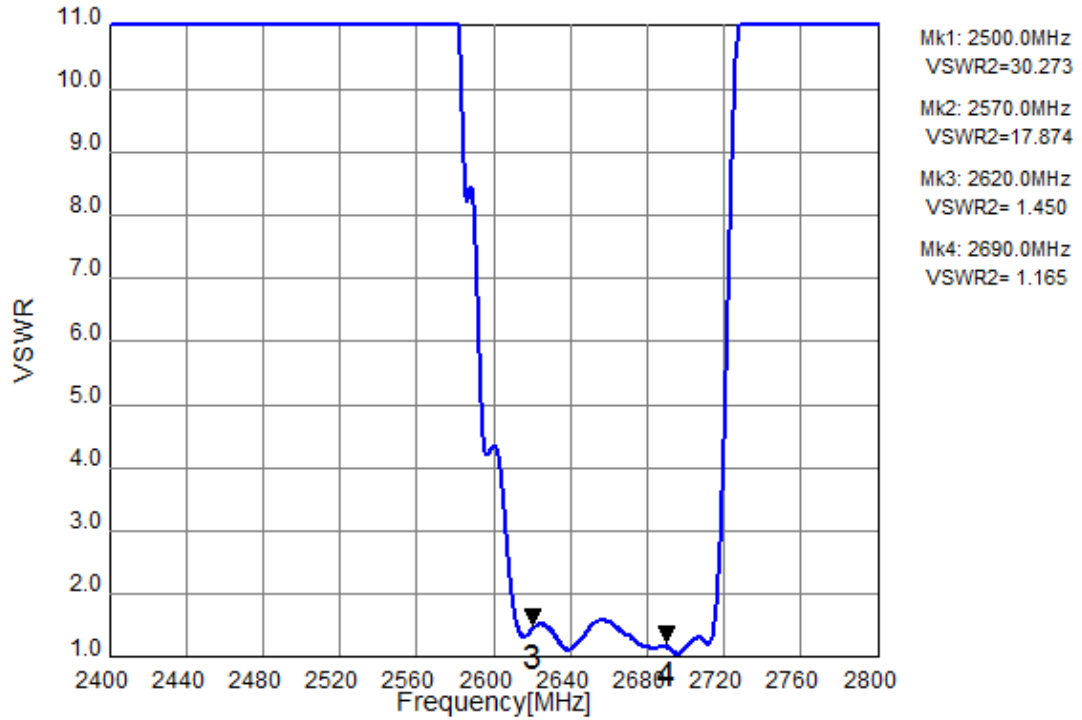


Figure 3-4. Electrical Characteristics of Simulation.

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Ant Port

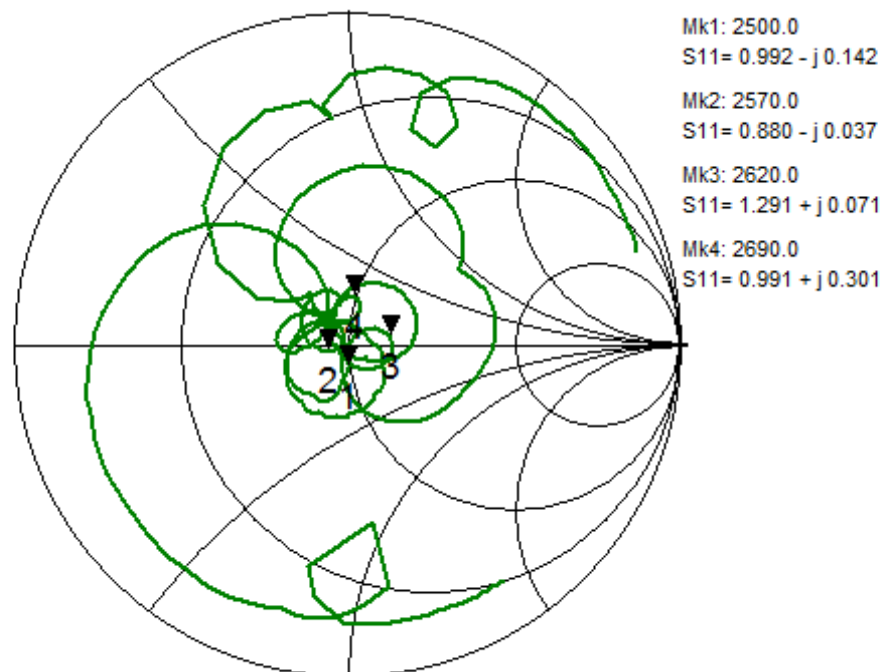
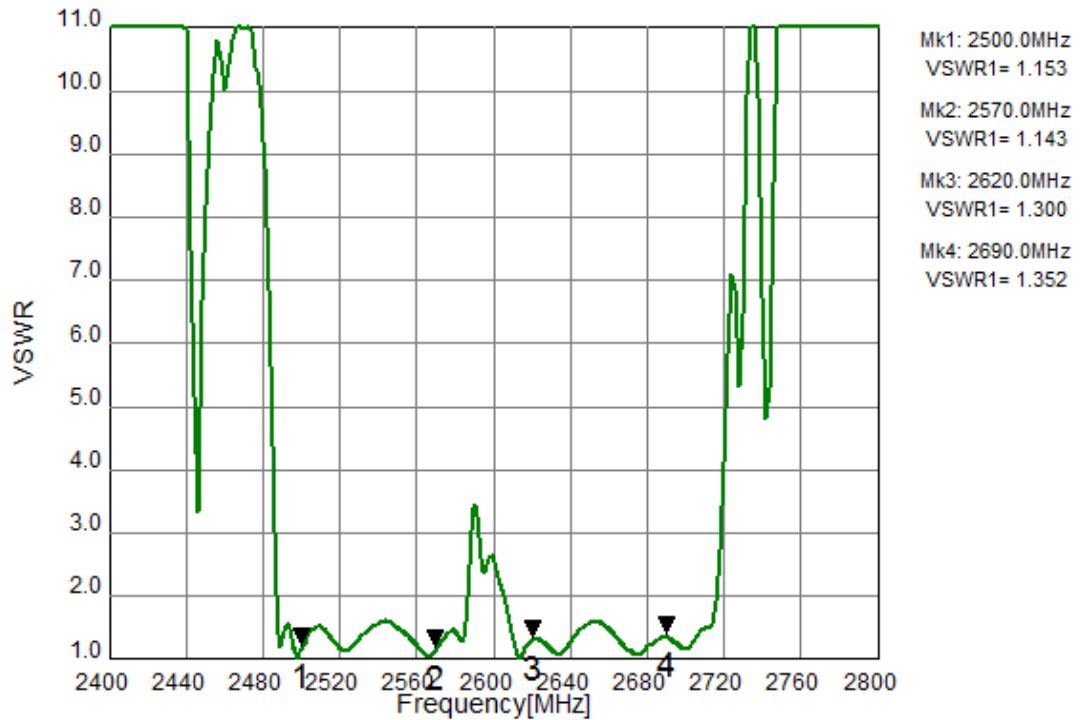
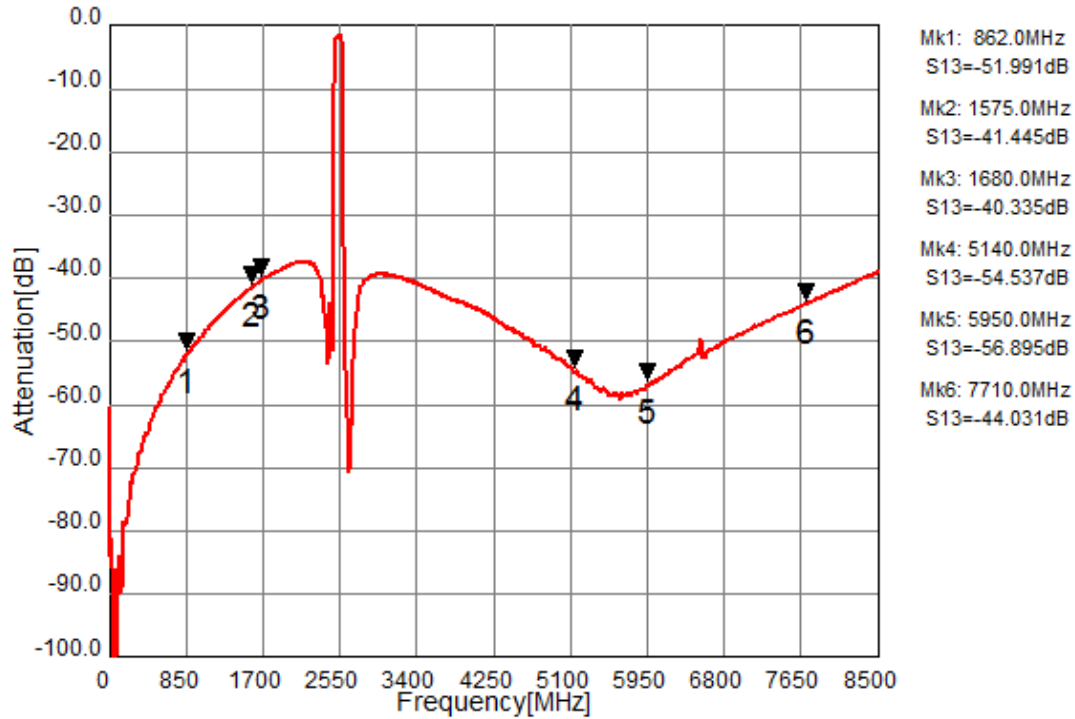


Figure 3 - 5. Electrical Characteristics of Simulation.

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Tx to Ant (Wide span)



Ant to Rx (Wide span)

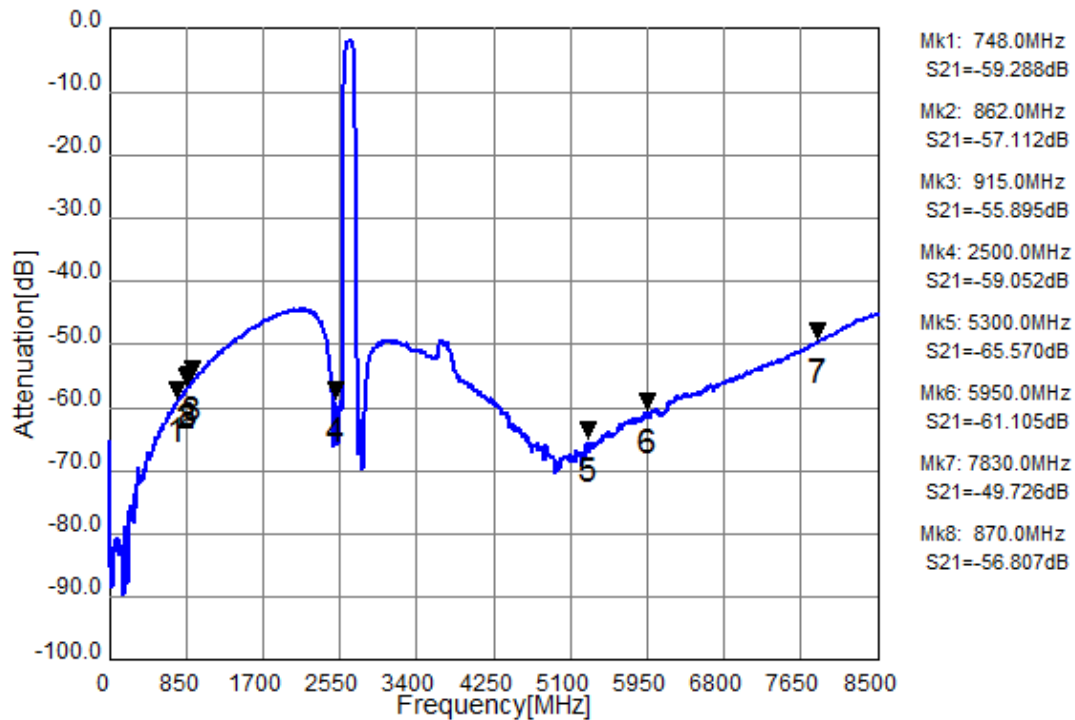


Figure 3 - 6. Electrical Characteristics.

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Tx to Rx Isolation (Wide span)

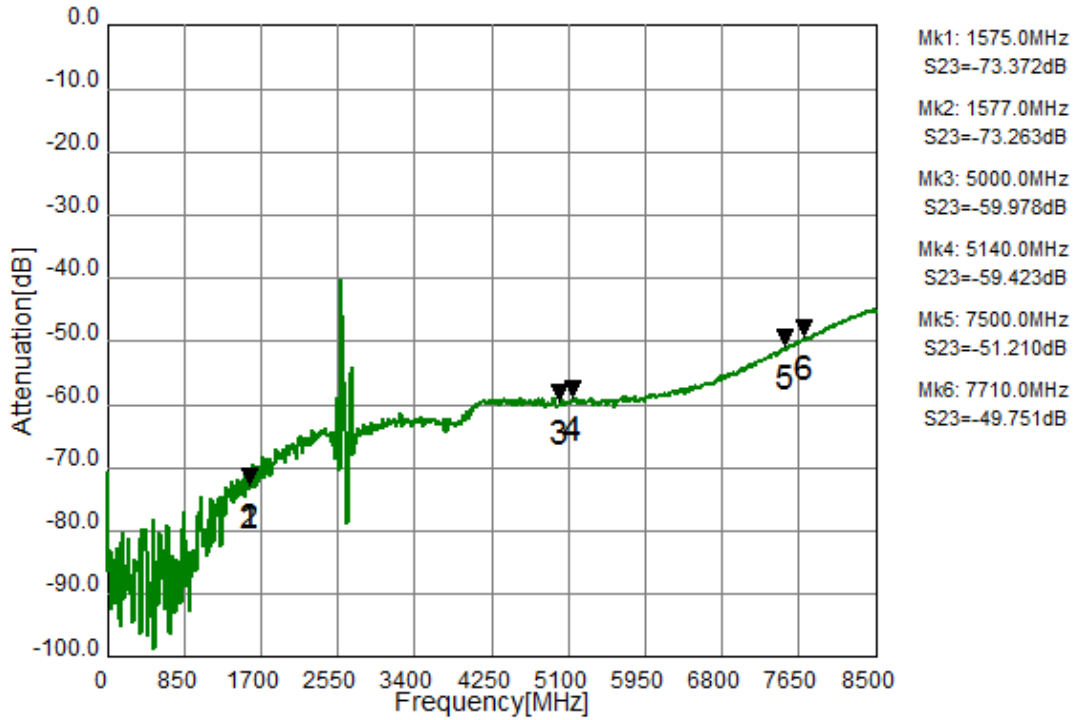
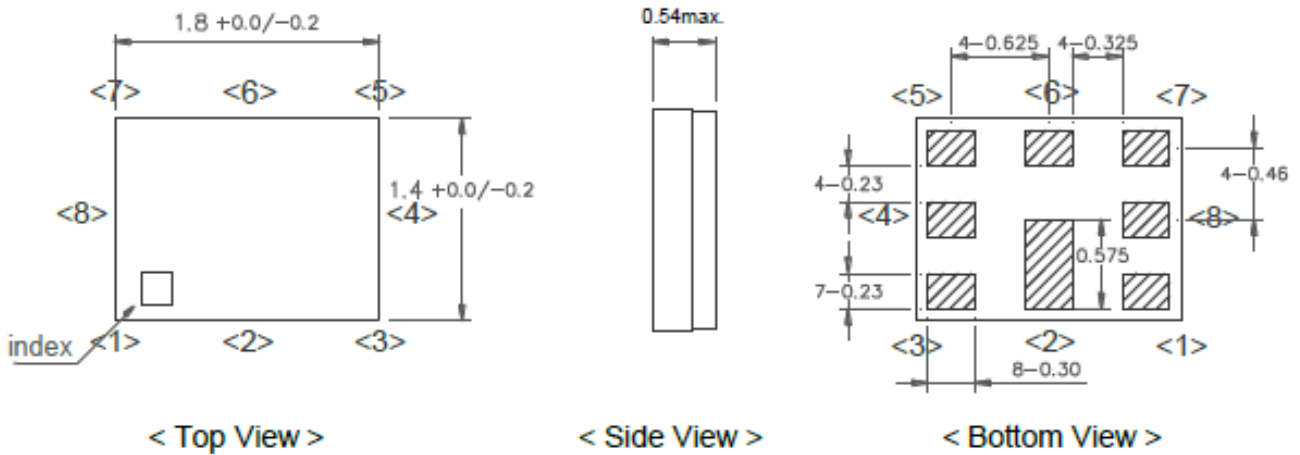


Figure 3 - 7. Electrical Characteristics.

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F. OUTLINE DRAWING:



Unit: mm

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

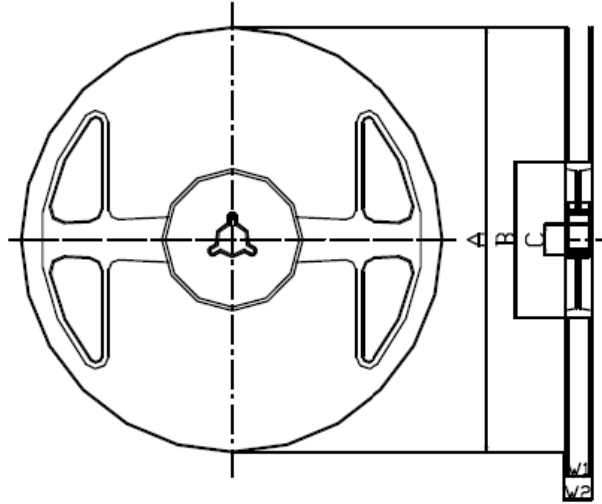
Figure 1. Dimensions and Pin assignment

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G. PACKING:

1. Reel Dimension



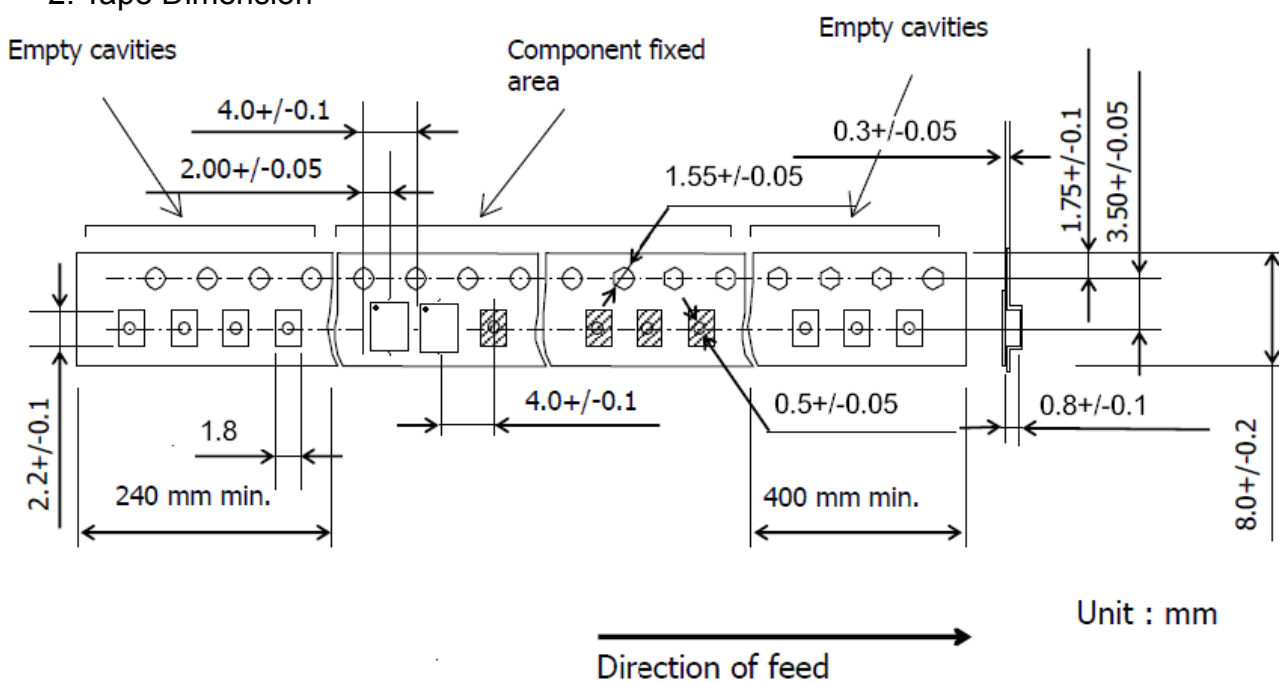
Materials of Reel

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.

