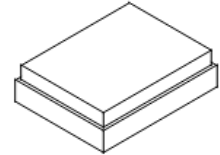


**SF2596NA**

**782/751 MHz  
Filter Duplexer**



**SM1814**

**MAXIMUM RATING:**

- Input power : 29dBm (Ta=+50deg C,50000h,CW )
- Maximum DC Voltage: +/-5 V
- Operating temperature range: -40 °C to +85 °C
- Storage temperature range: -55 °C to +125 °C
- Moisture Sensitivity Level: Level 1 (MSL 1)
- ESD 100V(MM) 200V(HBM)
- AEC-Q200 Qualified

**ELECTRICAL CHARACTERISTICS:**

Terminating impedance(Tx Port): 50 Ω (Single-ended)

Terminating impedance(Rx Port): 50 Ω (Single-ended)

Terminating impedance(Ant Port): 50//12nH (Ω=∞) (Single-ended)

**Tx to ANT**

Parameters Description		Unit	Minimum	Typical	Maximum	Note
Insertion Loss	777 ~ 787 MHz	Db(*1)	-	1.9	2.5	
Ripple	777 ~ 787 MHz	dB	-	0.8	1.6	
VSWR	Tx	-	-	1.6	2.0	
	ANT	777 ~ 787 MHz	-	1.6	2.0	
<b>Attenuation:</b>						
746 ~ 756 MHz		dB	44	51	-	-
758 ~ 768 MHz		dB	10	32	-	-
768 ~ 775 MHz		dB	1	2.5	-	-
1554 ~ 1565 MHz		dB	41	46	-	-
1565 ~ 1607 MHz		dB	41	46	-	-
2331 ~ 2361 MHz		dB	35	53	-	-
2400 ~ 2484 MHz		dB	40	50	-	-
3108 ~ 3148 MHz		dB	23	28	-	-
4900 ~ 5950 MHz		dB	8	12	-	-

### ANT to Rx

Parameters Description		Unit	Minimum	Typical	Maximum	Note
Insertion Loss	746 ~ 756 MHz	dB(*1)	-	1.7	2.3	
Ripple)	746 ~ 756 MHz	dB	-	0.4	1.0	
VSWR	ANT	-	-	1.4	2.0	
	Rx	-	-	1.5	2.0	
<b>Attenuation:</b>						
777 ~ 787 MHz		dB	50	62	-	
2400 ~ 2500 MHz		dB	40	45	-	
787 ~ 6000 MHz		dB	23	28	-	

### Tx to Rx

Isolation	746 ~ 756 MHz	dB	52	58	-	
	777 ~ 787 MHz	dB	56	61	-	

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



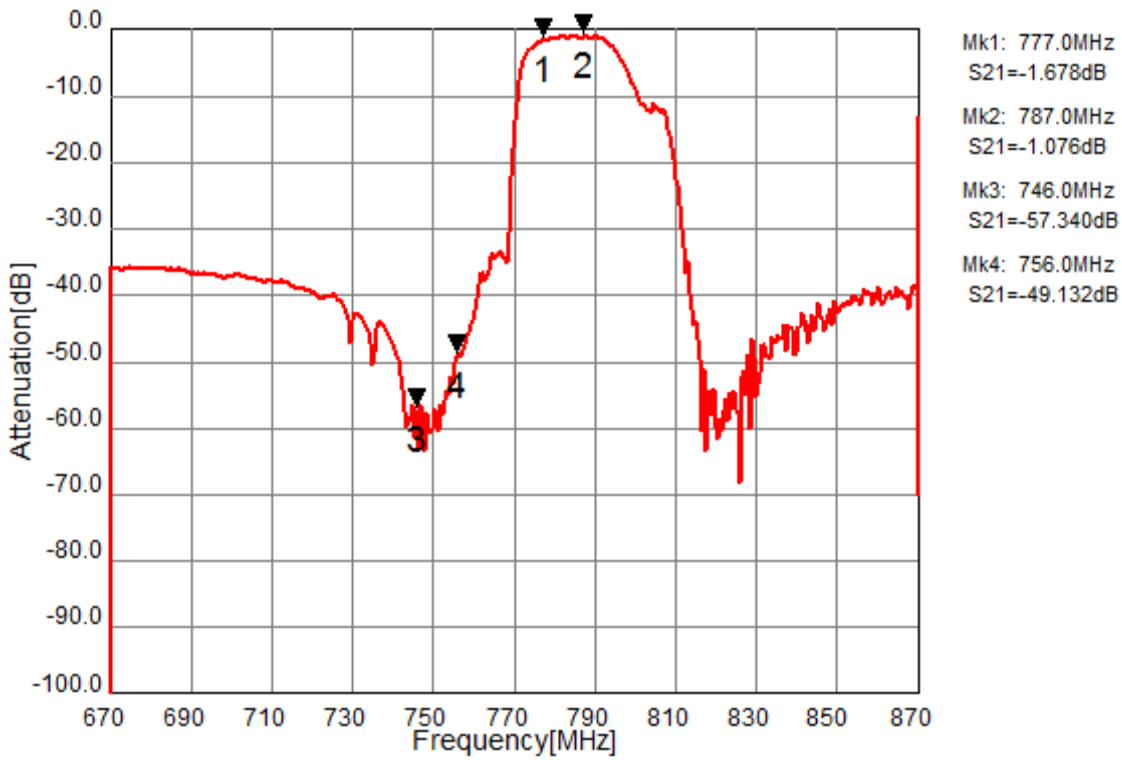
**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

**NOTES:**

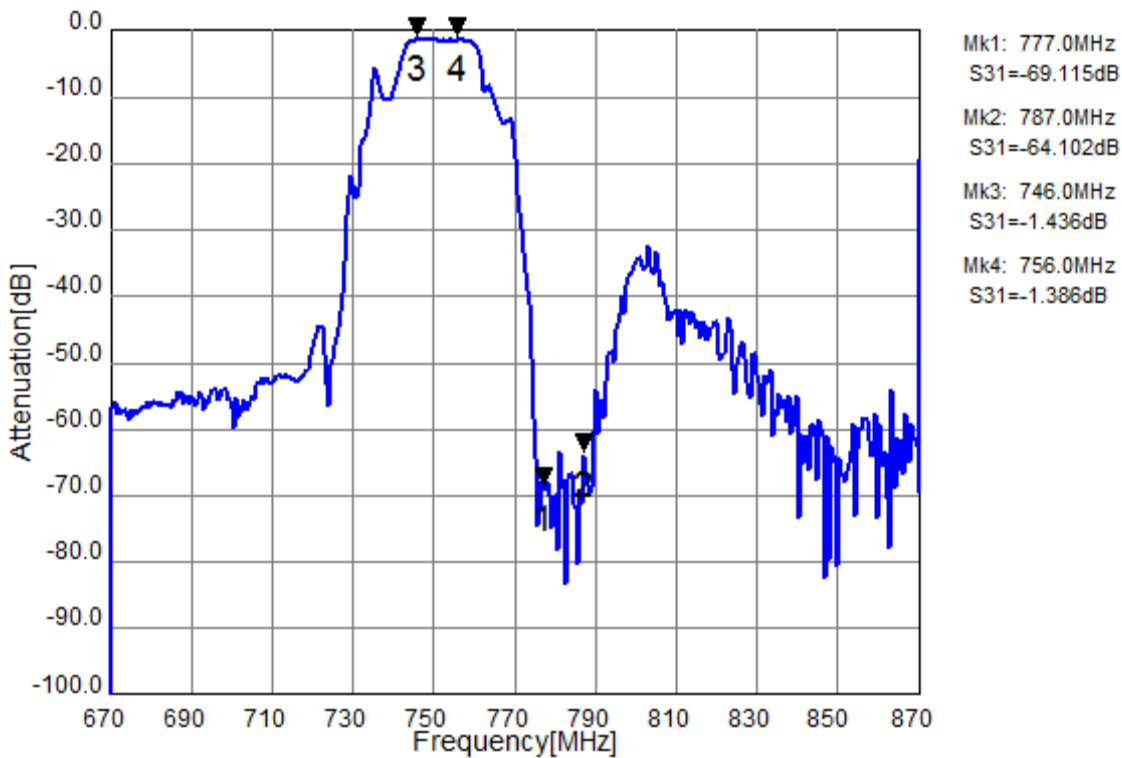
1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

## Frequency Characteristics:

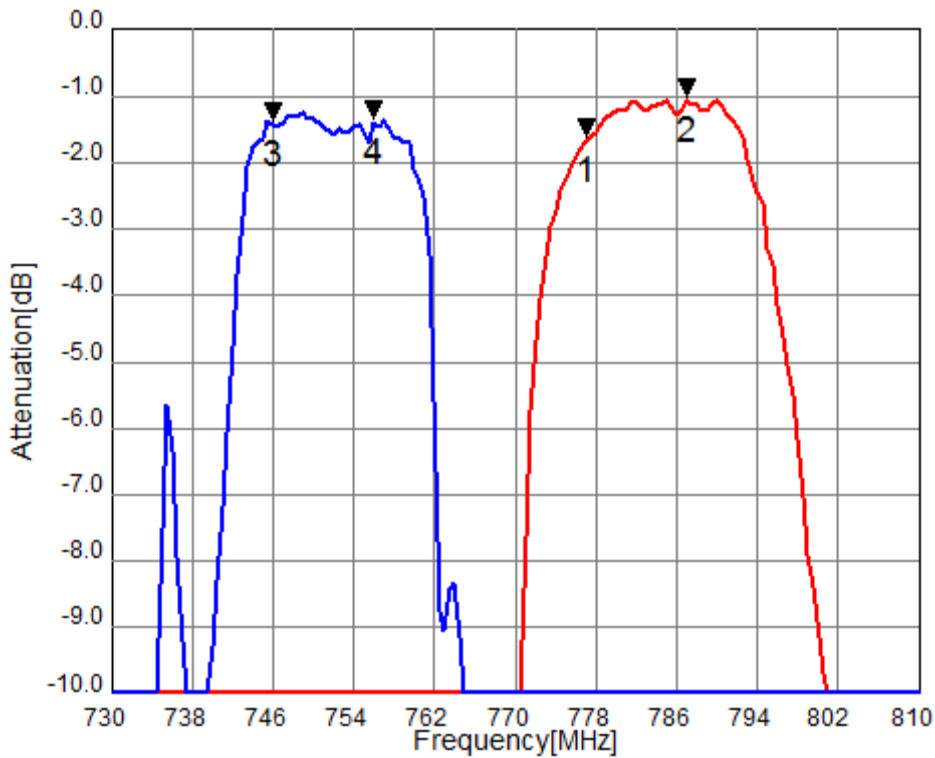
### Tx to Ant



### Ant to Rx



## Tx to Ant, Ant to Rx



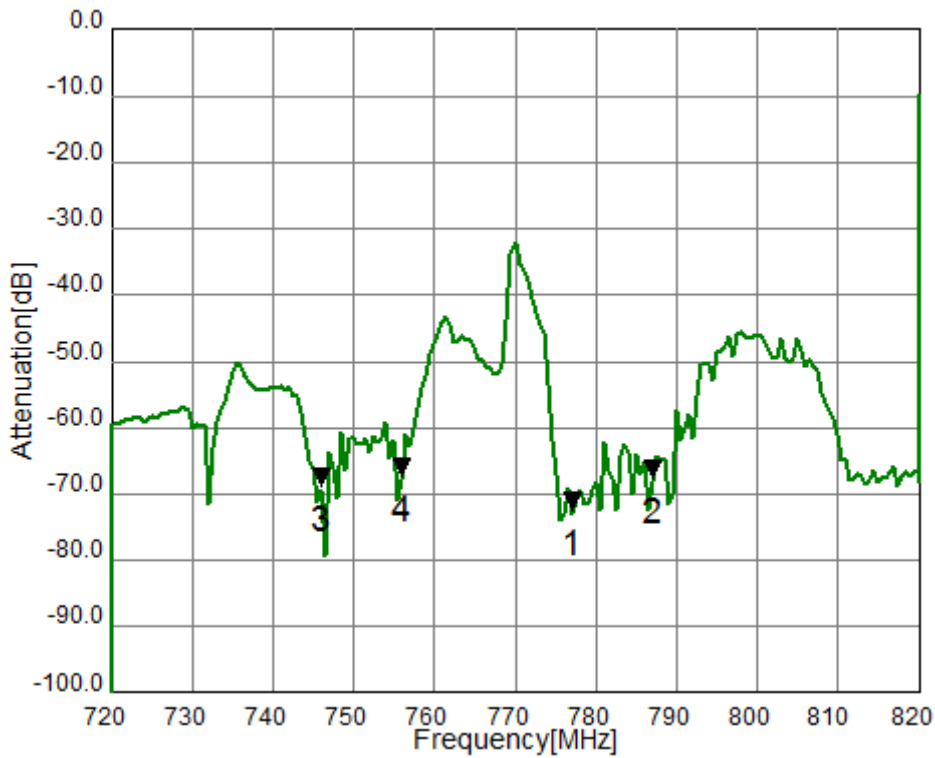
Mk1: 777.0MHz  
S21=-1.678dB  
S31=-69.115dB

Mk2: 787.0MHz  
S21=-1.076dB  
S31=-64.102dB

Mk3: 746.0MHz  
S21=-57.340dB  
S31=-1.436dB

Mk4: 756.0MHz  
S21=-49.132dB  
S31=-1.386dB

## Tx to Rx Isolation



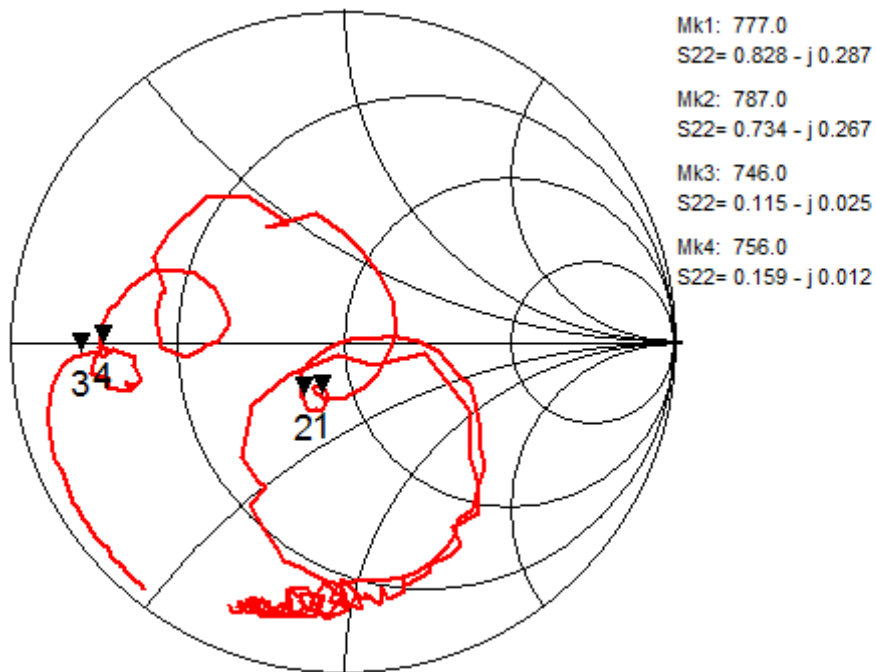
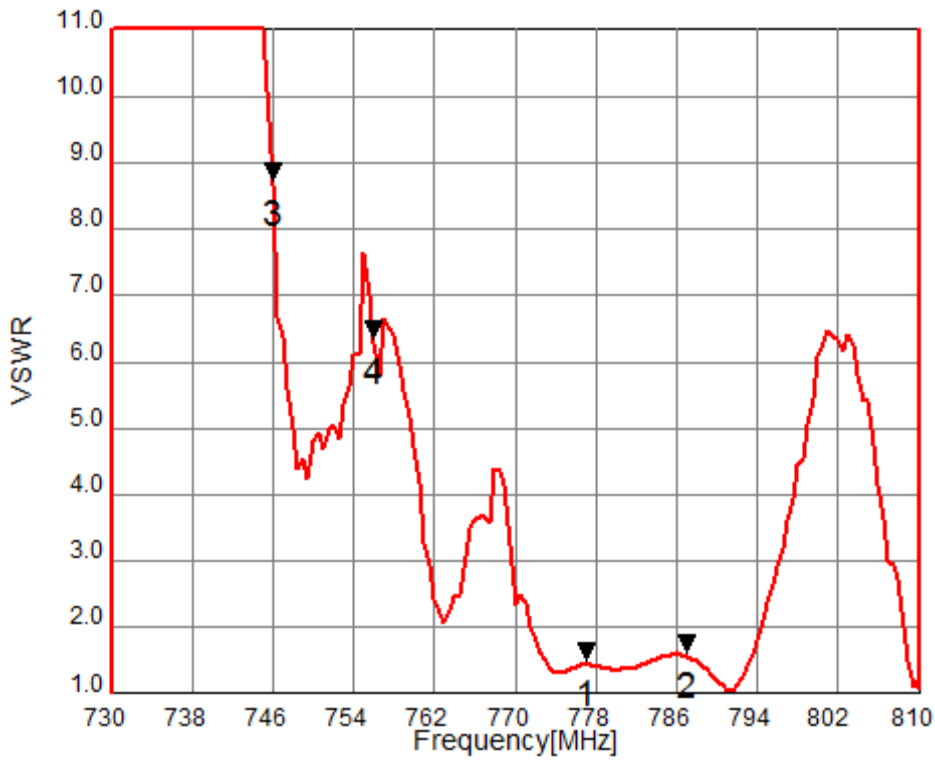
Mk1: 777.0MHz  
S32=-72.918dB

Mk2: 787.0MHz  
S32=-68.193dB

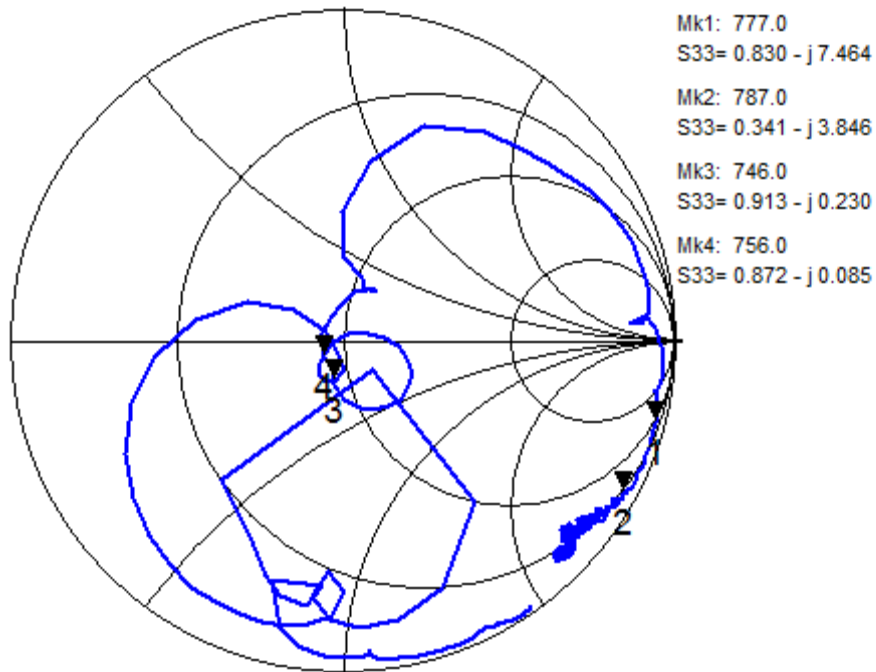
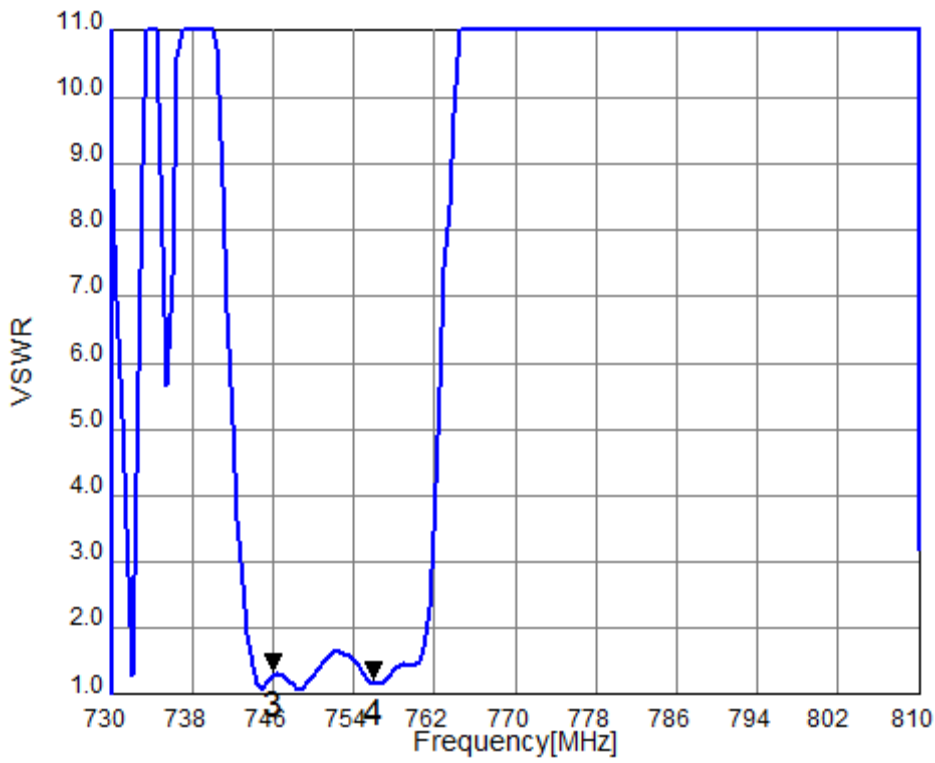
Mk3: 746.0MHz  
S32=-69.444dB

Mk4: 756.0MHz  
S32=-67.997dB

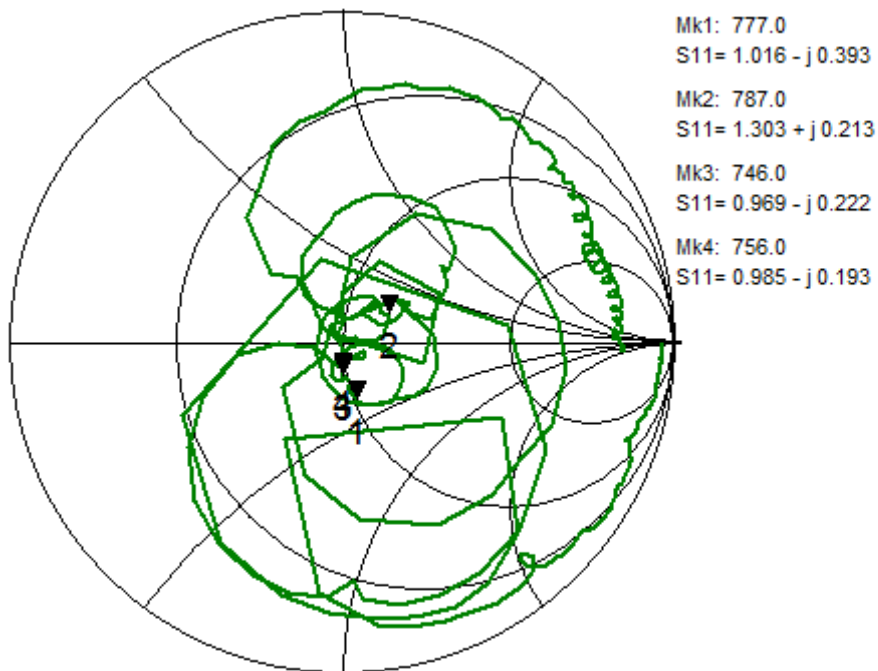
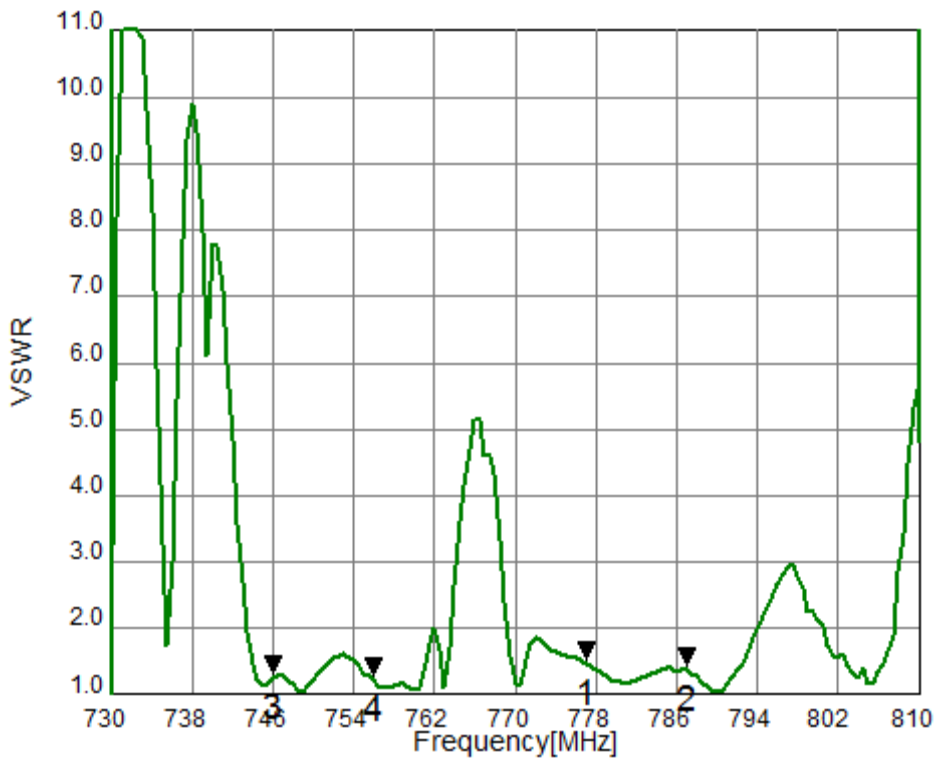
# Tx Port



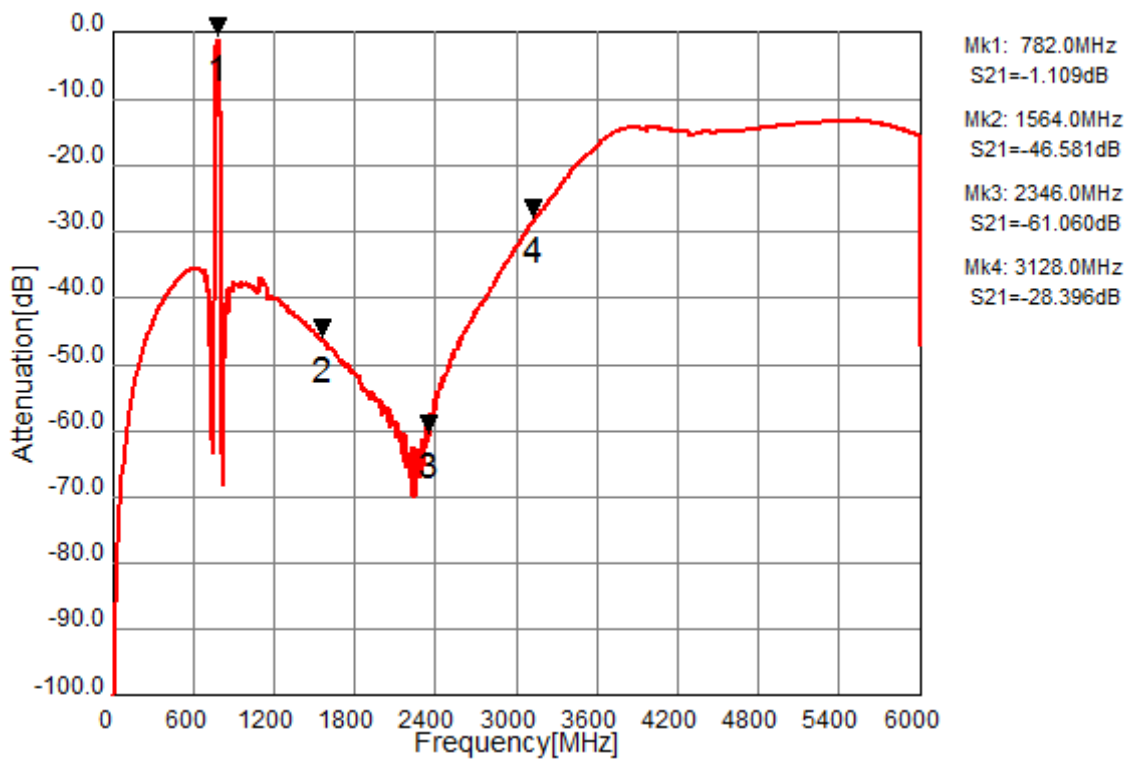
# Rx Port



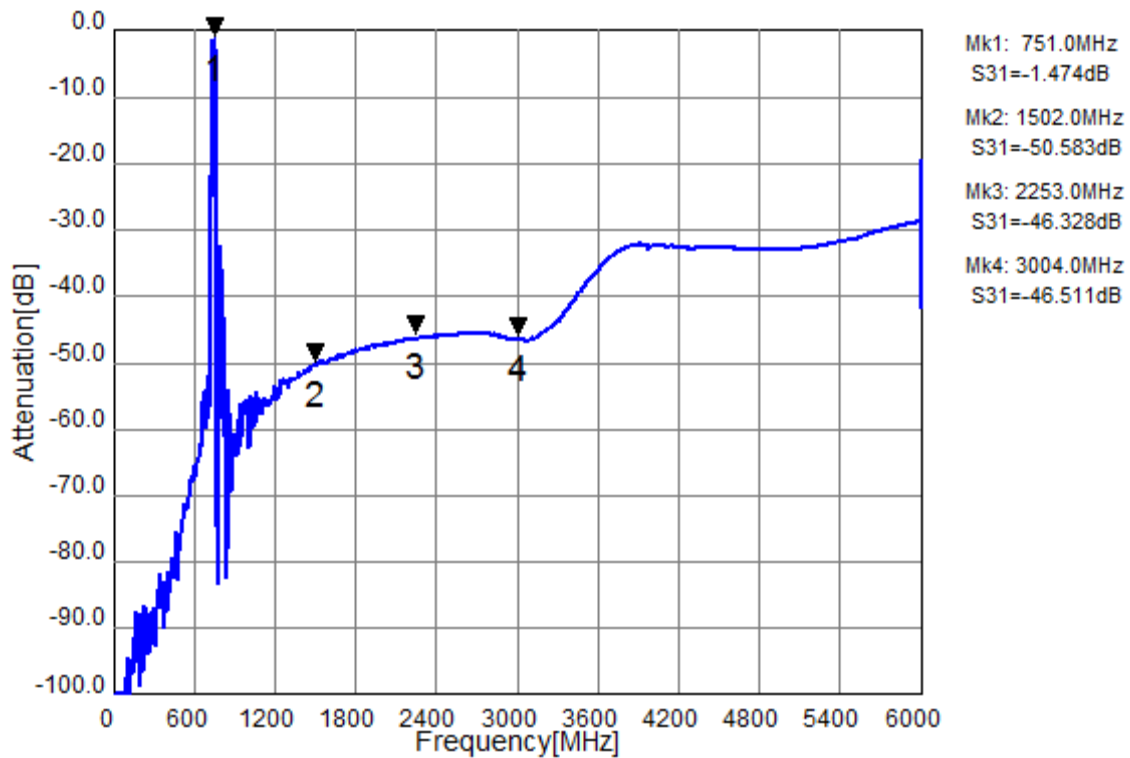
# Ant Port



## Tx to Ant (Wide span)

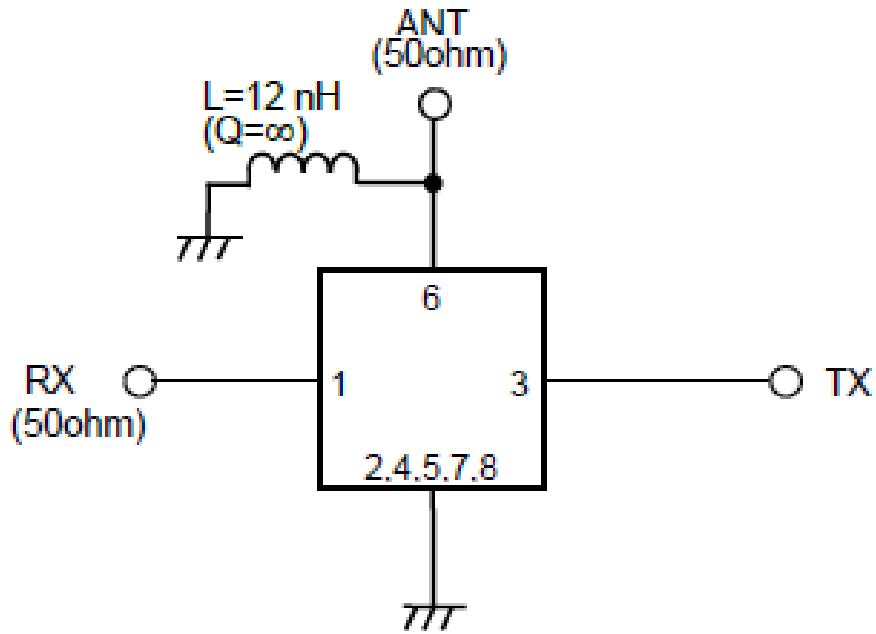


## Ant to Rx (Wide span)

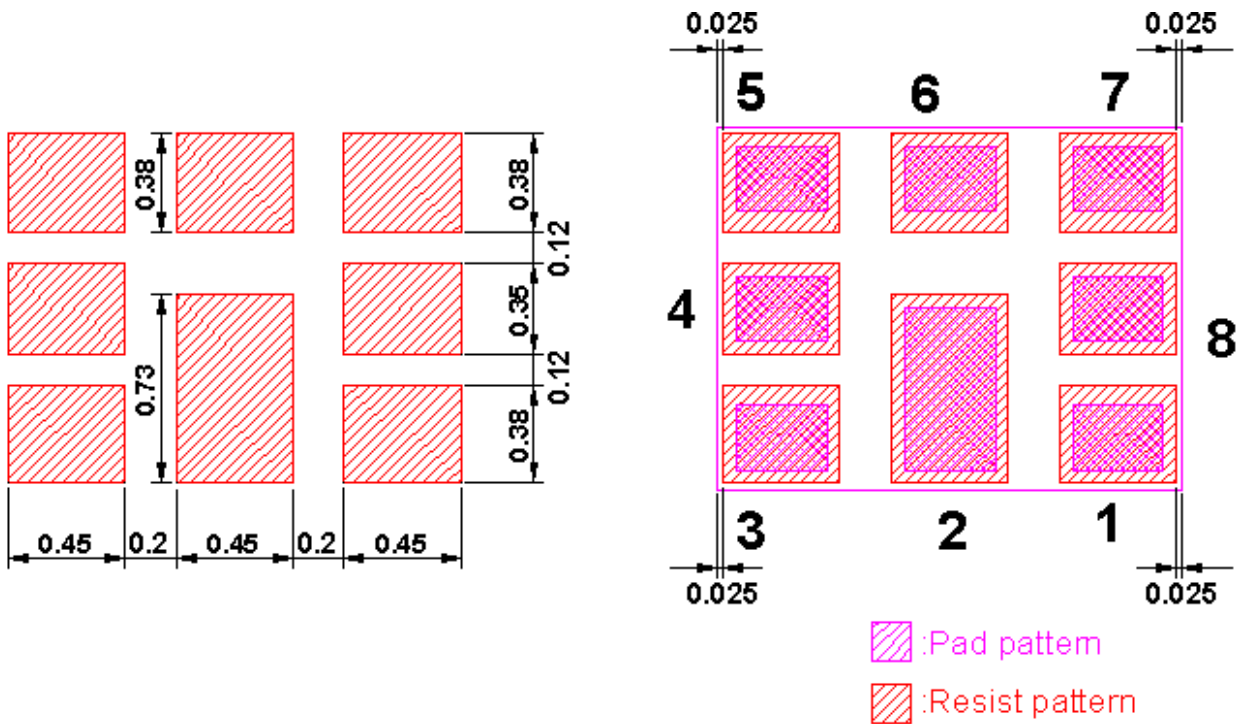




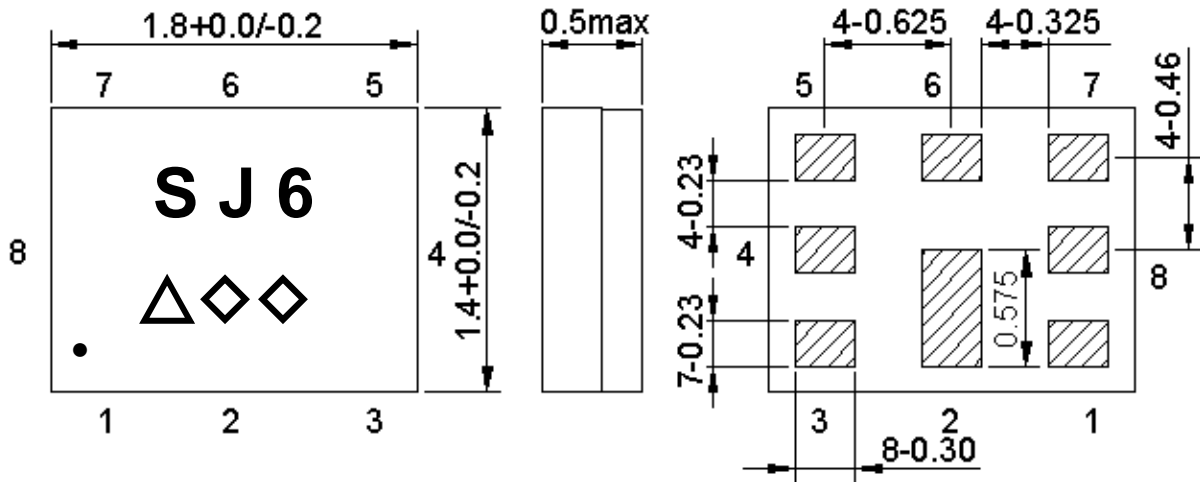
**MEASUREMENT CIRCUIT:**



**FOOTPRINT:**



**OUTLINE DRAWING: (Mass Production)**



Marking name : J6

△: Date code( 2016 May → s ,....., 2019 Dec→m.)

◇◇: Lot Code.

Product Date Code. Follow below table.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	n	p	q	r	s	t	u	v	w	x	y	z
2017	A	B	C	D	E	F	G	H	J	K	L	M
2020	N	P	Q	R	S	T	U	V	W	X	Y	Z
2019	a	b	c	d	e	f	g	h	j	k	l	m
2018	n	p	q	r	s	t	u	v	w	x	y	z
2021	A	B	C	D	E	F	G	H	J	K	L	M

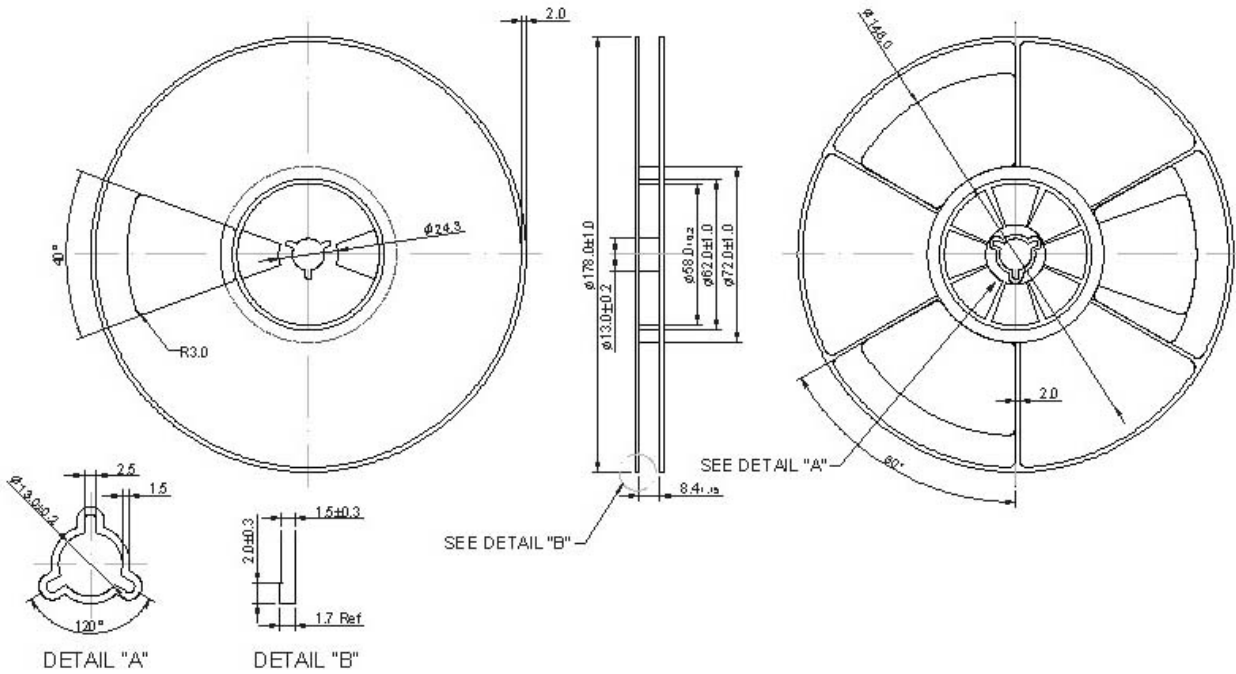
**Pin Configuration**

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

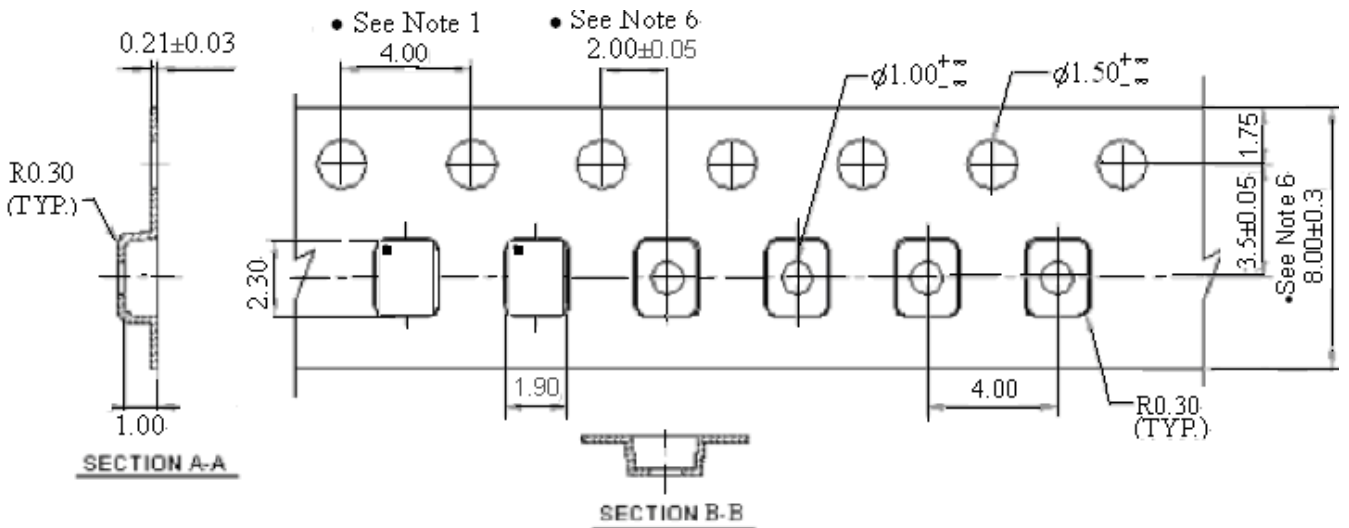
**Figure 1. Dimensions and Pin assignment**

**PACKING:**  
**REEL DIMENSION**

Reel Count:  
 7" = 3000  
 13" = 10,000



**TAPE DIMENSION**



## 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 (20~40sec).
4. Time: 2 times.

