

**SAW Duplexer 707.50 / 737.50MHz**

**Model: TF0133A**

**Part No: MP07868**

**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. Tx Input power: 29dBm (Ta = +50°C, 50000h)  
 Rx Input power: 15dBm (Ta = +50°C, 50kh, CW)
4. Maximum DC Voltage: ±3V
5. Moisture Sensitivity Level: Level 1 (MSL 1)
6. ESD 100V (MM) 200V(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 // 12nH Ω (Single-ended)

**Tx to ANT (f<sub>T0</sub> = 707.50MHz)**

Parameters Description		Unit	Min	Typ	Max	Remarks
Insertion Loss (*1)	699 ~ 716MHz	dB	-	1.65	2.35	
Amplitude ripple	699 ~ 716MHz	dB	-	0.8	1.5	
VSWR	ANT	-	-	1.8	2.1	
	Tx	-	-	1.9	2.2	
Attenuation:						
	729 ~ 746MHz	dB	45	54	-	
	746 ~ 768MHz	dB	30	46	-	
	768 ~ 805MHz	dB	25	41	-	
	869 ~ 894MHz	dB	35	44	-	
	1398 ~ 1432MHz	dB	30	46		
	1559 ~ 1606MHz	dB	40	46	-	
	2097 ~ 2155MHz	dB	35	43	-	
	2400 ~ 2484MHz	dB	30	55	-	
	2796 ~ 2864MHz	dB	15	41	-	
	4900 ~ 5850MHz	dB	5	12		

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**ANT to Rx ( $f_{T0} = 737.50\text{MHz}$ )**

Parameters Description		Unit	Min	Typ	Max	Remarks
Insertion Loss	729 ~ 746MHz	dB	-	1.65	2.35	
Amplitude ripple	729 ~ 746MHz	dB	-	0.5	1.5	
VSWR	ANT	-		1.6	2.0	
	Rx					
Attenuation:						
699 ~ 716MHz		dB	55	62	-	
776 ~ 805MHz		dB	35	40	-	
814 ~ 960MHz		dB	40	55		
1710 ~ 1755MHz		dB	40	54		
1850 ~ 1920MHz		dB	40	52	-	
2187 ~ 2238MHz		dB	40	51	-	
2400 ~ 2500MHz		dB	40	49		
4900 ~ 5950MHz		dB	35	46		

**Tx to Rx**

Isolation	699 ~ 716MHz	dB	60	63	-	
	729 ~ 746MHz	dB	55	58	-	

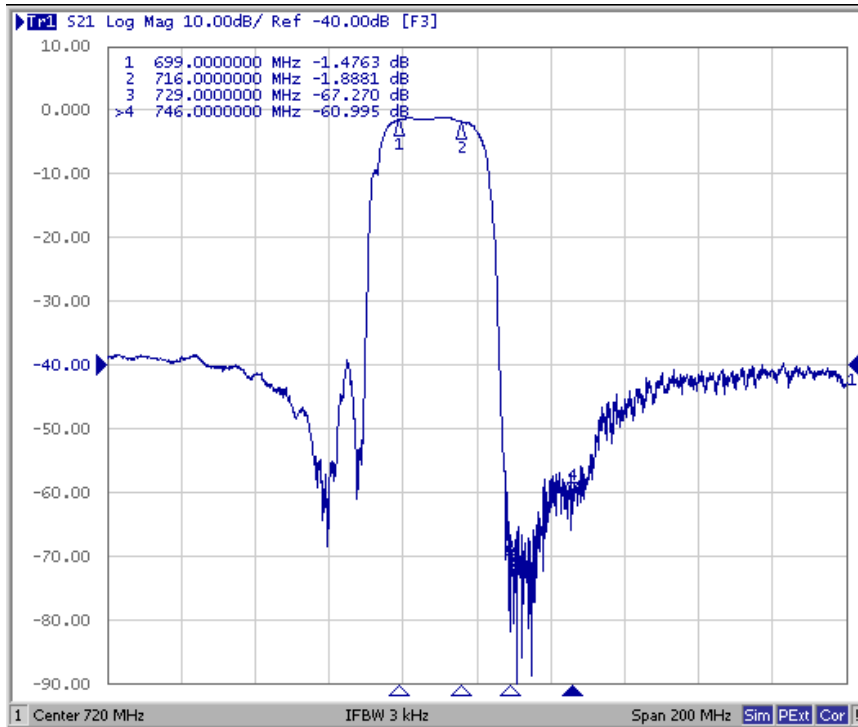
(\*1) Specification of insertion loss excludes loss that comes from the test board.

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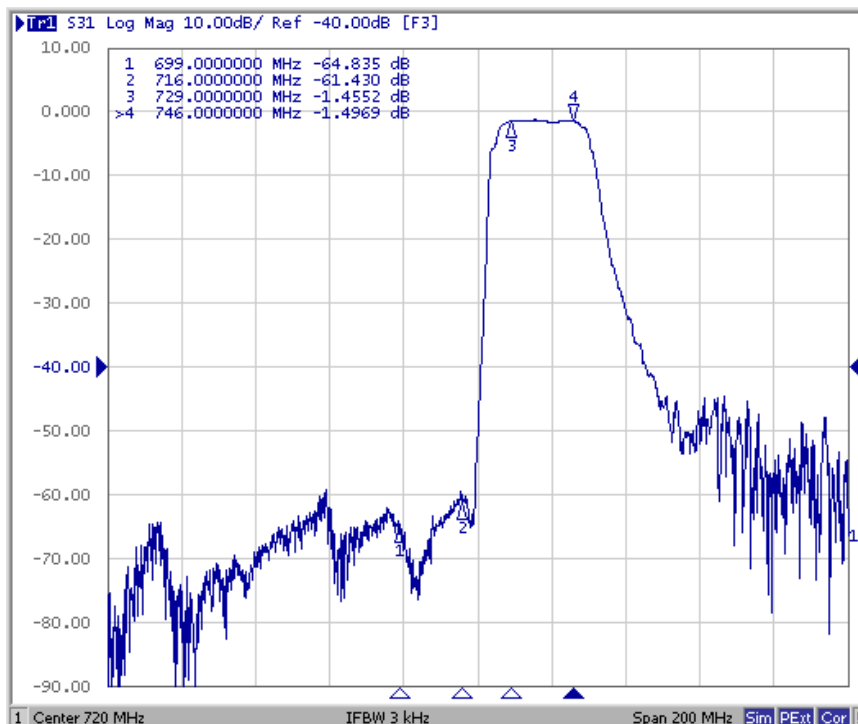
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**C. FREQUENCY CHARACTERISTICS:**

1. Tx to Ant



2. Ant to Rx

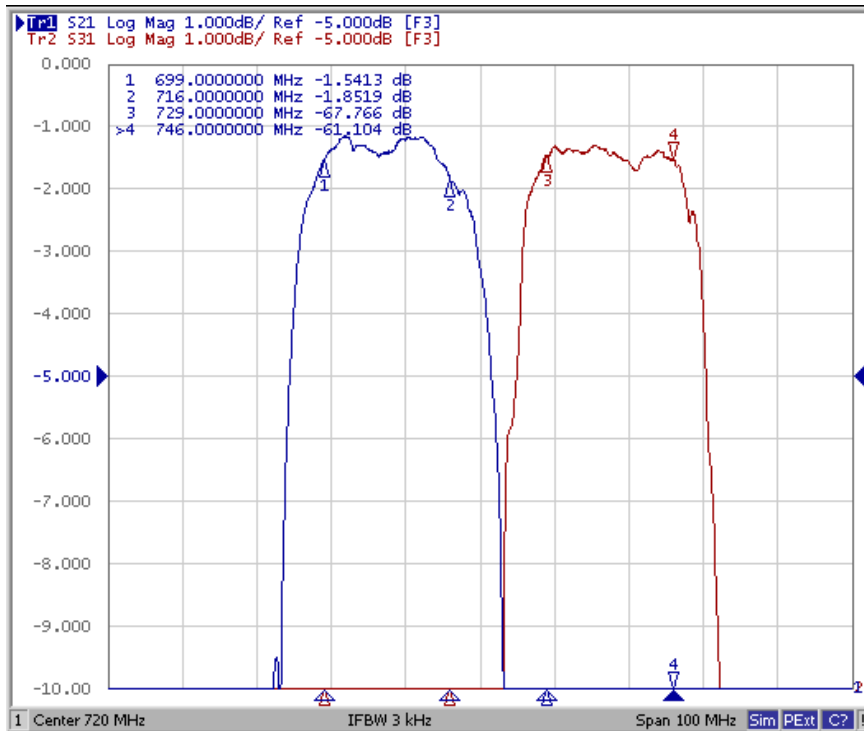


These data exclude loss that comes from the test board.

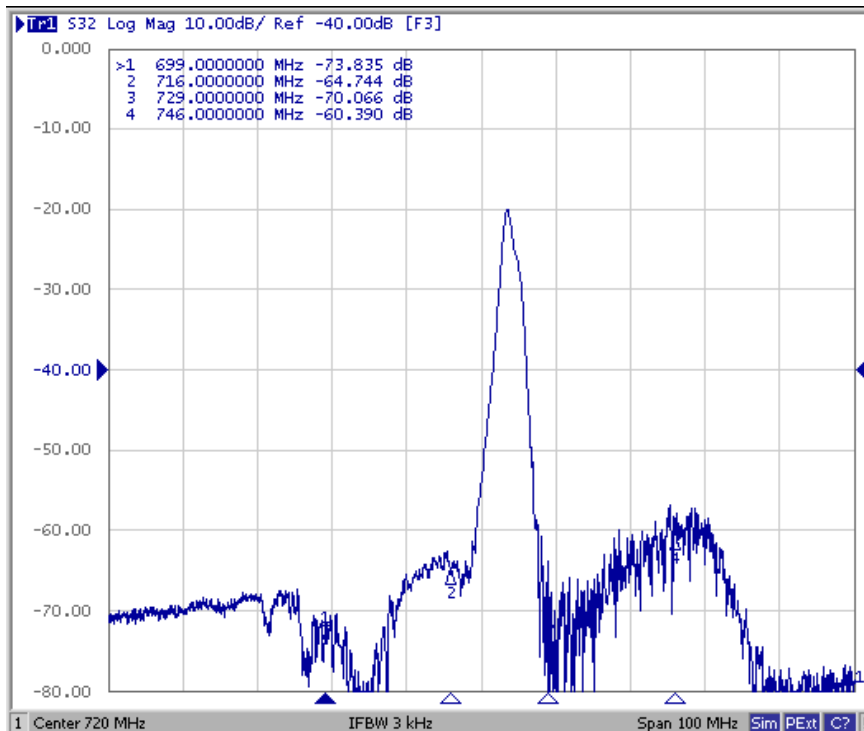
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3. Tx to Ant, Ant to Rx



4. Tx to Rx Isolation

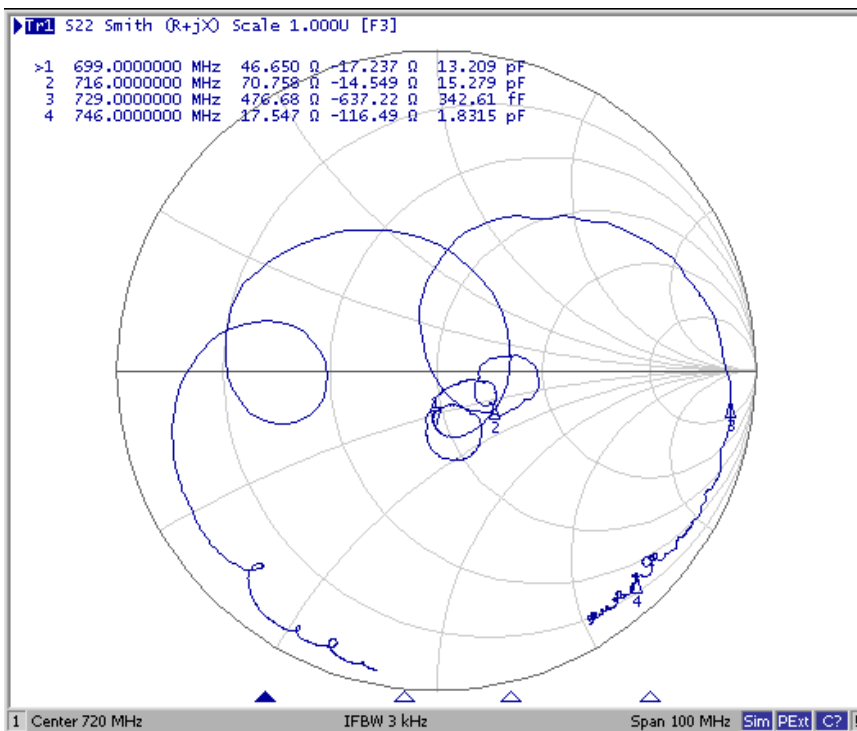
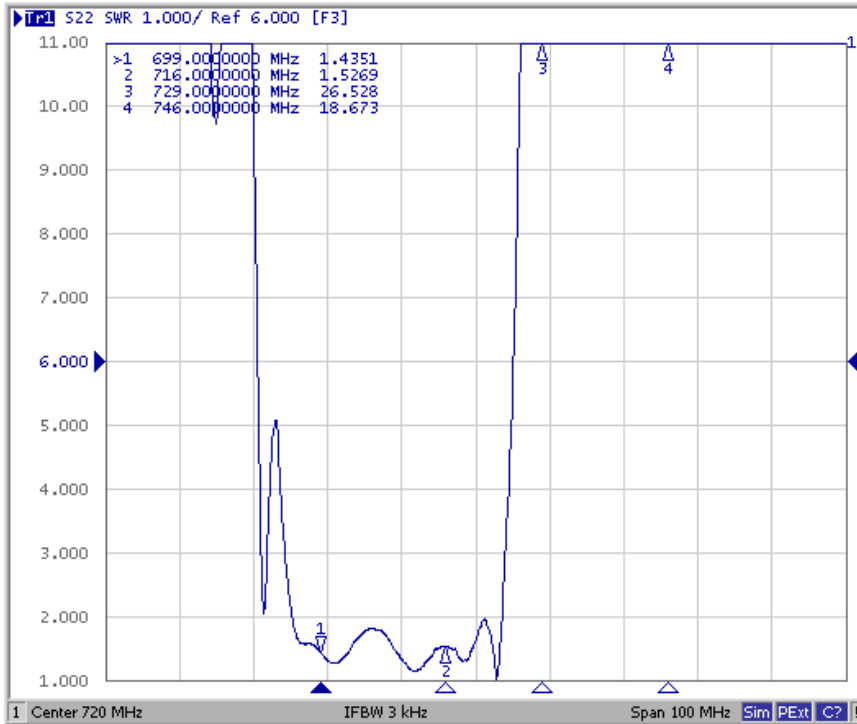


These data exclude loss that comes from the test board.

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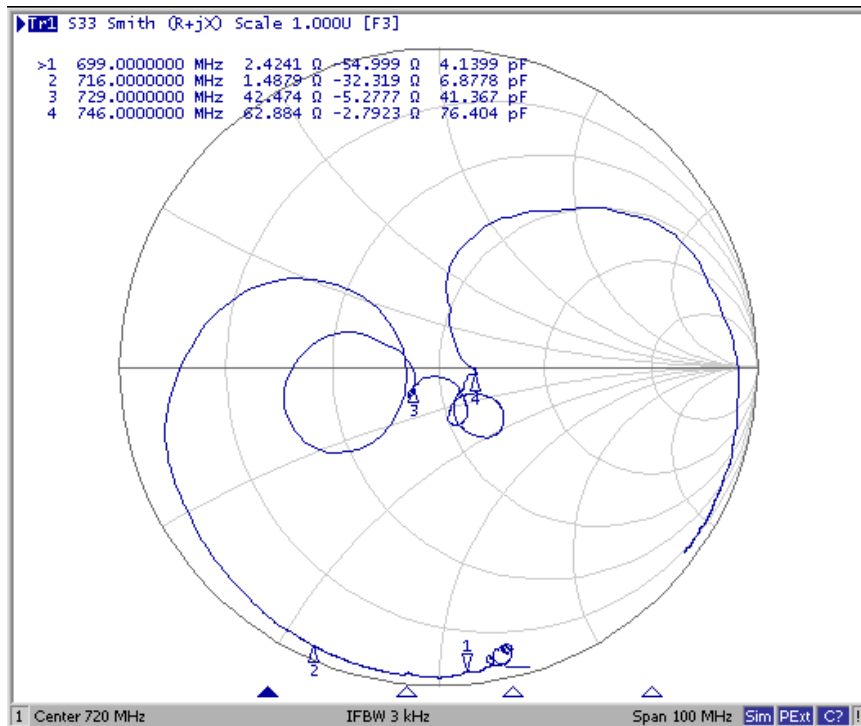
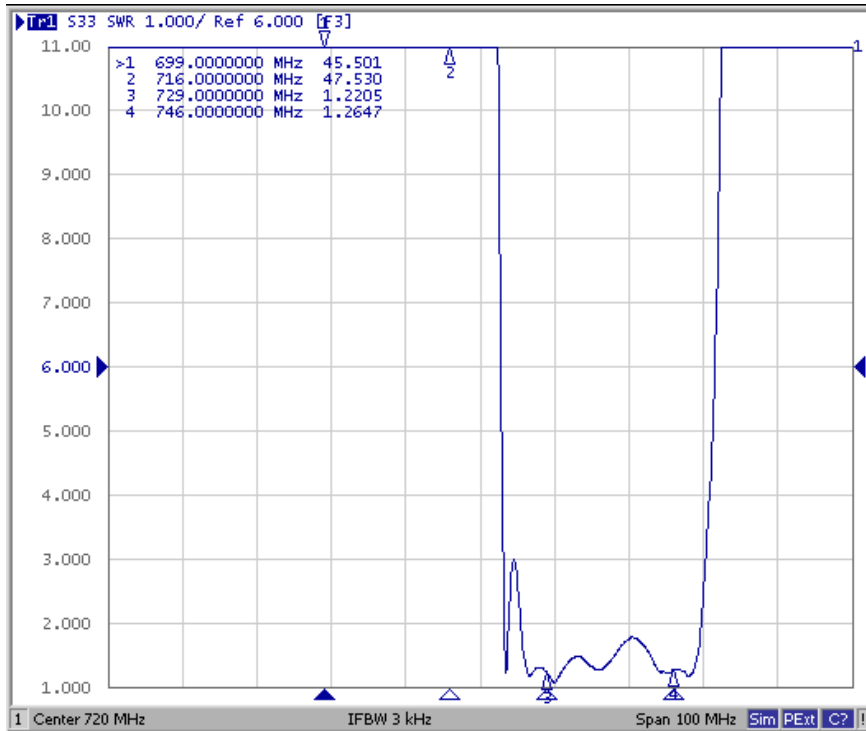
5. Tx Port



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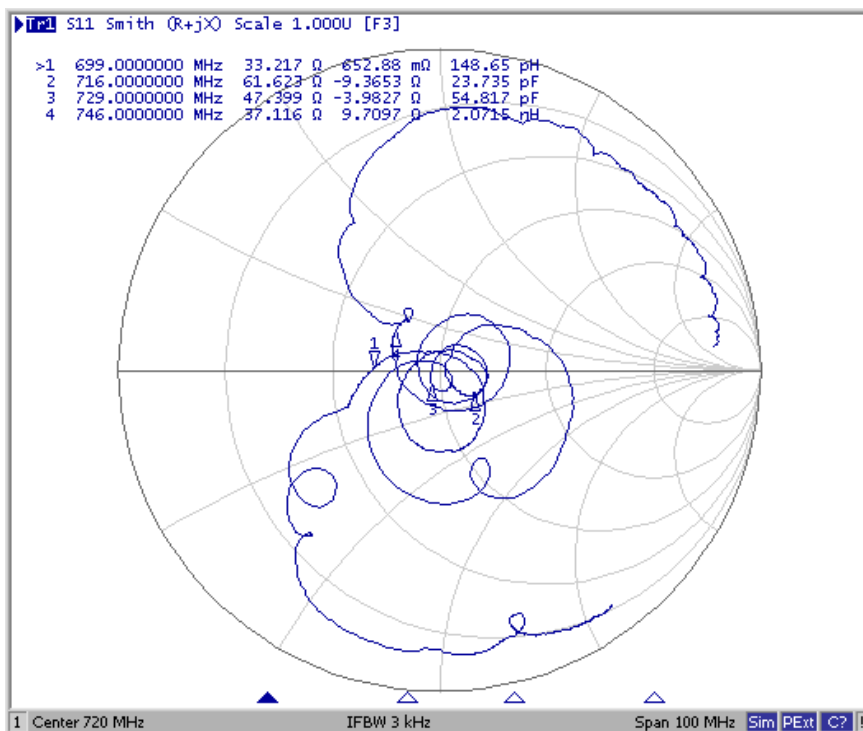
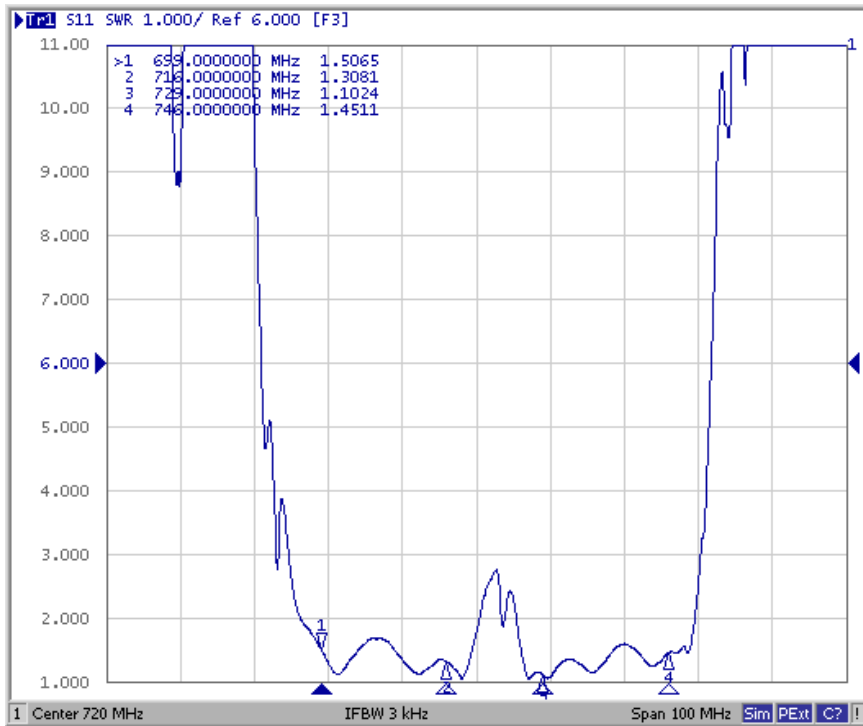
6. Rx Port



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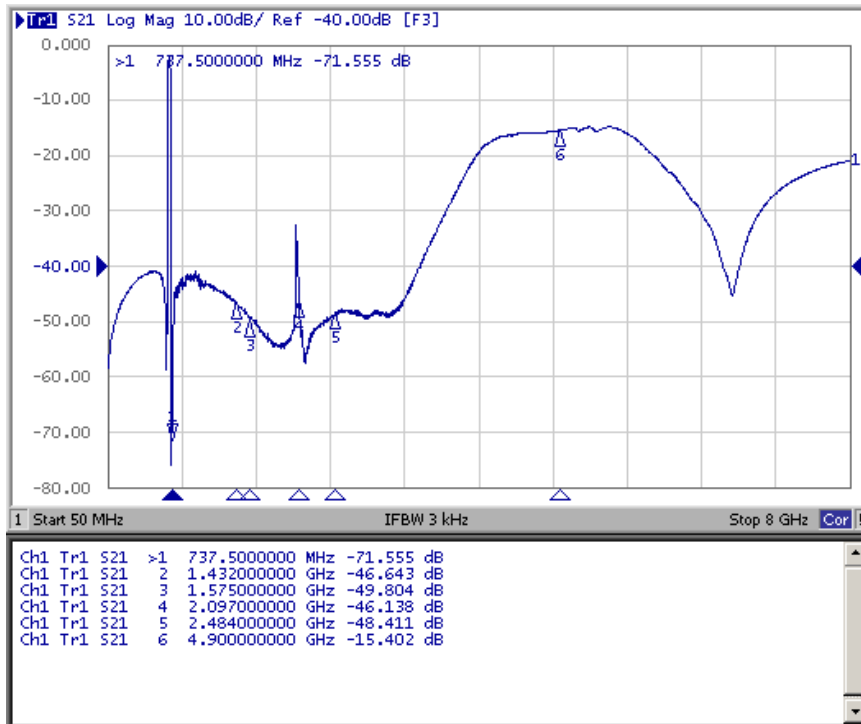
7. Ant Port



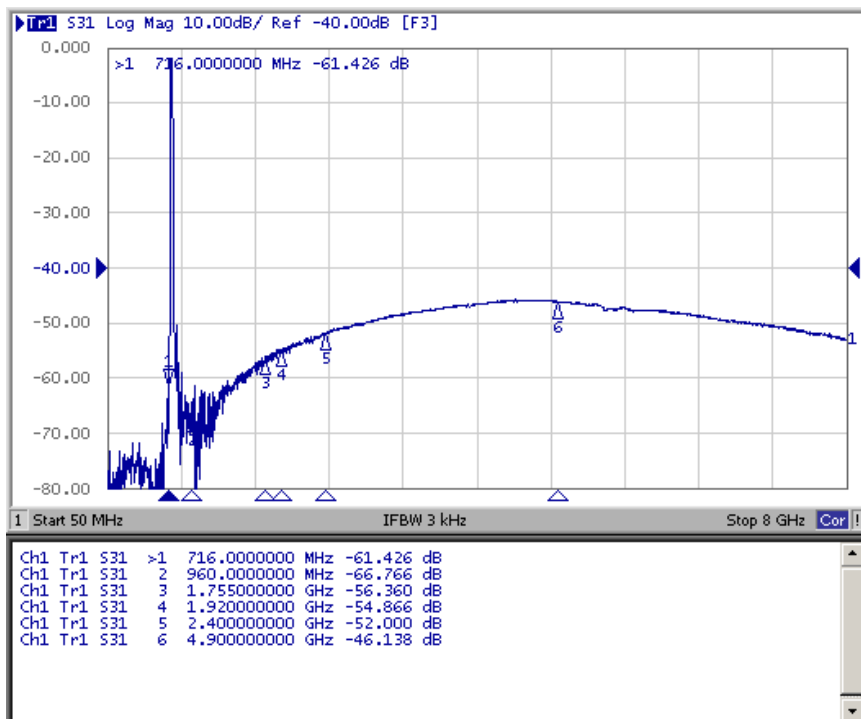
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8. Tx to Ant (Wide Span)



9. Ant to Rx (Wide Span)



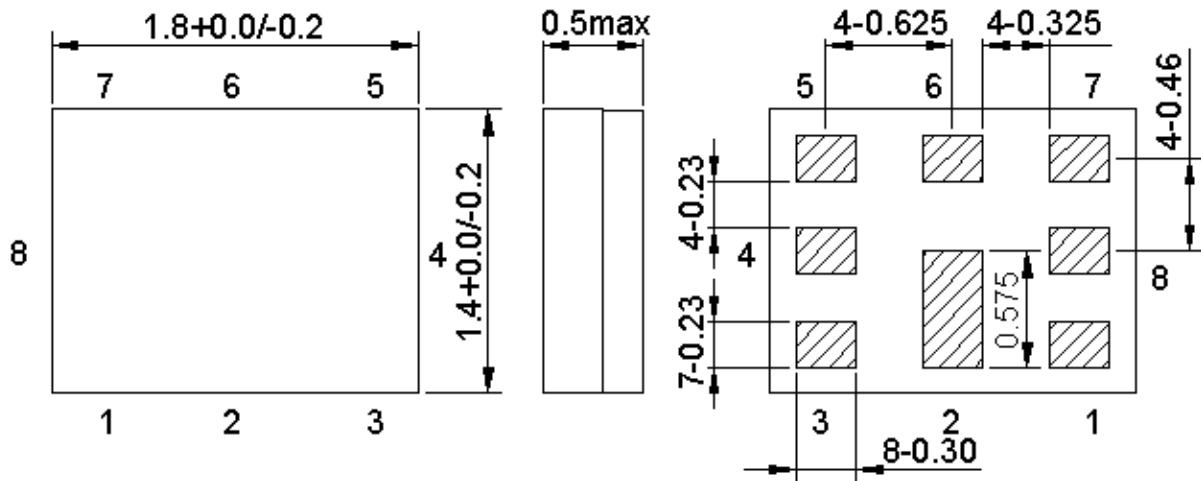


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**D. OUTLINE DRAWING:**

(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

**Figure 1. Dimensions and Pin assignment**

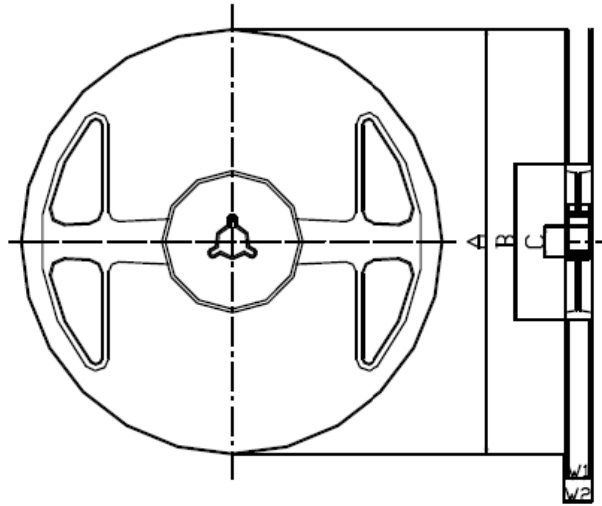


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**G. PACKING:**

1. Reel Dimension



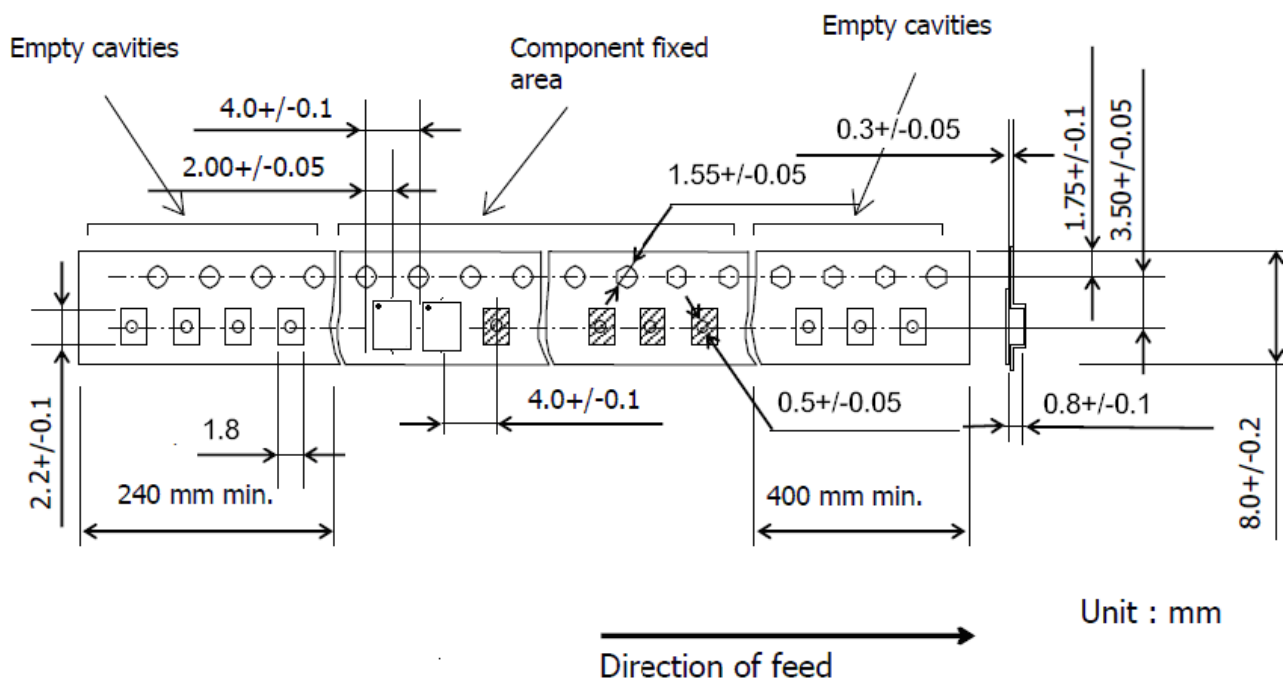
**Materials of Reel**

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.

