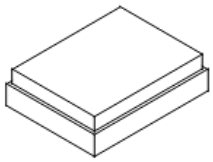
RFMi
BRAND OF AKOUSTIS

RoHS compliant

SF2599NA

847/806 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//10nH Ω (Single-ended)

Tx to ANT

Parameters Description			Unit	Minimum	Typical	Maximum	Note
Insertion Loss		832.25~ 861.75 MHz	dB(*1)	-	1.8	2.5	
Ripple		832~ 862 MHz	dB	-	1.0	1.8	
VSWR	ANT	832~ 862 MHz	-	-	1.6	2.0	
	Tx		-	-	1.7	2.0	
Attenuation:							
791.25 ~ 820.75 MHz			dB	45	54	-	-
1565 ~ 1606 MHz			dB	45	57	-	-
1664 ~ 1724 MHz			dB	40	55	-	-
2400 ~ 2586 MHz			dB	35	44	-	-

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

Parameters Description			Unit	Minimum	Typical	Maximum	Note
Insertion Loss		791.25 ~ 820.75 MHz	dB(*1)	-	1.8	3.0	
Ripple)		791~ 821 MHz	dB	-	0.9	2.3	
VSWR	ANT	791~ 821 MHz	-	-	1.7	2.3	
	Rx		-	-	1.8	2.2	
Attenuation:							
832.25 ~ 861.75 MHz			dB	45	53	-	-
1623 ~ 1683 MHz			dB	35	47	-	-
2400 ~ 2545 MHz			dB	30	43		

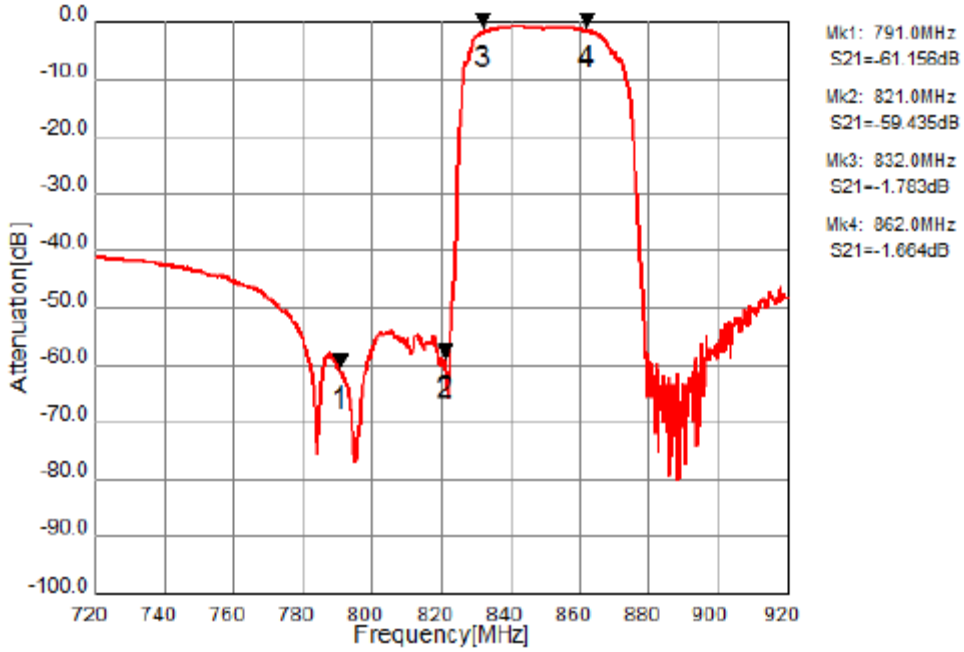
Tx to Rx

Isolation	832.25 ~ 861.75 MHz	dB	50	55	-	
	791.25 ~ 820.75 MHz	dB	53	56	-	

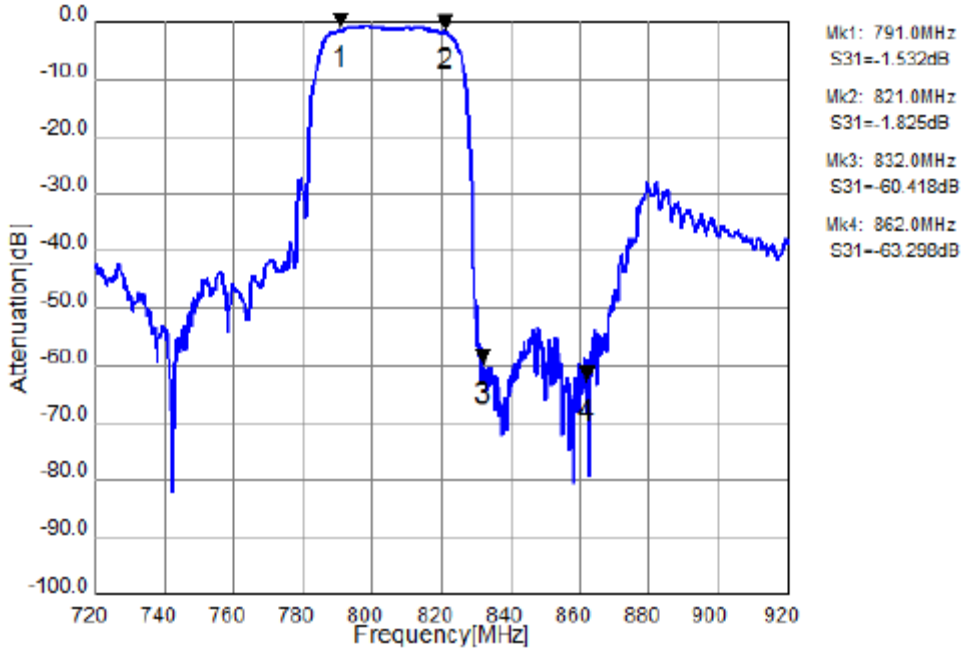
(*1) Specification of insertion loss excludes loss that comes from the test board.

Frequency Characteristics:

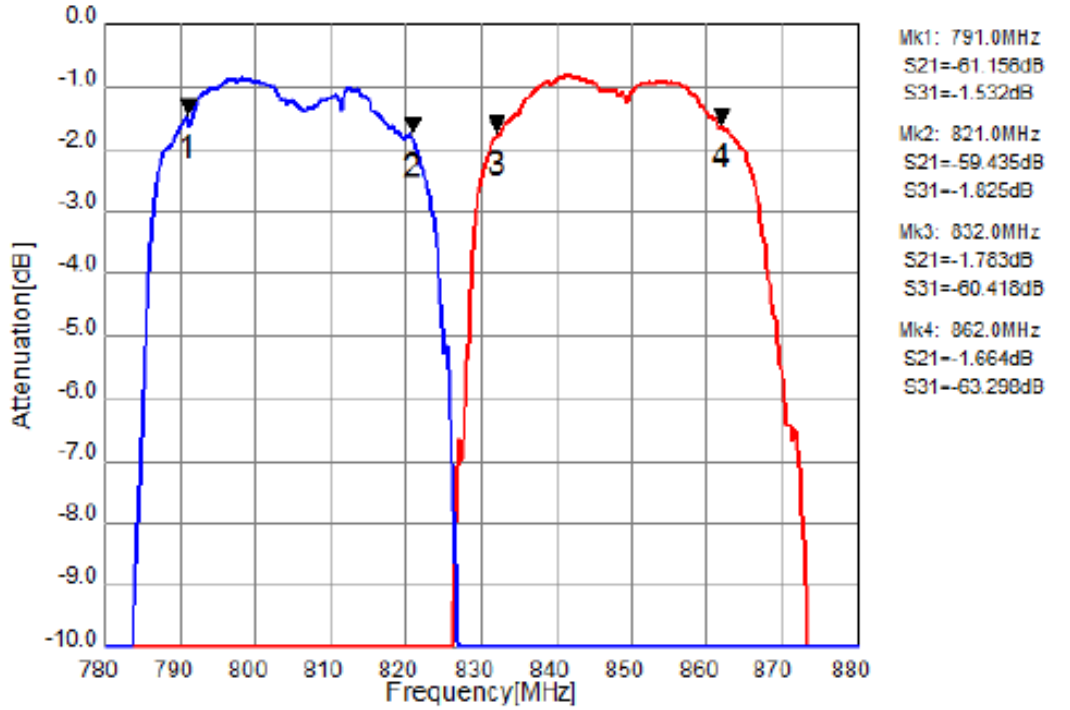
Tx to Ant



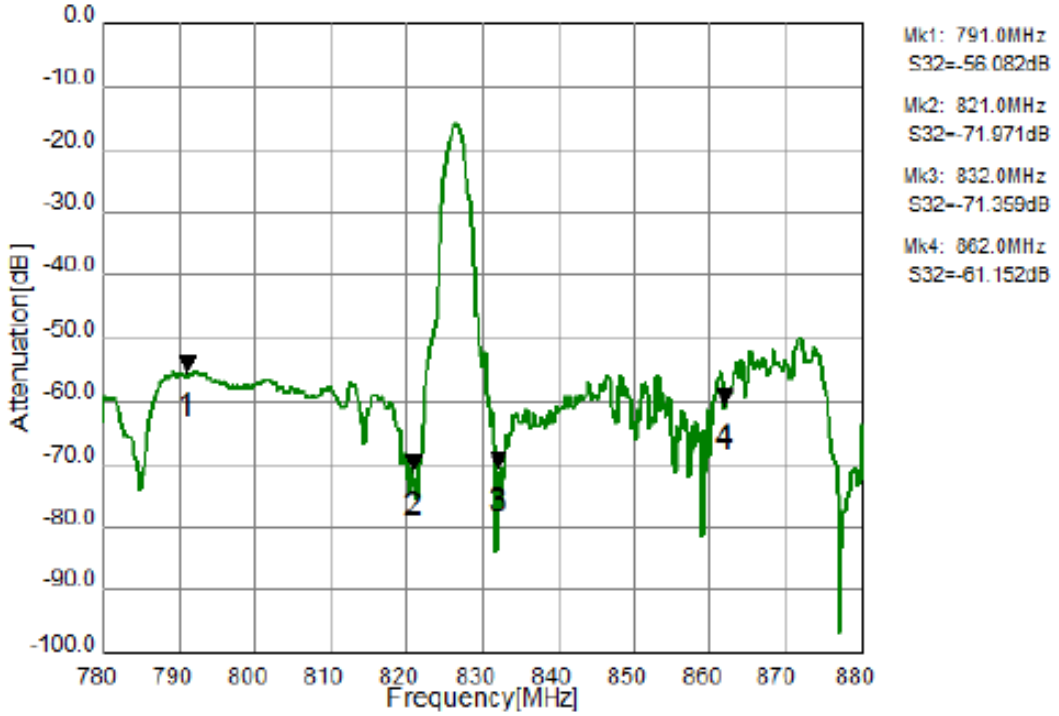
Ant to Rx



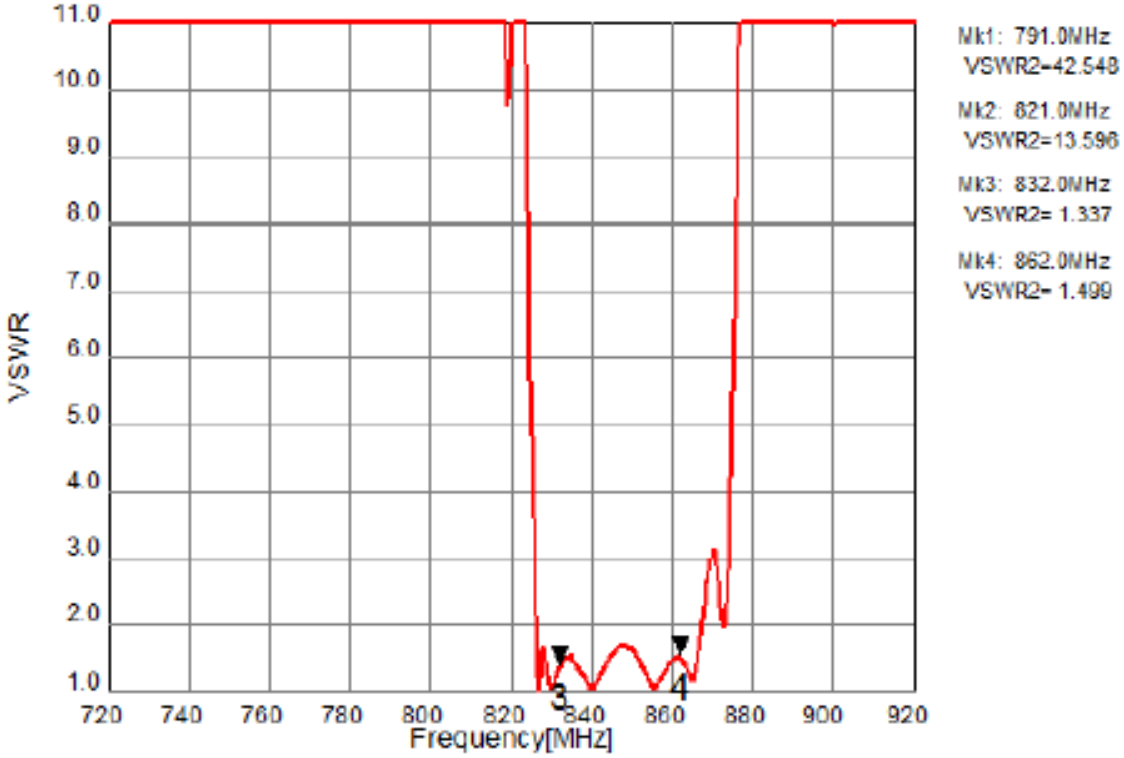
Ant to Rx, Tx to Ant

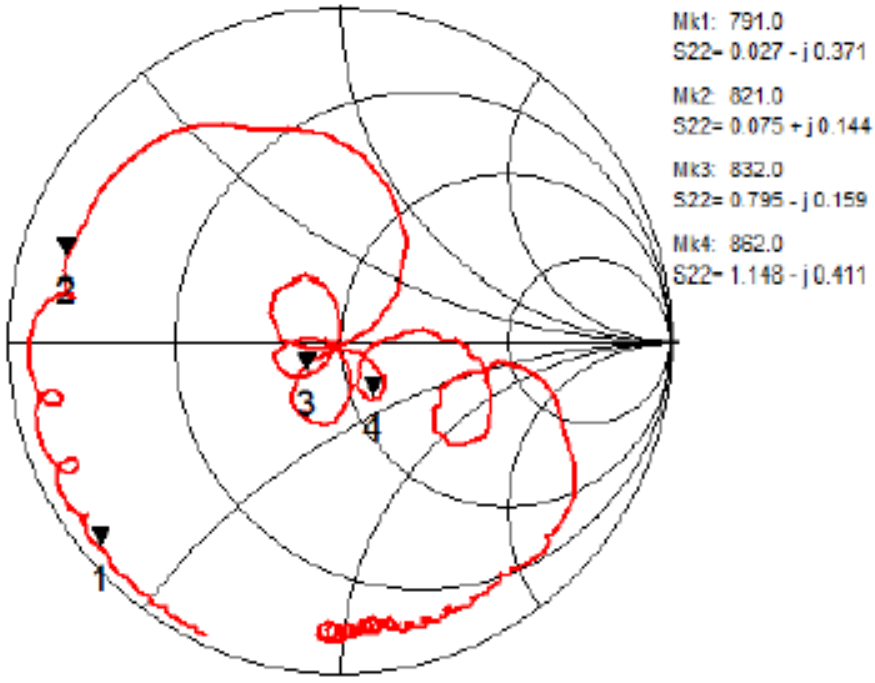


Tx to Rx Isolation

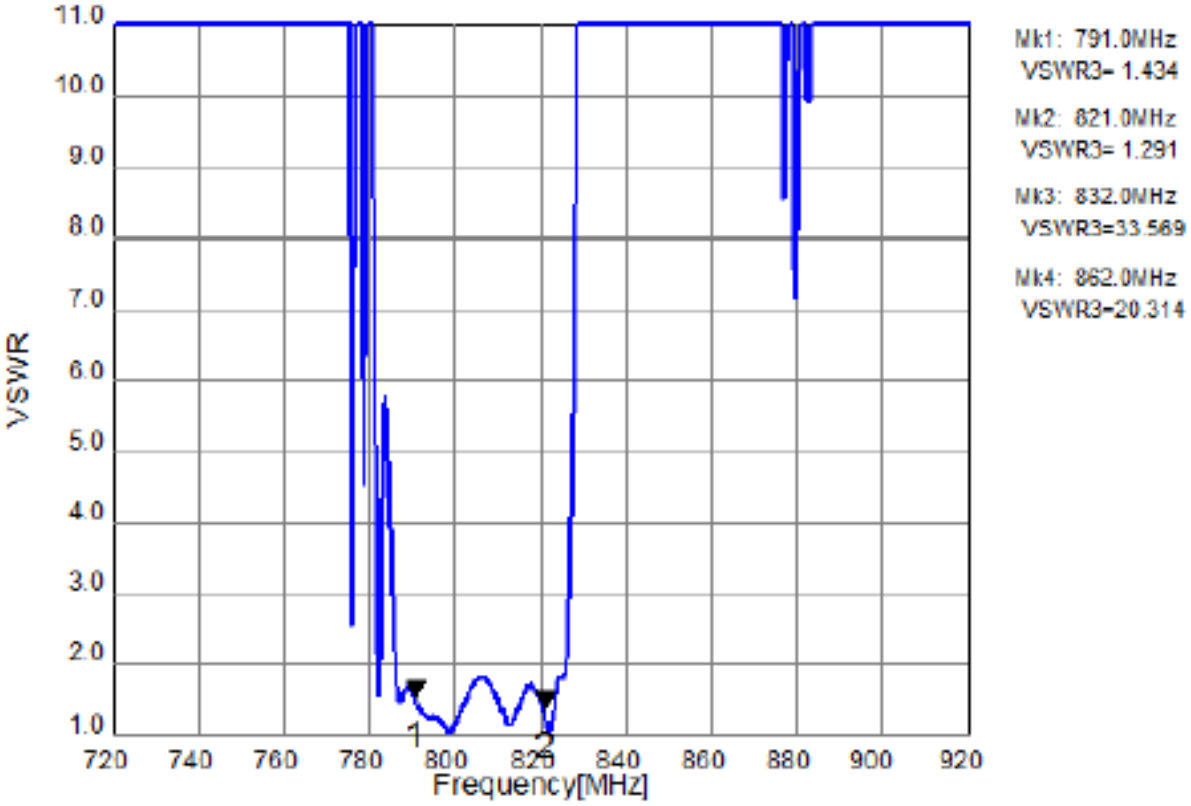


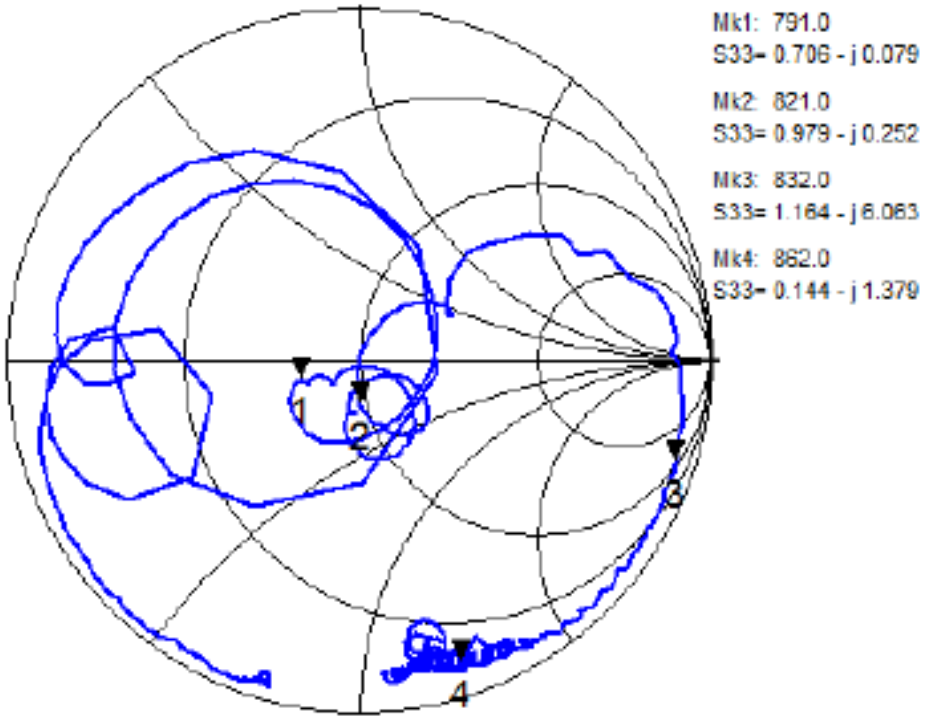
Tx Port


11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
VSWR
720
740
760
780
800
820
840
860
880
900
920
Frequency[MHz]
Mk1: 791.0MHz
VSWR2=42.548
Mk2: 821.0MHz
VSWR2=13.596
Mk3: 832.0MHz
VSWR2= 1.337
Mk4: 862.0MHz
VSWR2= 1.499

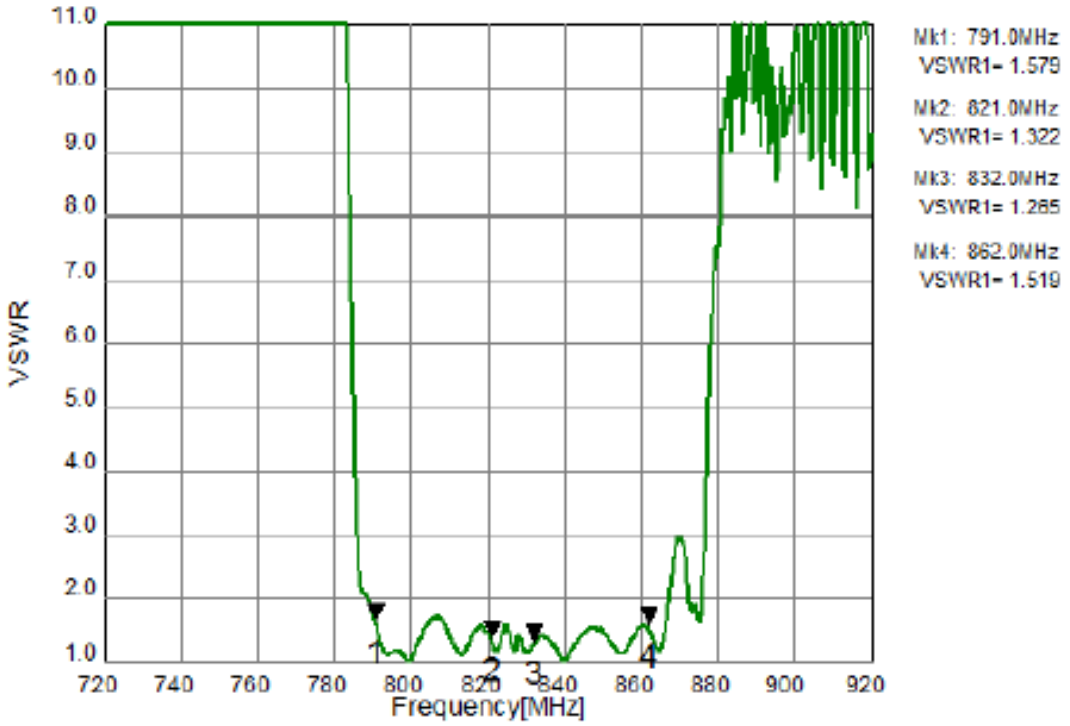

Mk1: 791.0
S22= 0.027 - j 0.371
Mk2: 821.0
S22= 0.075 + j 0.144
Mk3: 832.0
S22= 0.795 - j 0.159
Mk4: 862.0
S22= 1.148 - j 0.411

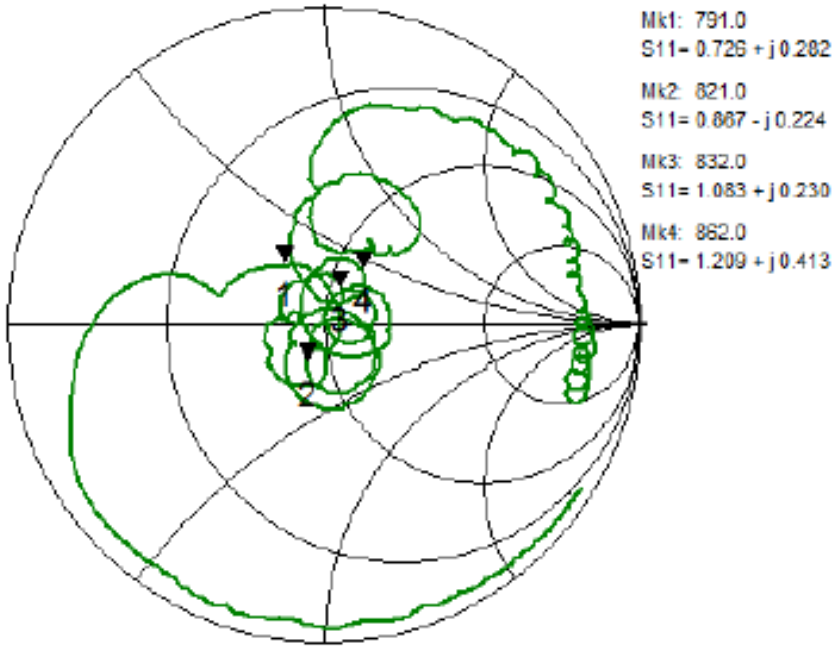
Rx Port


11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
VSWR
720
740
760
780
800
820
840
860
880
900
920
Frequency[MHz]
1
2
Mk1: 791.0MHz
VSWR3= 1.434
Mk2: 821.0MHz
VSWR3= 1.291
Mk3: 832.0MHz
VSWR3=33.569
Mk4: 862.0MHz
VSWR3=20.314

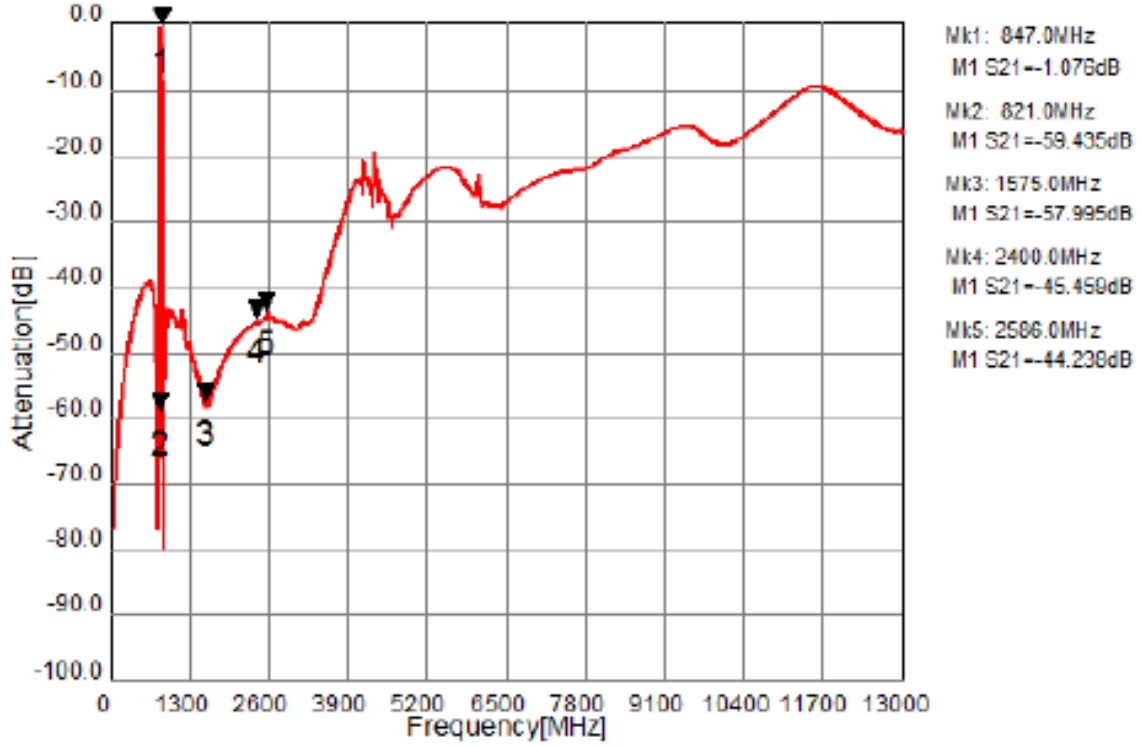

1
2
3
4
Mk1: 791.0
S33= 0.706 - j 0.079
Mk2: 821.0
S33= 0.979 - j 0.252
Mk3: 832.0
S33= 1.164 - j 6.063
Mk4: 862.0
S33= 0.144 - j 1.379

Ant Port

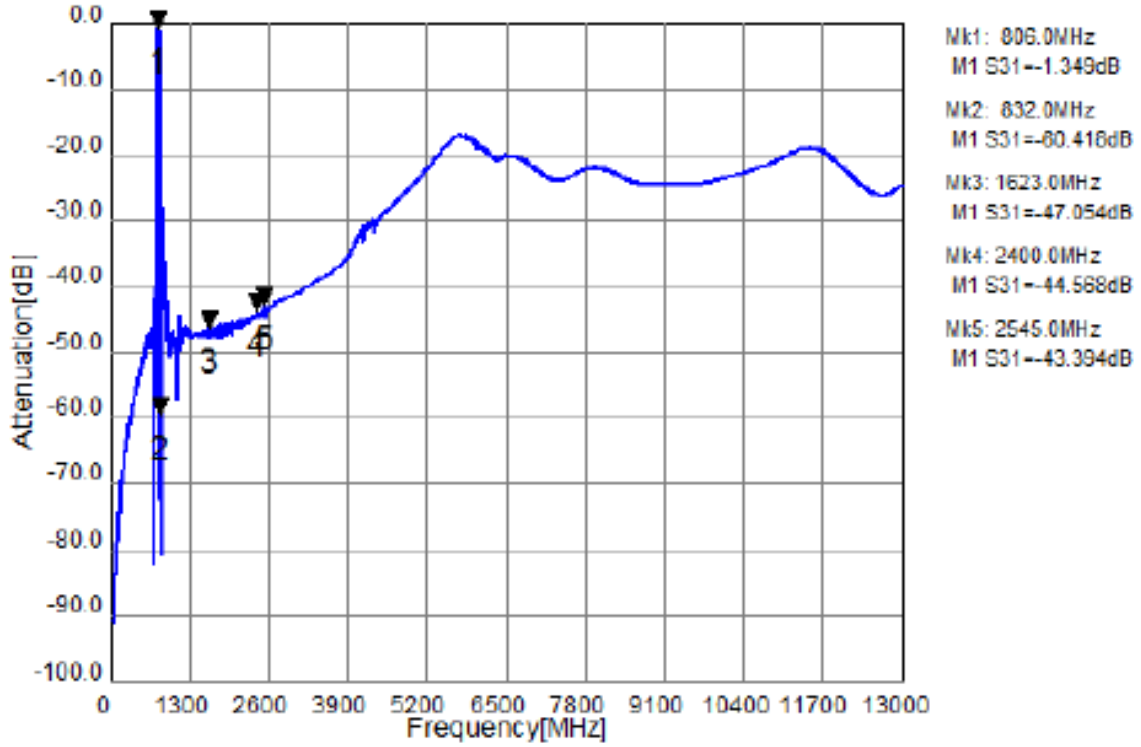

11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
VSWR
720
740
760
780
800
820
840
860
880
900
920
Frequency[MHz]
Mk1: 791.0MHz
VSWR1= 1.579
Mk2: 821.0MHz
VSWR1= 1.322
Mk3: 832.0MHz
VSWR1= 1.265
Mk4: 862.0MHz
VSWR1= 1.519


Mk1: 791.0
S11= 0.726 + j 0.282
Mk2: 821.0
S11= 0.667 - j 0.224
Mk3: 832.0
S11= 1.083 + j 0.230
Mk4: 862.0
S11= 1.209 + j 0.413

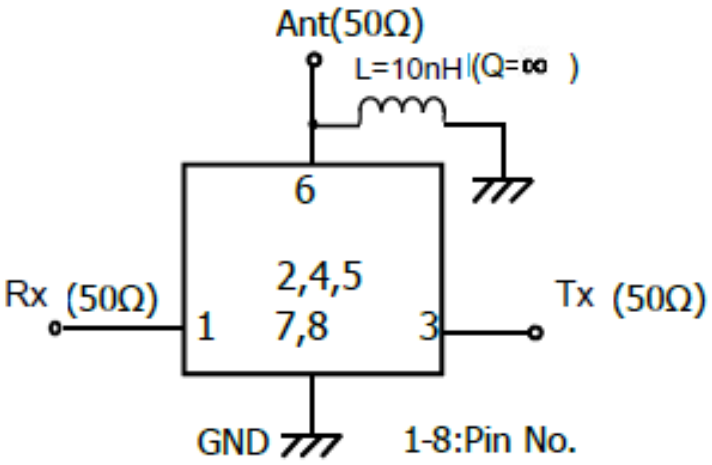
Tx to Ant (Wide span)



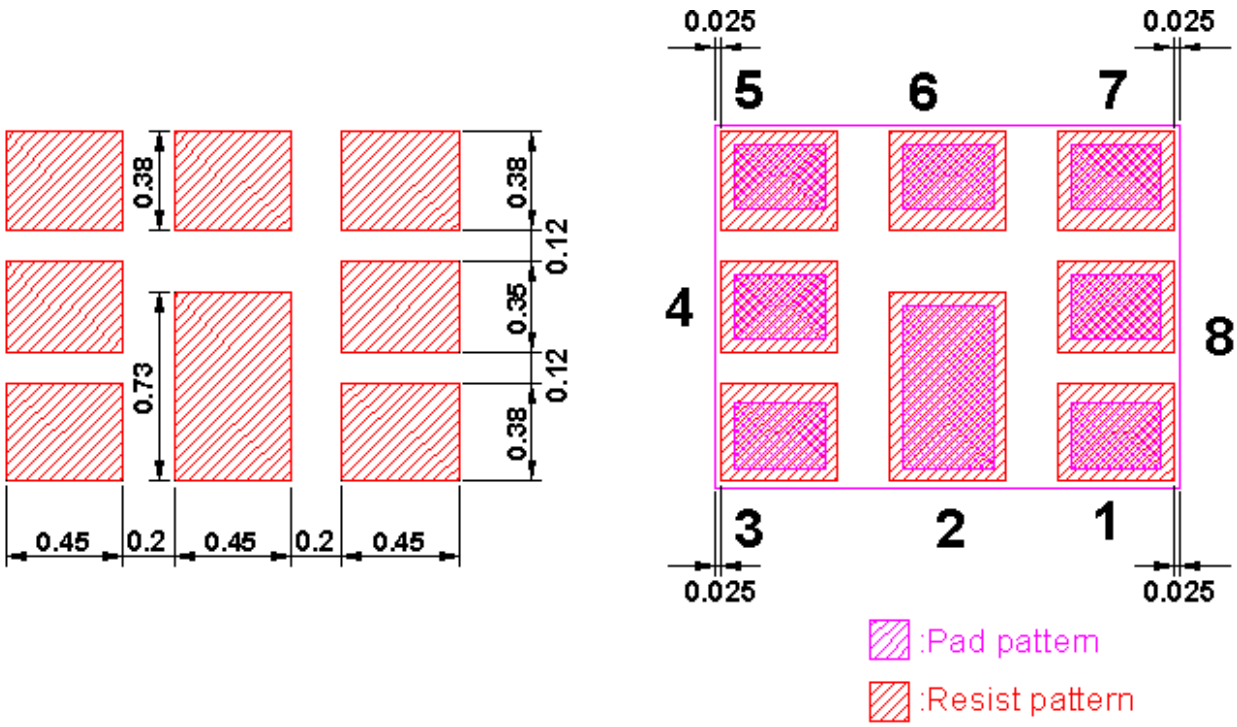
Ant to Rx (Wide span)



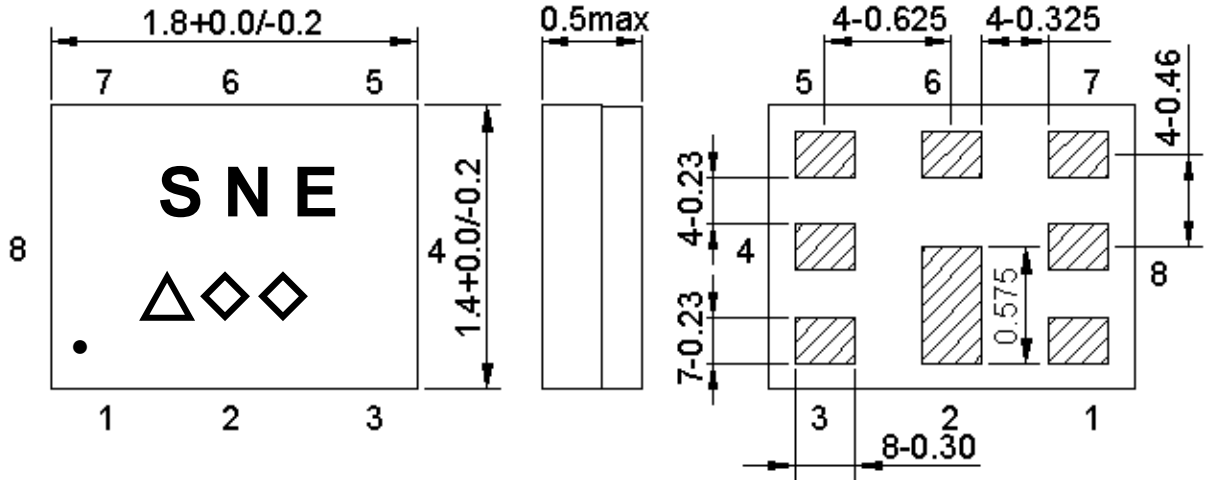
MEASUREMENT CIRCUIT:



FOOTPRINT:



OUTLINE DRAWING: (Mass Production)



Not Specified Tolerance : +/-0.05 mm
Coplanarity : 0.1 mm max.
1 to 8 : Pin No.
Unit : mm

Marking name : **SNE**
△: Date code(2016 May → s ,……., 2019 Dec→m.)
◇◇: Lot Code.
Product Date Code. Follow below table.
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
2018	N	P	Q	R	S	T	U	V̄	W	X	Y	Z
2019	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
2021	A	B	C	D	E	F	G	H	J	K	L	M

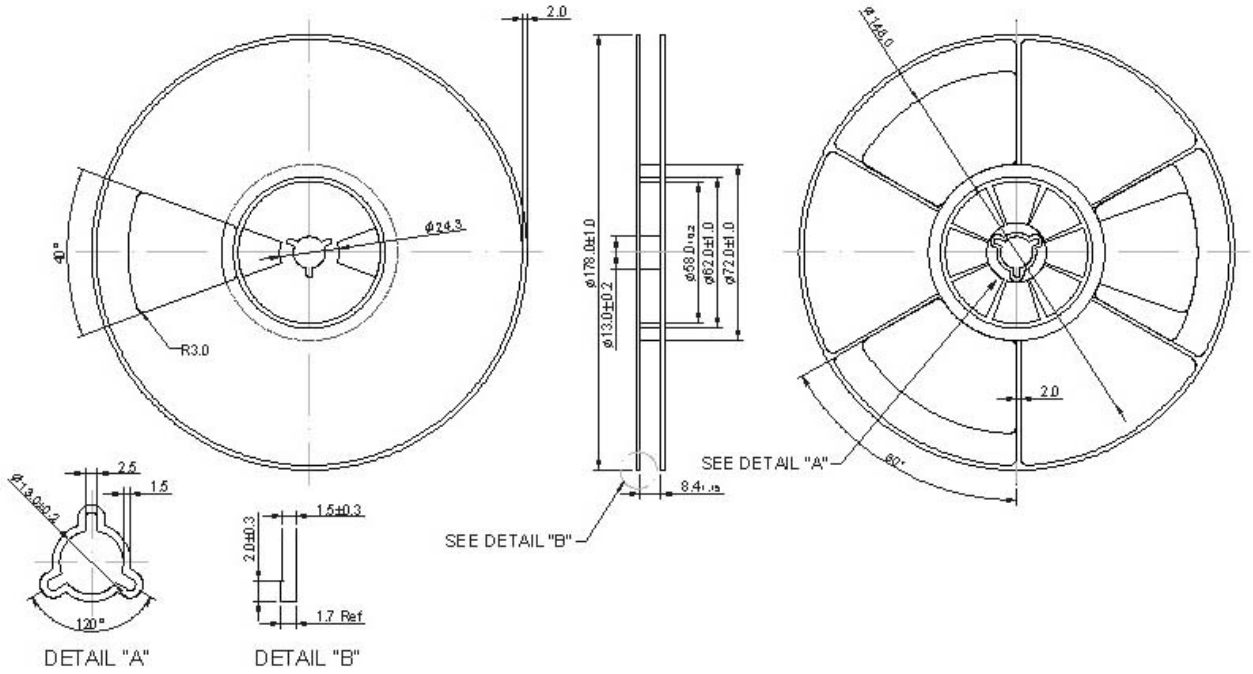
Pin Configuration

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

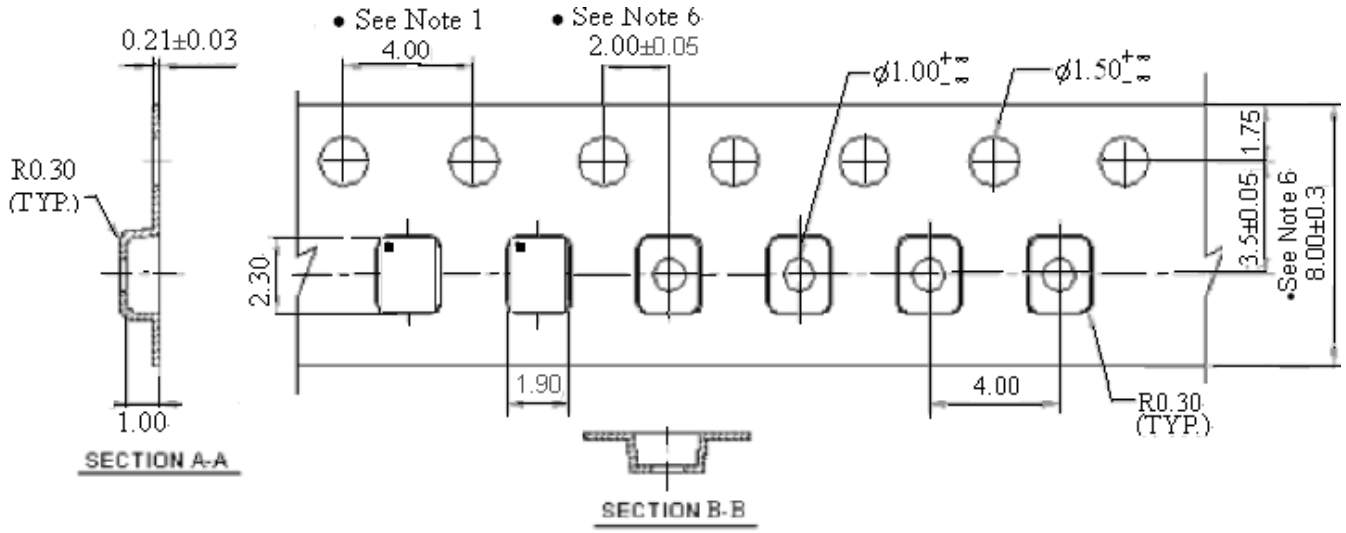
PACKING:

REEL DIMENSION

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



TAPE DIMENSION



RECOMMENDED REFLOW PROFILE:

1. Preheating shall be fixed at 150~180℃ for 60~90 seconds.
2. Ascending time to preheating temperature 150℃ shall be 30 seconds min.
3. Heating shall be fixed at 220℃ for 50~80 seconds and at 260℃+0/-5℃ peak (20~40sec).
4. Time: 2 times.