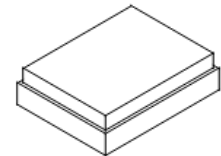


SF2602NA

**831.5/876.5MHz
Filter Duplexer**



SM1814

MAXIMUM RATING:

- Operating temperature range: -40 °C to +85 °C
- Storage temperature range: -55 °C to +125 °C
- Input power : 29dB (Ta=+50°C,5000h,WCDMA modulation)
- Maximum DC Voltage: +/-3 V
- Moisture Sensitivity Level: Level 1 (MSL 1)
- ESD 100V(MM) 200V(HBM)
- AEC-Q200 Qualified

ELECTRICAL CHARACTERISTICS:

Terminating impedance (Tx Port): 50+5.1nH Ω(Single-ended)

Terminating impedance (Rx Port): 50 Ω (Differential)

Terminating impedance (Ant Port): 50//8.2nH Ω(Single-ended)

Tx to ANT (f_{ro}=831.5 MHz)

Parameters Description		Unit	Min	Typ	Max	Remarks
Insertion Loss	815 ~ 845MHz	dB(*1)	-	1.3	2.2	
	814.24 ~ 815MHz	dB(*1)		1.4	2.4	
	845 ~ 848.76MHz	dB(*1)		1.9	2.9	
Amplitude ripple	814.24 ~ 848.76MHz	dB	-	1.2	2.2	
VSWR	Tx	814.24 ~ 848.76MHz	-	-	1.6	2.0
	ANT	814.24 ~ 848.76MHz	-	-	1.5	2.0
Attenuation:						
10 ~ 494 MHz		dB	35	41	-	
494 ~ 804 MHz		dB	32	37	-	
859.24 ~ 893.76 MHz		dB	44	56	-	
1475.9 ~ 1698 MHz		dB	35	40	-	
1710 ~ 2494 MHz		dB	30	35	-	
3256 ~ 4245 MHz		dB	20	27	-	
4884 ~ 6000 MHz		dB	35	44	-	
6512 ~ 6792 MHz		dB	15	28	-	
7326 ~ 7641 MHz		dB	12	26	-	

(*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.

ANT to Rx ($f_{T0}=876.5$ MHz)

Parameters Description		Unit	Min	Typ	Max	Remarks
Insertion Loss	859.24 ~ 893.76 MHz	dB(*1)	-	2.0	3.1	
Amplitude ripple	859.24 ~ 893.76 MHz	dB	-	1.0	2.2	
VSWR	ANT	-	-	1.8	2.2	
	Rx	-	-	1.8	2.2	

Attenuation:

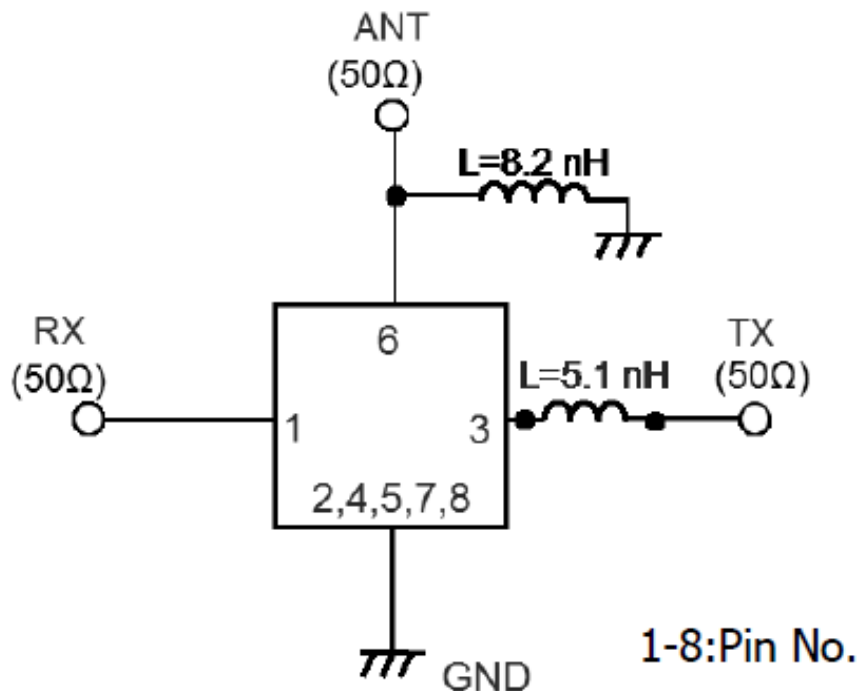
1~ 447 MHz	dB	50	75	-	
814.24 ~ 848.76 MHz	dB	45	55	-	
909 ~ 979 MHz	dB	10	22	-	
1427 ~ 2500 MHz	dB	45	50	-	
2577 ~ 6000 MHz	dB	38	47	-	
6013 ~ 6258 MHz	dB	20	44	-	

Tx to Rx

Isolation	814.24 ~ 848.76 MHz	dB	55	60	-	
	859.24 ~ 893.76 MHz	dB	52	57	-	

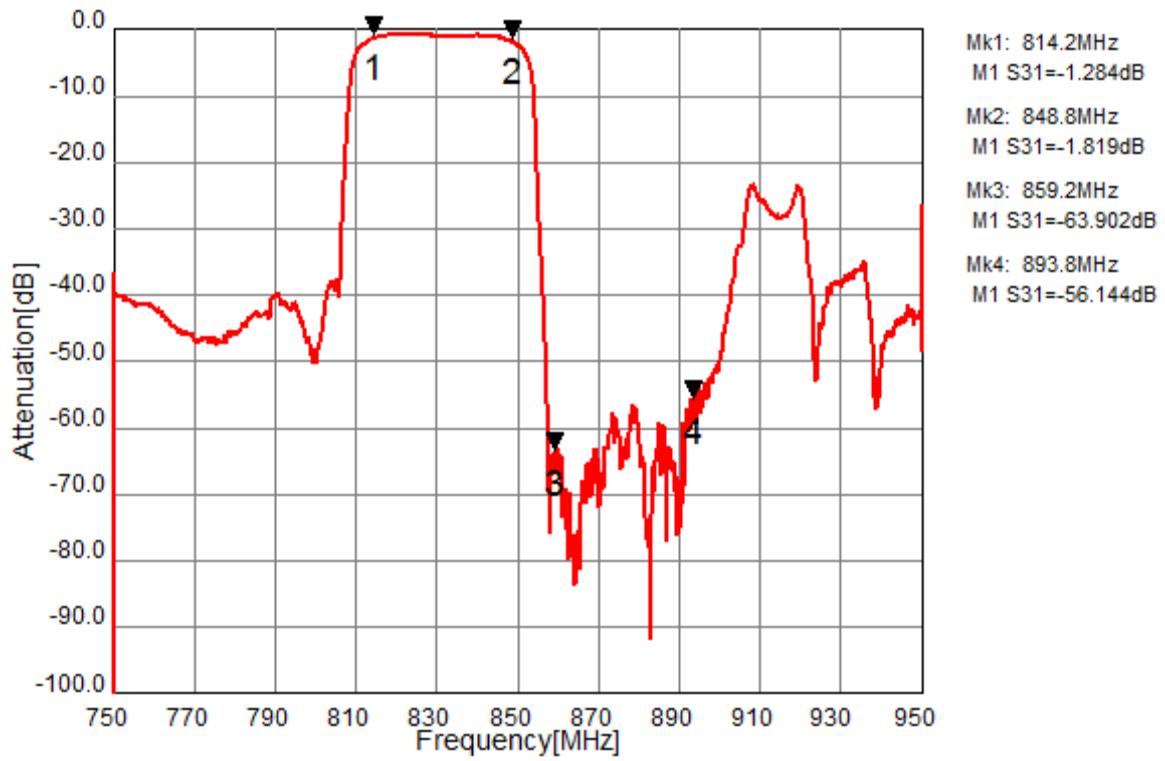
(*1) Specification of insertion loss excludes loss that comes from the test board.

Evaluation Circuit

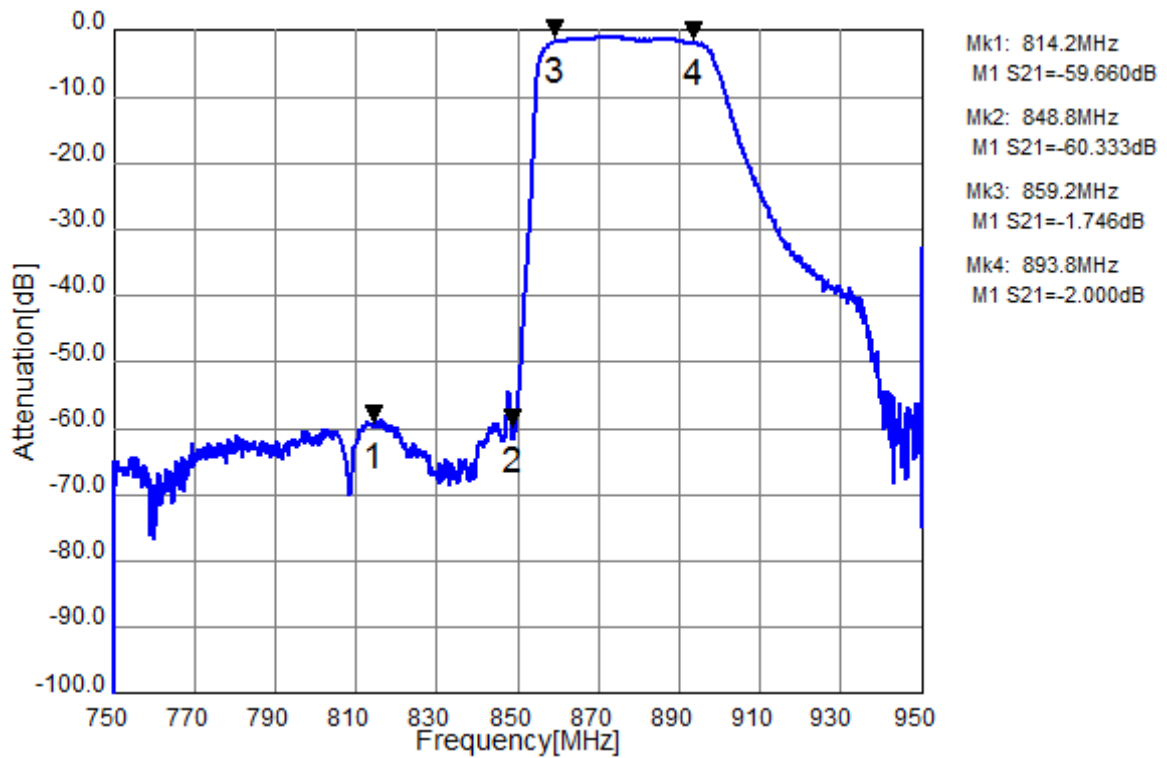


FREQUENCY CHARACTERISTICS:

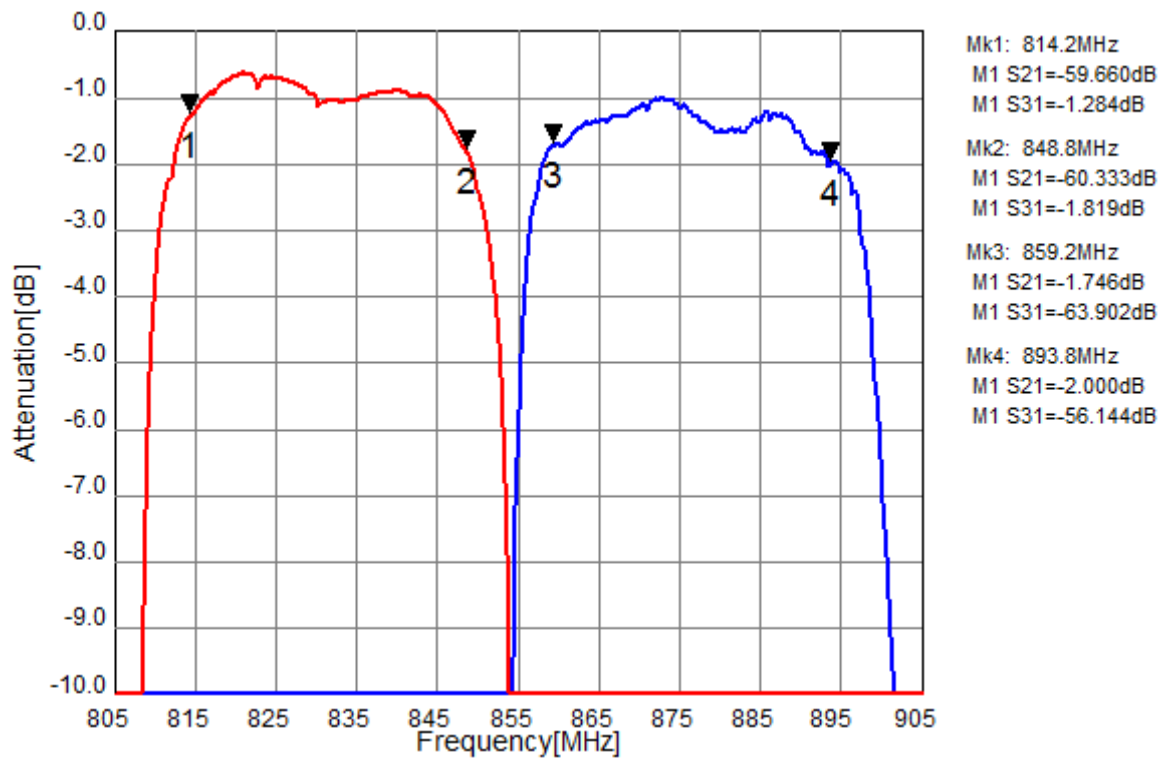
Tx to Ant



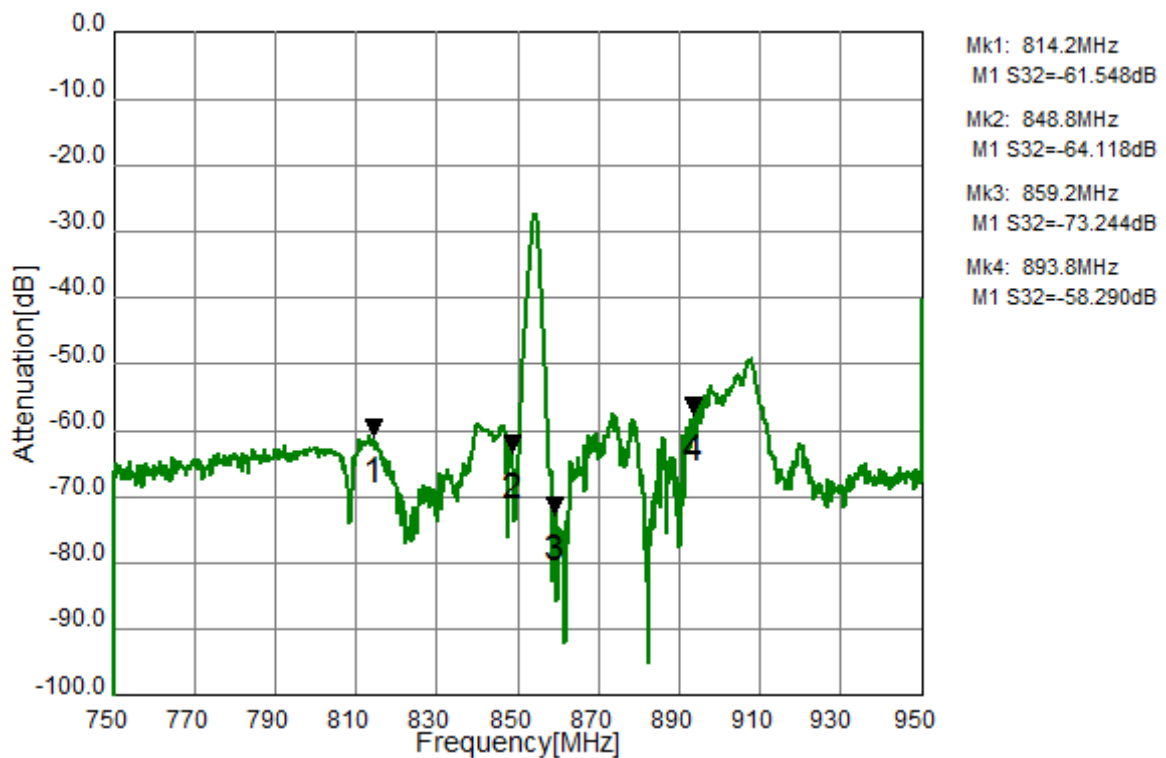
Ant to Rx



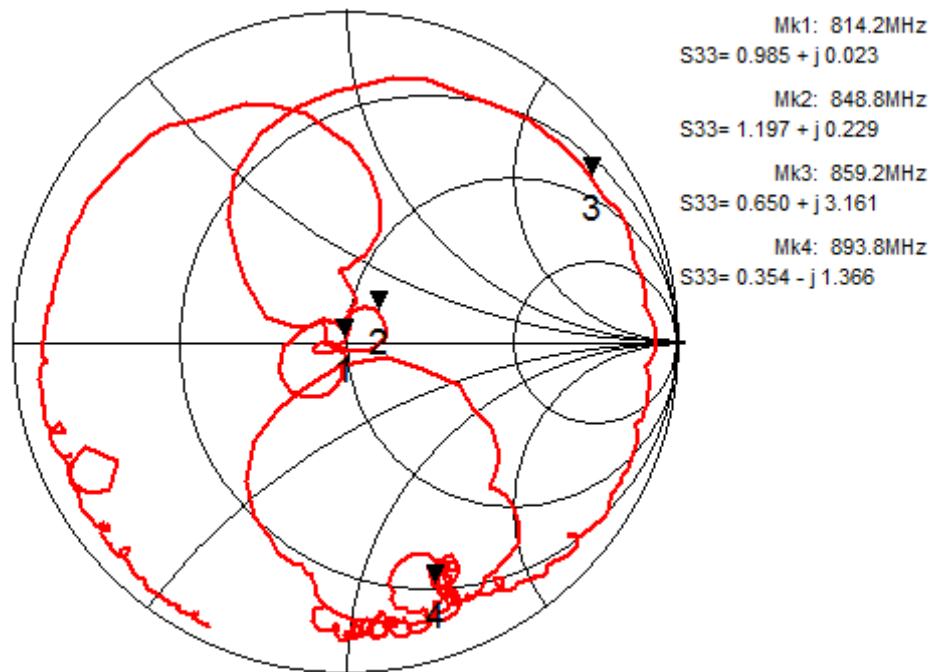
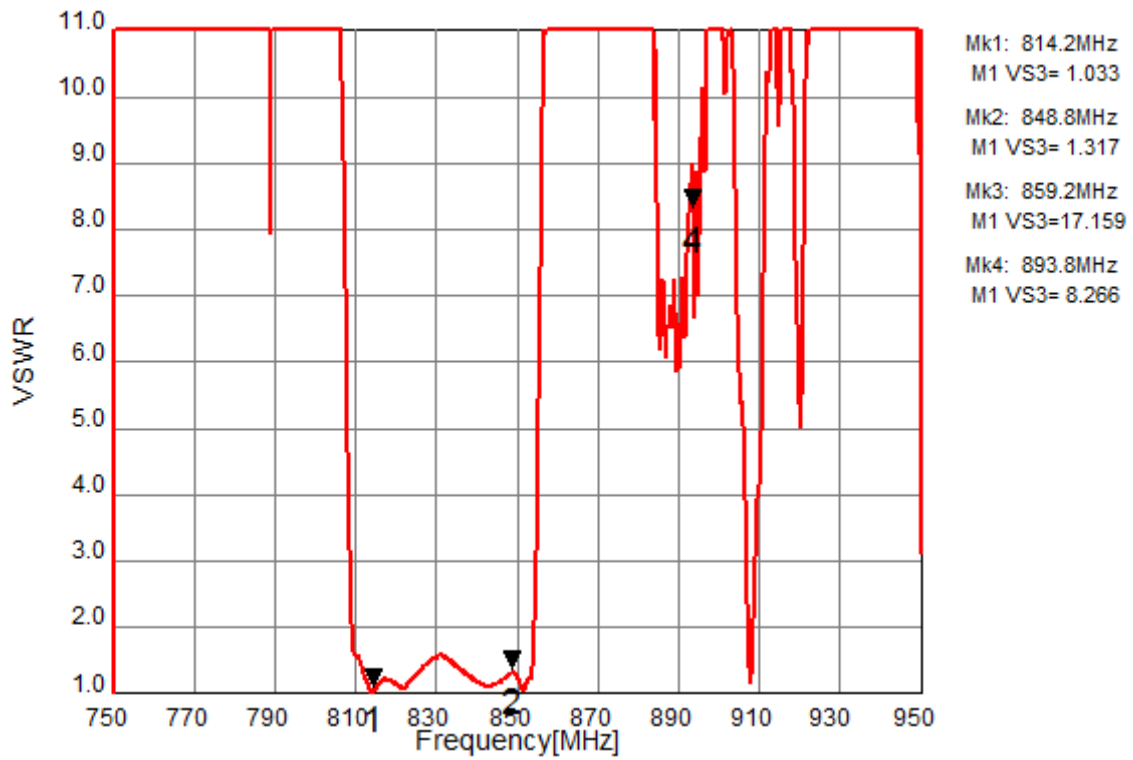
Tx to Ant, Ant to Rx



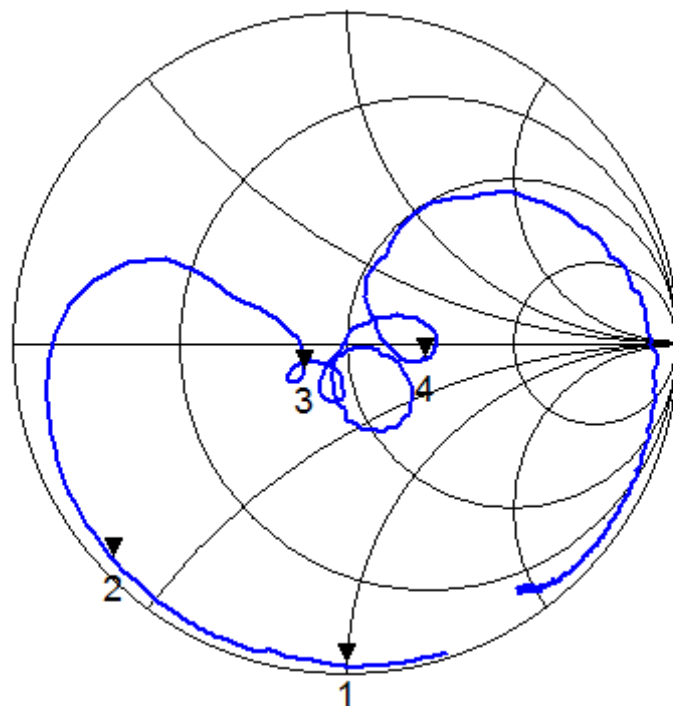
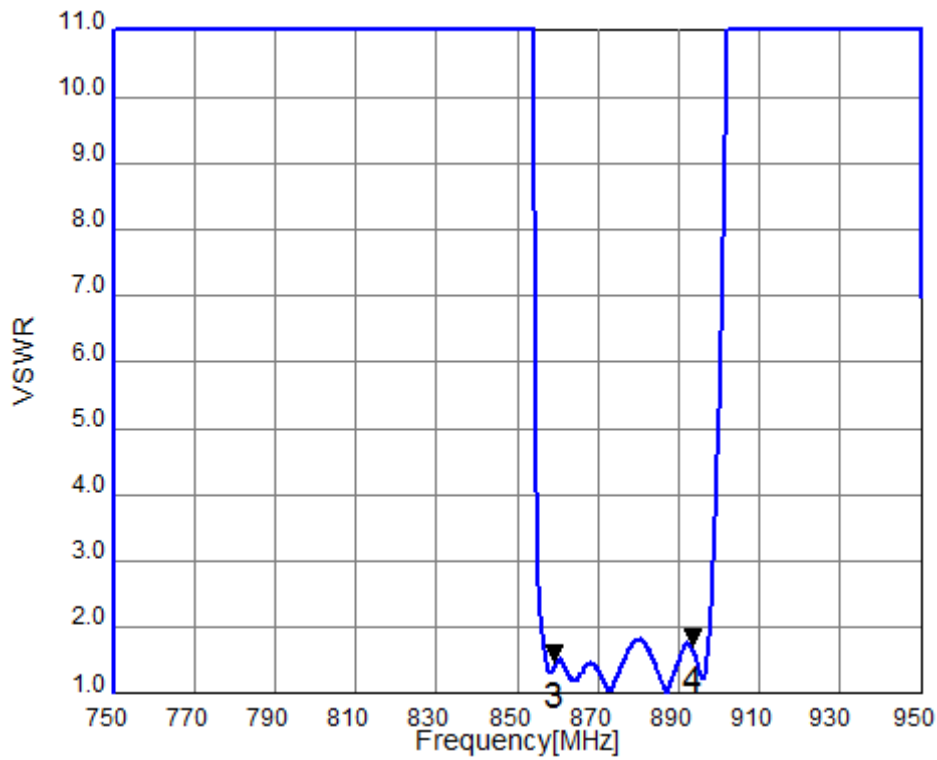
Tx to Rx Isolation



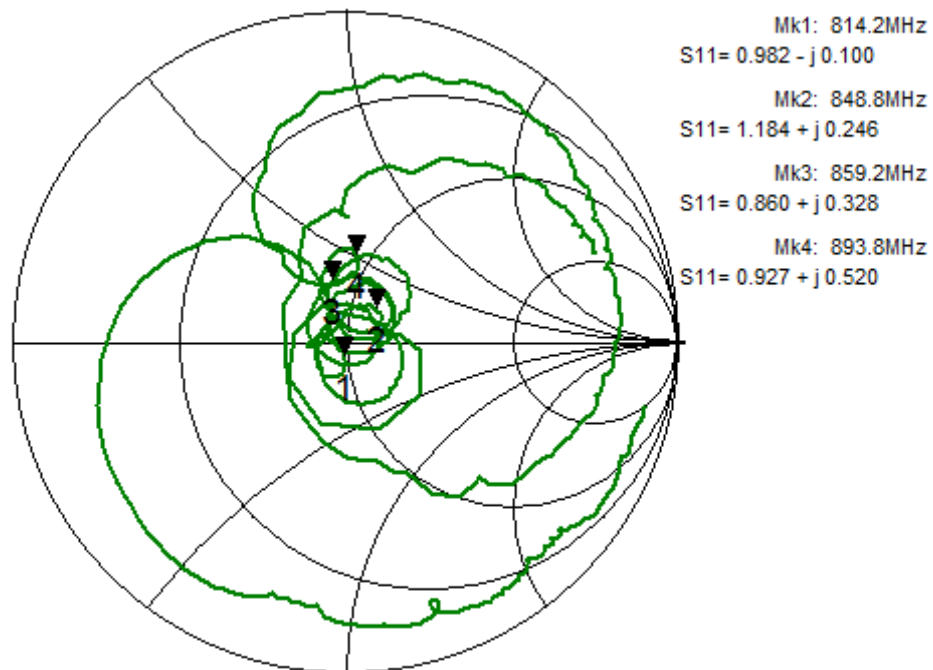
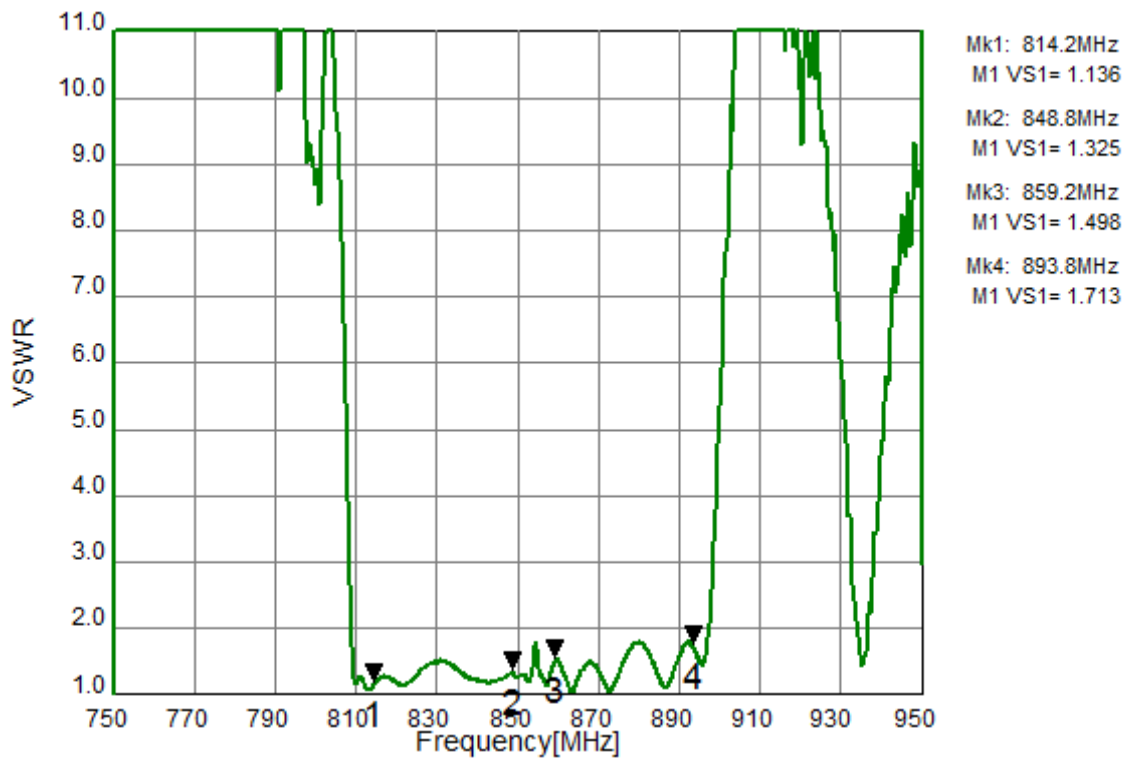
Tx Port



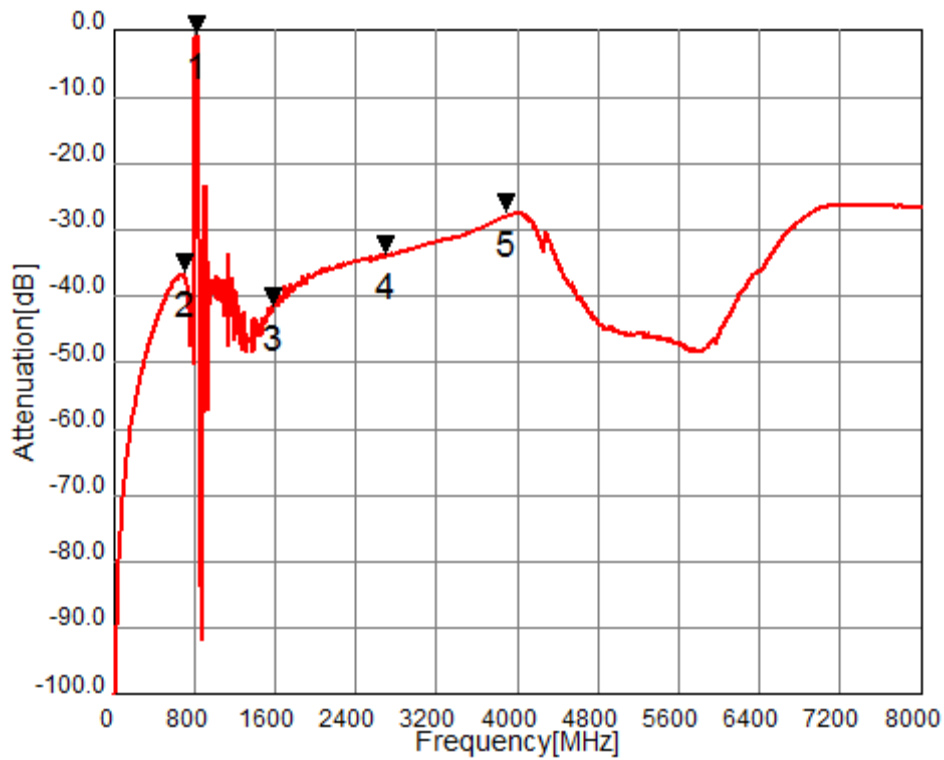
Rx Port



Ant Port



Tx to Ant (Wide Span)



Mk1: 831.5MHz
M1 S31=-1.052dB

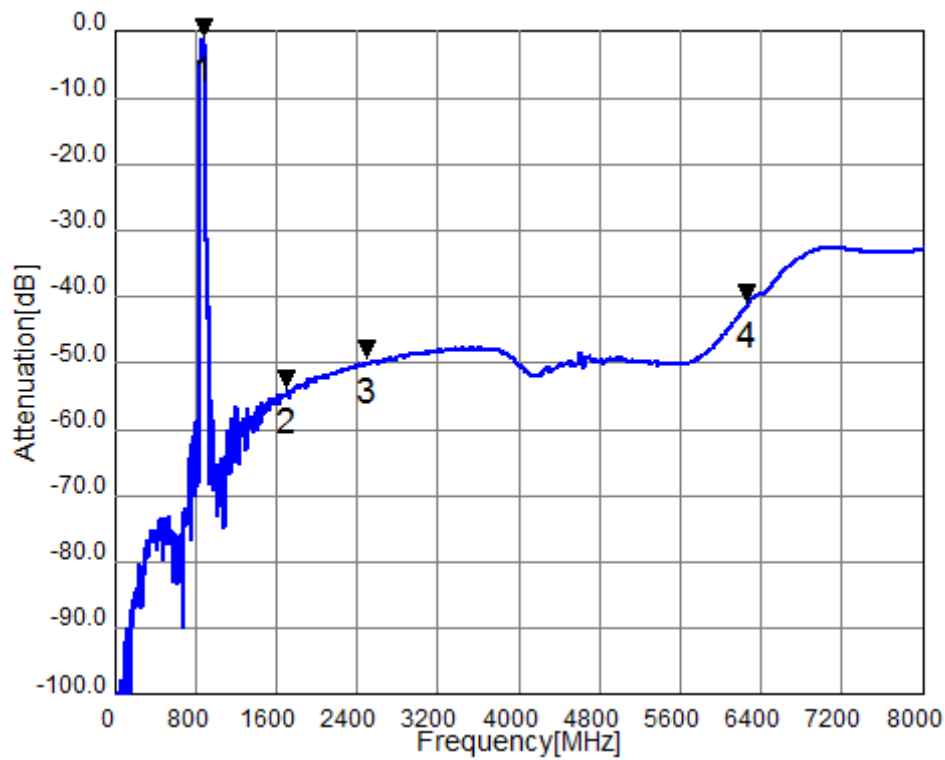
Mk2: 701.0MHz
M1 S31=-36.912dB

Mk3: 1575.0MHz
M1 S31=-42.167dB

Mk4: 2690.0MHz
M1 S31=-34.159dB

Mk5: 3900.0MHz
M1 S31=-27.871dB

Ant to Rx (Wide Span)



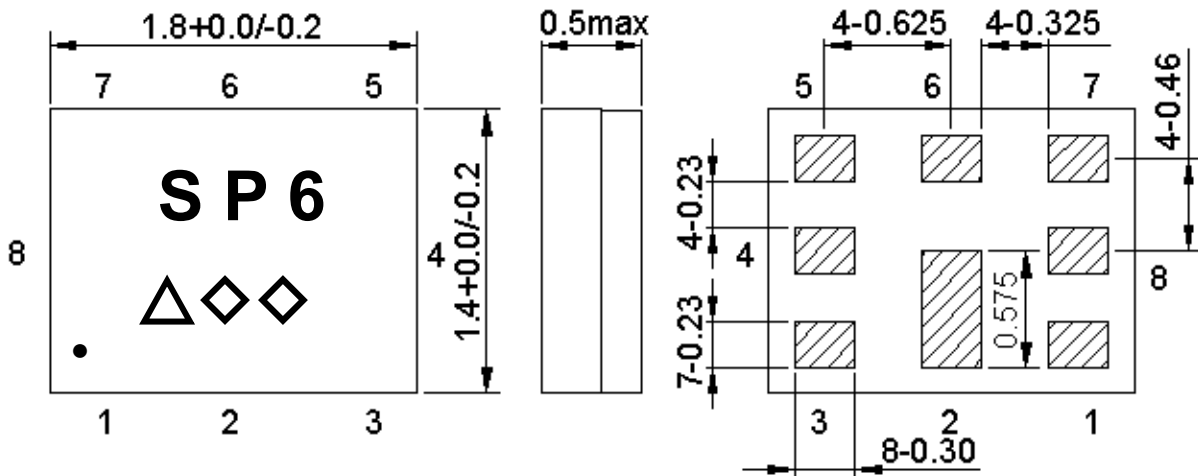
Mk1: 876.5MHz
M1 S21=-1.234dB

Mk2: 1710.0MHz
M1 S21=-54.509dB

Mk3: 2500.0MHz
M1 S21=-49.990dB

Mk4: 6258.0MHz
M1 S21=-41.432dB

OUTLINE DRAWING:
(Mass Production)



Marking name : **SP6**

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

◇◇: Lot Code.

Product Date Code. Follow below table.

Not Specified Tolerance : ± 0.05 mm

Coplanarity : 0.1 mm max.

1 to 8 : Pin No.

Unit : mm

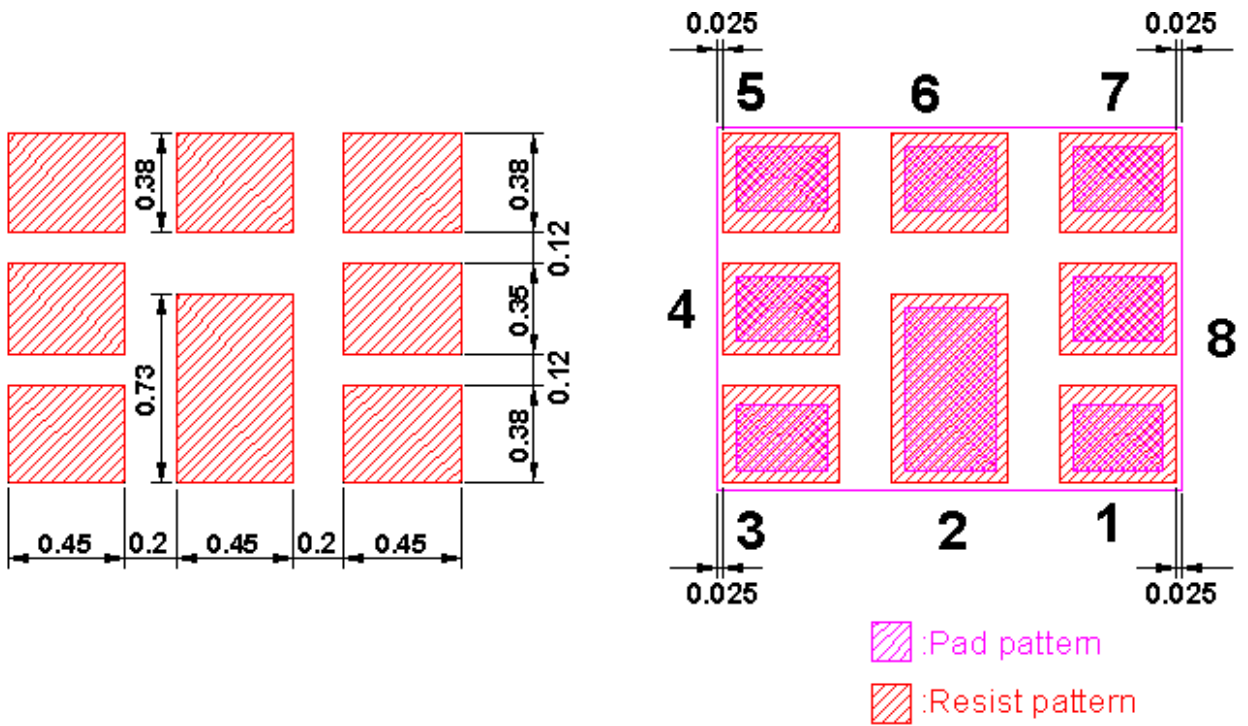
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	n	p	q	r	s	t	u	v	w	x	y	z
2017	A	B	C	D	E	F	G	H	J	K	L	M
2018	N	P	Q	R	S	T	U	V	W	X	Y	Z
2019	a	b	c	d	e	f	g	h	j	k	l	m

Pin assignment

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

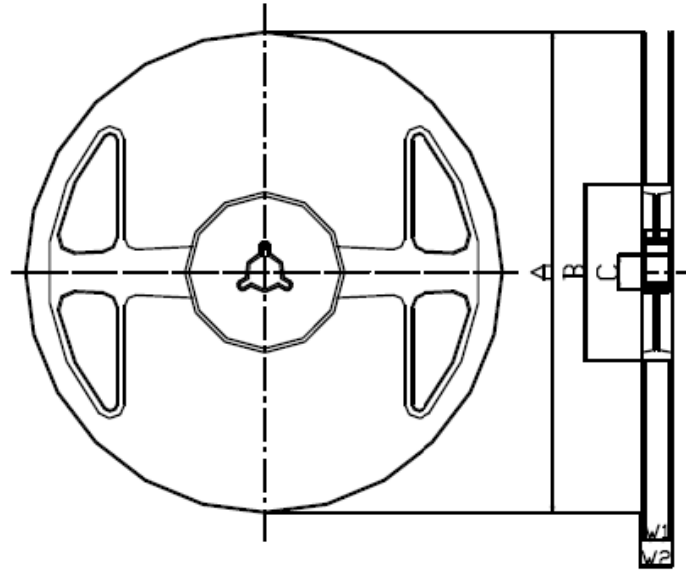
Figure 1. Dimensions and Pin assignment

FOOTPRINT:



PACKING:
REEL DIMENSION

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



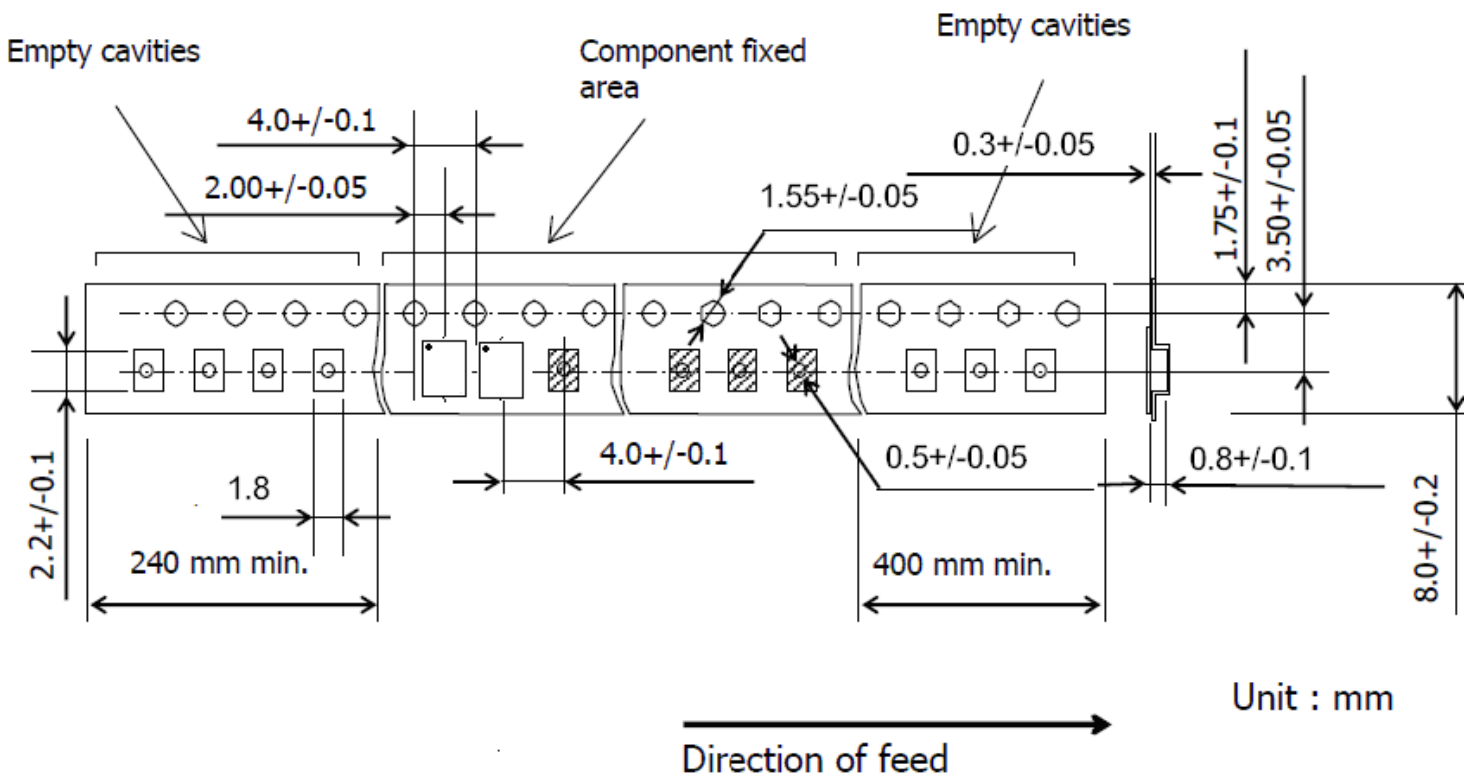
Materials of Reel

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	$\phi 180.0 +0.0/-1.5$	$\phi 66.0 +/-0.5$	$\phi 13.0 +/-0.2$	$9.0 +1.0/-0.0$	$11.4 +/-1.0$

TAPE DIMENSION



Unit : mm

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. 10sec).
4. Time : 2 times.

