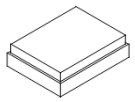
RFMi
A BRAND OF AKOUSTIS

RoHS compliant

Automotive grade product

SF2535NA

1950/2140 MHz SAW Duplexer



SM1814-8

- ***Complies with Directive per ANSI/EIA-481***
- ***AEC-Q200 Qualified***
- ***Use for LTE Band 1***

Maximum Rating

1. Operating temperature range: -40 °C to +85 °C
2. Storage temperature range: -55 °C to +125 °C
3. Input power : 29dBm (Ta=+50deg C,10kh,CW)
4. Maximum DC Voltage: +/-3 V
5. Moisture Sensitivity Level: 1
6. ESD 50V(MM) 100V(HBM)

Electrical Characteristics

Terminating impedance (Tx Port): 50 Ω (Single-ended)
Terminating impedance (Rx Port): 50 Ω (Single-ended)
Terminating impedance (Ant Port): 50//2.7nH Ω (Single-ended)

Tx to ANT (f_{T0}=1950 MHz)

Parameters Description			Unit	Min	Typ	Max	Remarks
Insertion Loss		1920.48~1979.52MHz	dB(*1)	-	1.8	2.2	
Amplitude ripple		1920.48~1979.52MHz	dB	-	0.6	1.2	
VSWR	Tx	1920.48~1979.52MHz	-	-	1.8	2.2	
	ANT		-	-	1.5	2.0	
Attenuation:							
1559~1563 MHz			dB	38	41	-	
1565~1606 MHz			dB	38	41	-	
1805~1880 MHz			dB	10	25	-	
2110~2170 MHz			dB	42	50	-	
2400~2500 MHz			dB	33	37	-	
3840~3960 MHz			dB	25	29	-	

ANT to Rx (f_{T0}=2140 MHz)

Parameters Description			Unit	Min	Typ	Max	Remarks
Insertion Loss		2110.48~2169.52MHz	dB(*1)	-	1.8	2.2	
Amplitude ripple		2110.48~2169.52MHz	dB	-	0.6	1.2	
VSWR	ANT	2110.48~2169.52MHz	-		1.6	2.0	
	Rx		-		1.6	2.1	
Attenuation:							
190 MHz			dB	50	81	-	
1730~1790 MHz			dB	40	46	-	
1920~1980 MHz			dB	45	49	-	
1980~2015 MHz			dB	15	49	-	
2015~2075 MHz			dB	18	28	-	
2400~2500 MHz			dB	35	40		
4030~4150 MHz			dB	35	44		
5950~6130 MHz			dB	33	41		

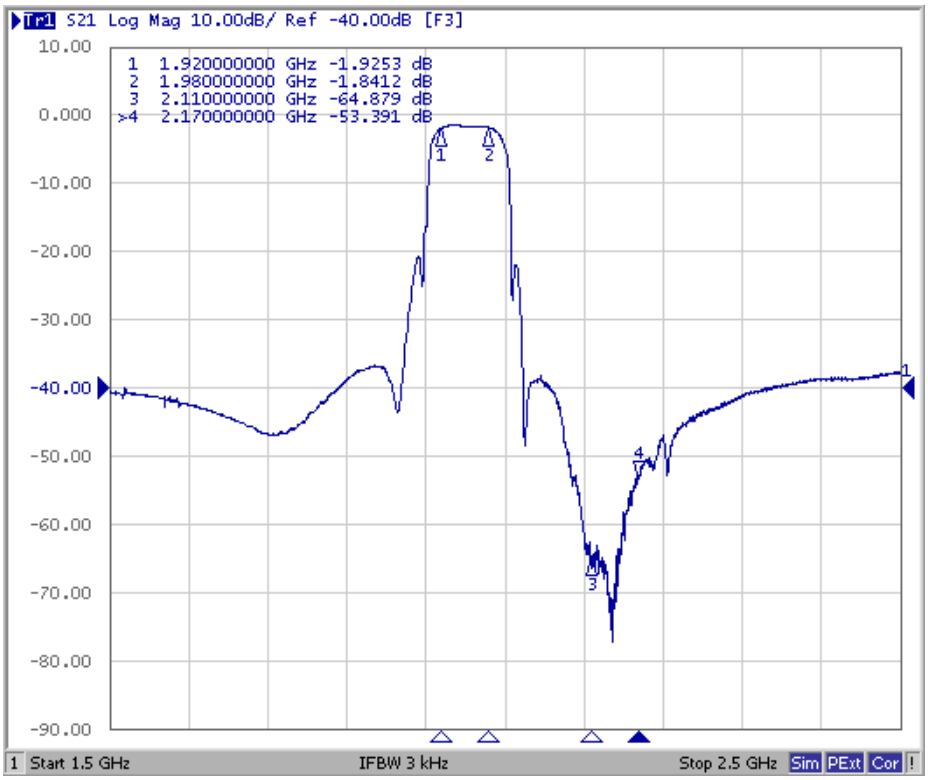
Tx to Rx

Isolation	1920.48~1979.52 MHz	dB	53	56	-	
			53	57	-	
	2110.48~2169.52 MHz	dB	49	51	-	
			51	55	-	

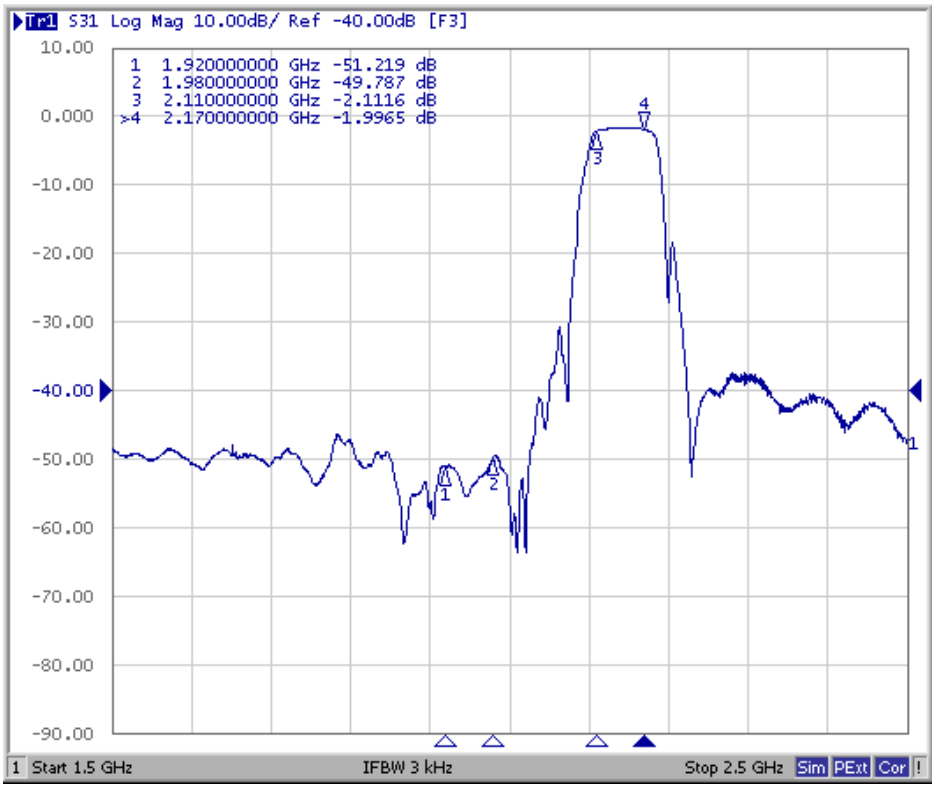
(*1) Specification of insertion loss excludes loss that comes from the test board.

Frequency Characteristics

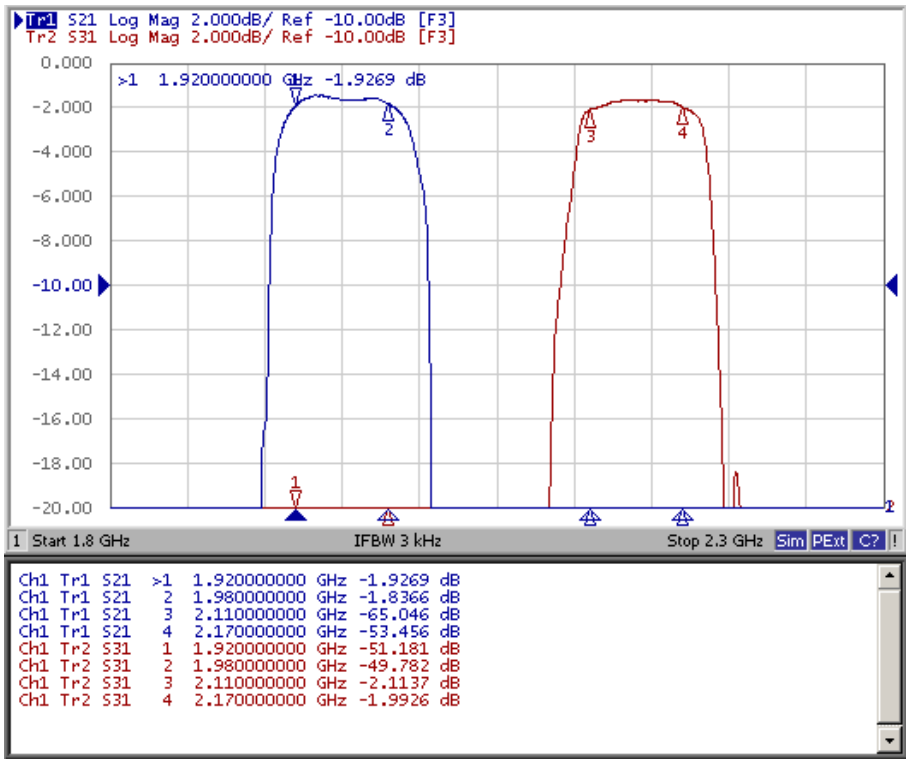
Tx to Ant



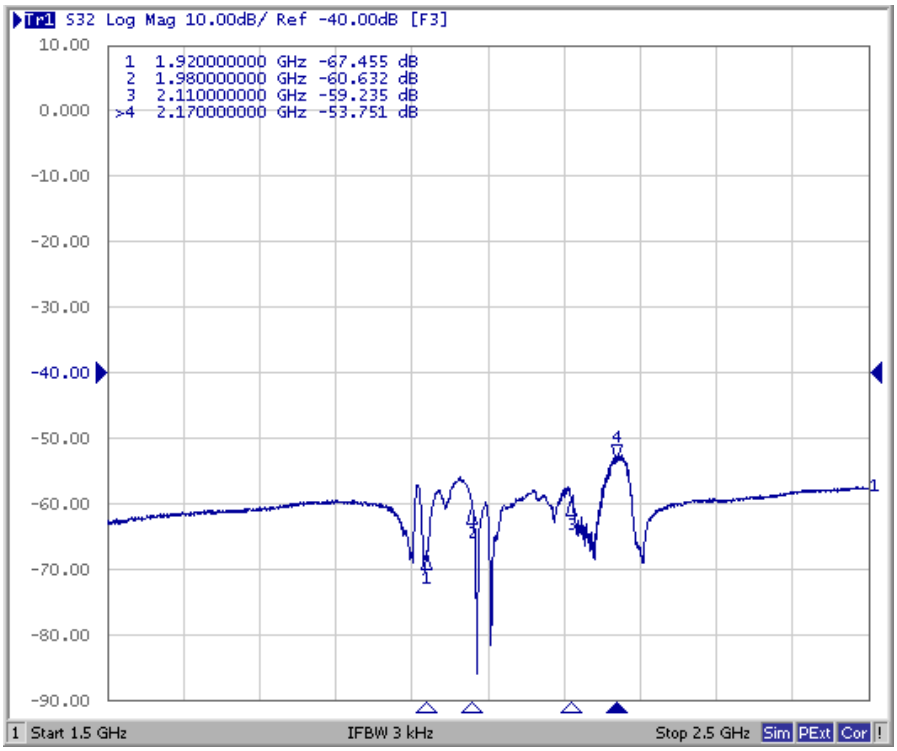
Ant to Rx



Tx to Ant ,Ant to Rx

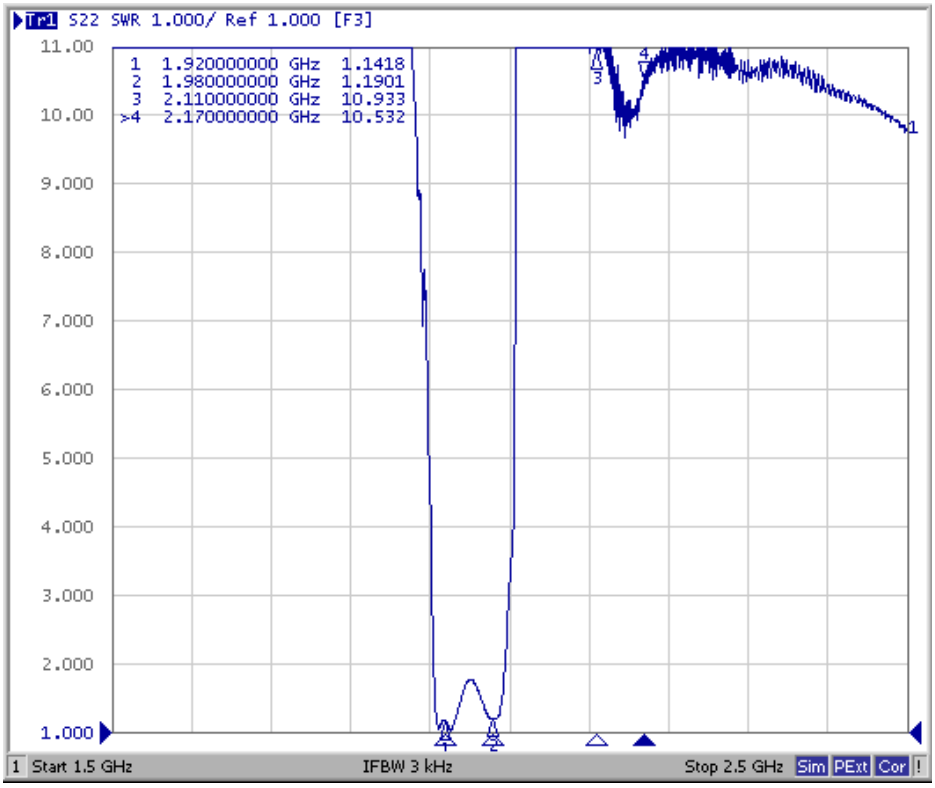


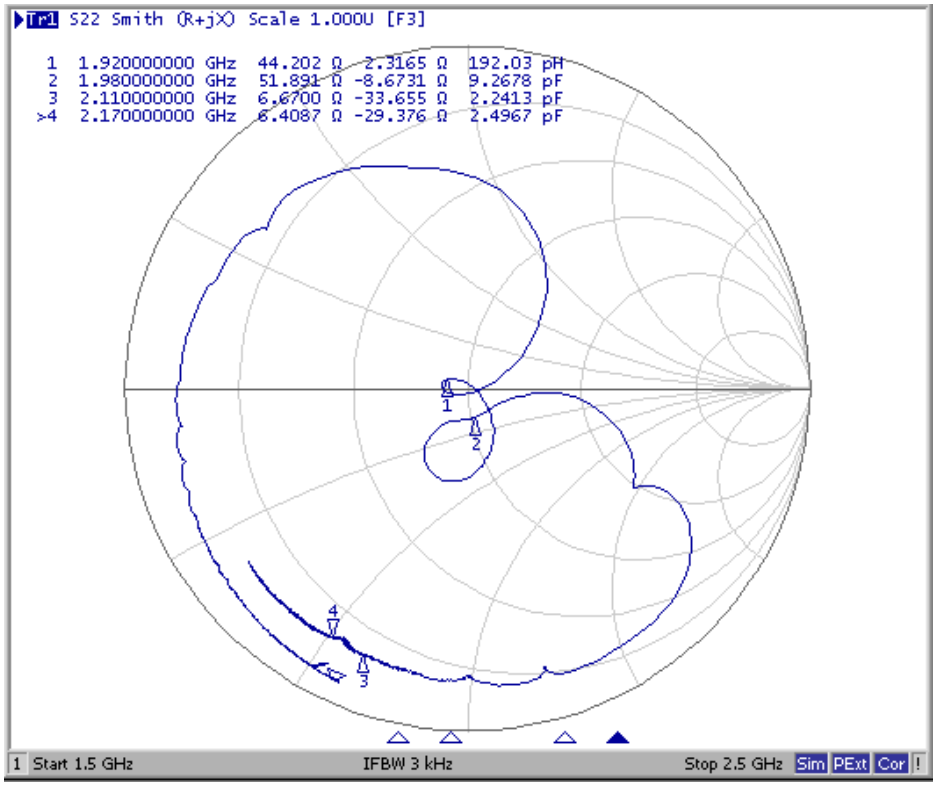
Tx to Rx Isolation



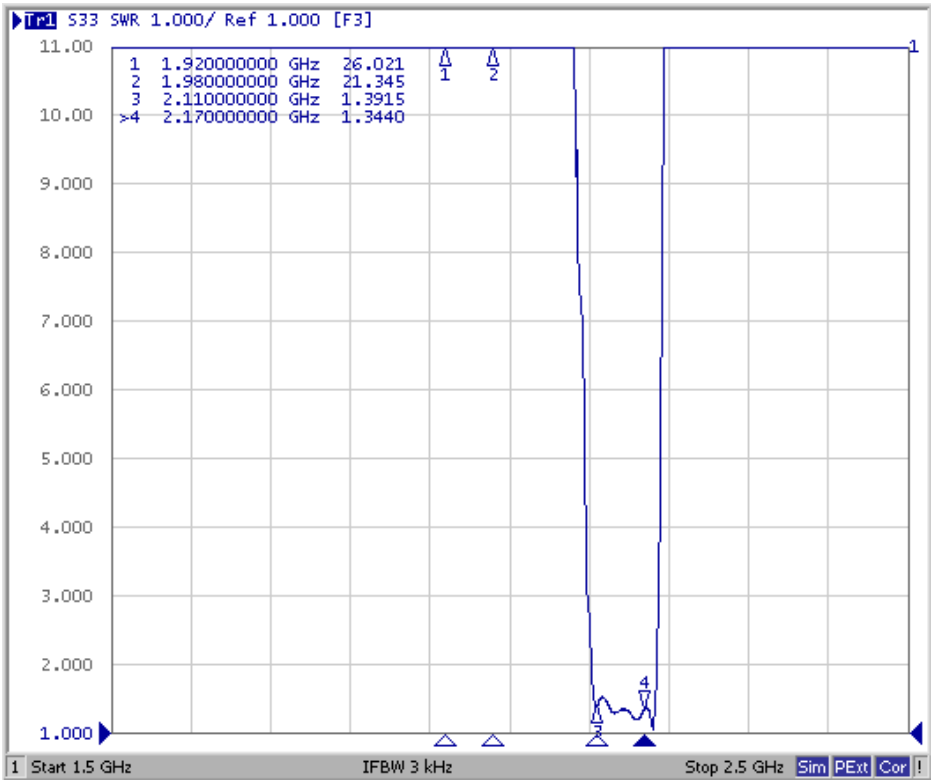
These data **exclude** loss that comes from the test board.

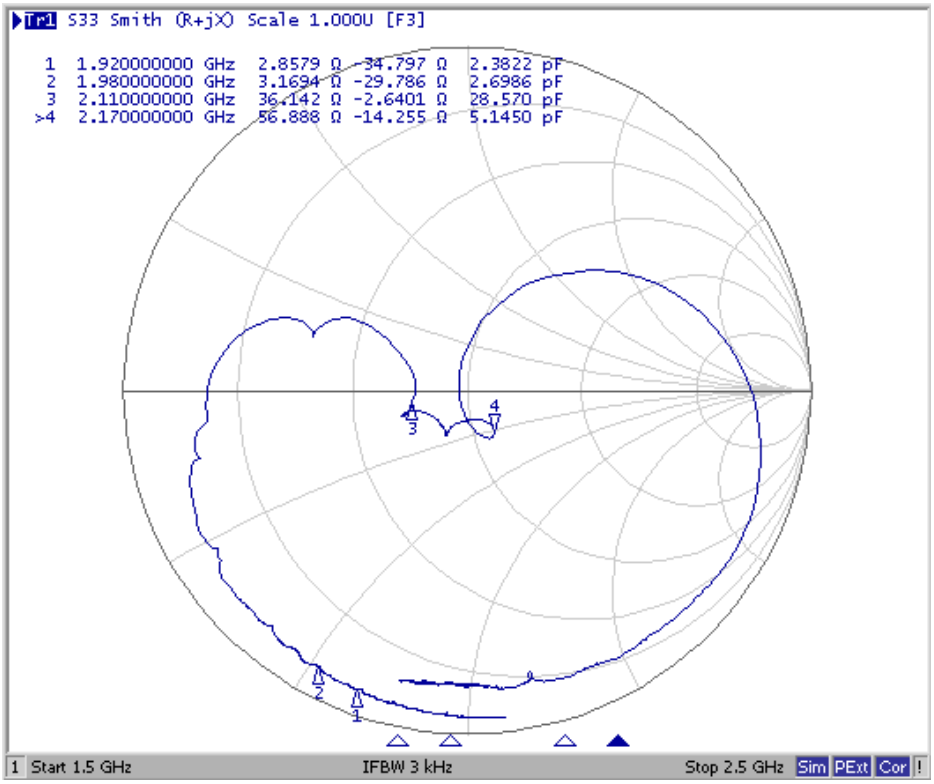
Tx Port



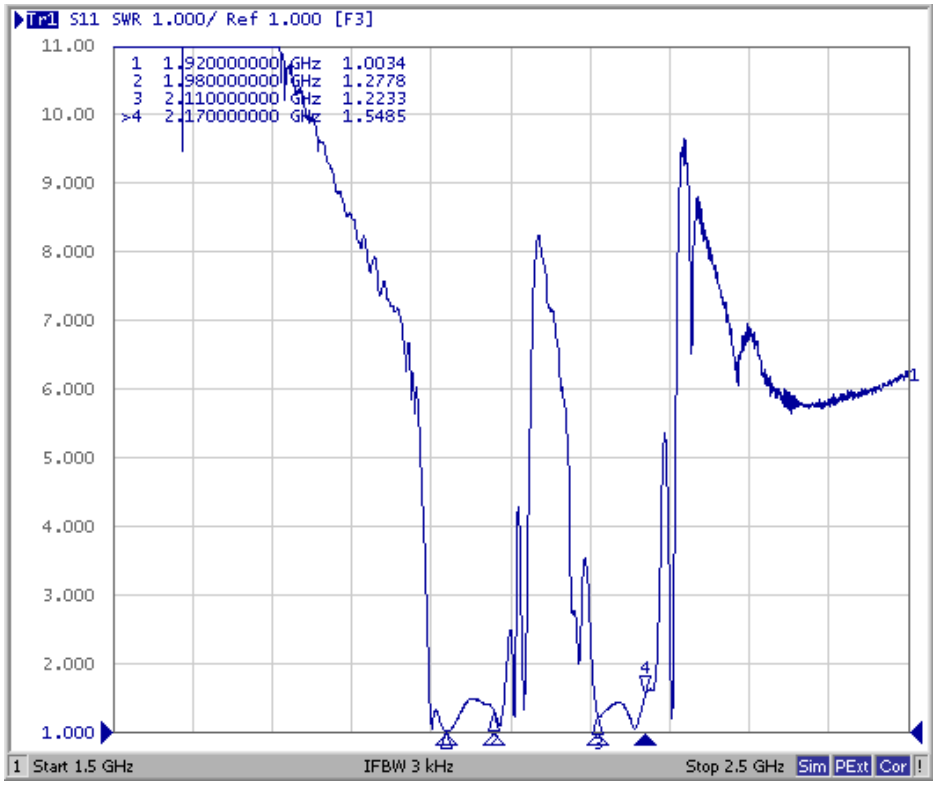


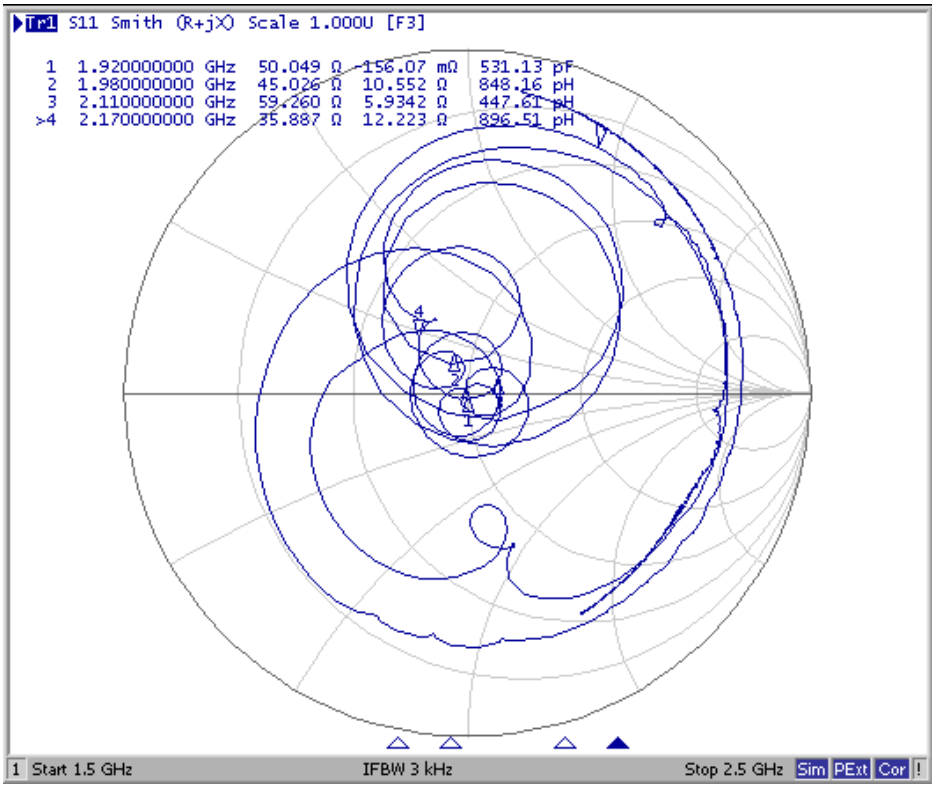
Rx Port


Tr1 S33 SWR 1.000/ Ref 1.000 [F3]
1 1.920000000 GHz 26.021
2 1.980000000 GHz 21.345
3 2.110000000 GHz 1.3915
>4 2.170000000 GHz 1.3440
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Start 1.5 GHz
IFBW 3 kHz
Stop 2.5 GHz
Sim PExt Cor

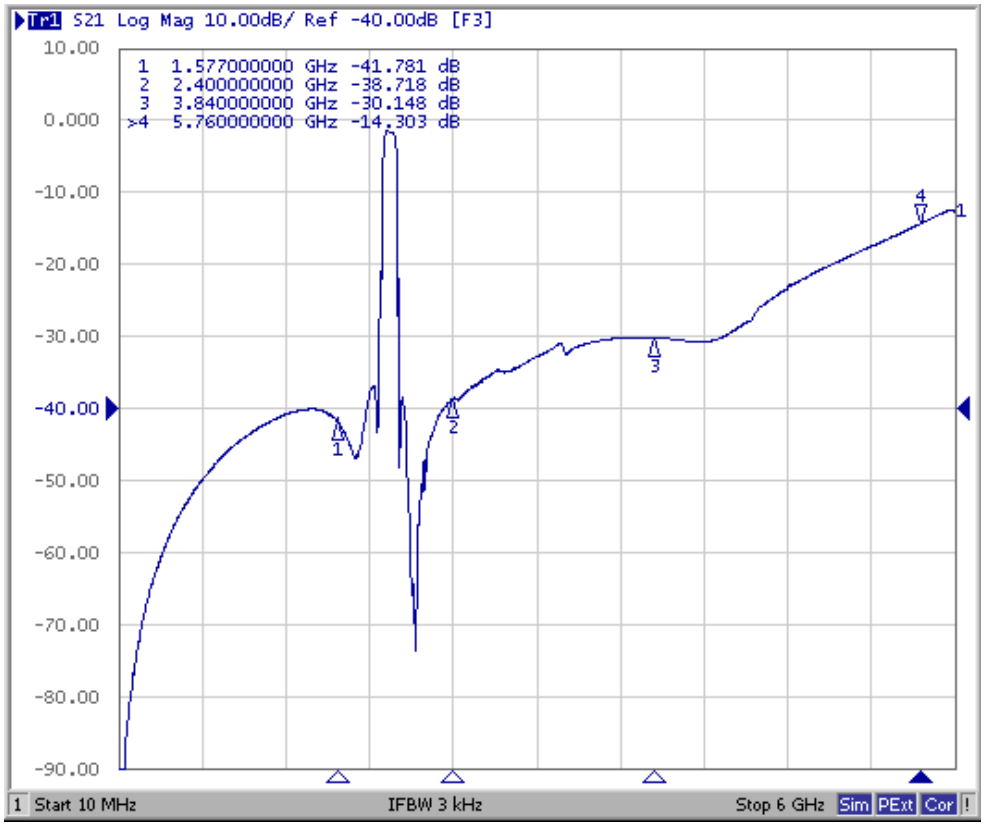

Tr1 S33 Smith (R+jX) Scale 1.000U [F3]
1 1.920000000 GHz 2.8579 Ω -34.797 Ω 2.3822 pF
2 1.980000000 GHz 3.1694 Ω -29.786 Ω 2.6986 pF
3 2.110000000 GHz 36.142 Ω -2.6401 Ω 28.570 pF
>4 2.170000000 GHz 56.888 Ω -14.255 Ω 5.1450 pF
1 Start 1.5 GHz
IFBW 3 kHz
Stop 2.5 GHz
Sim PExt Cor

Ant Port

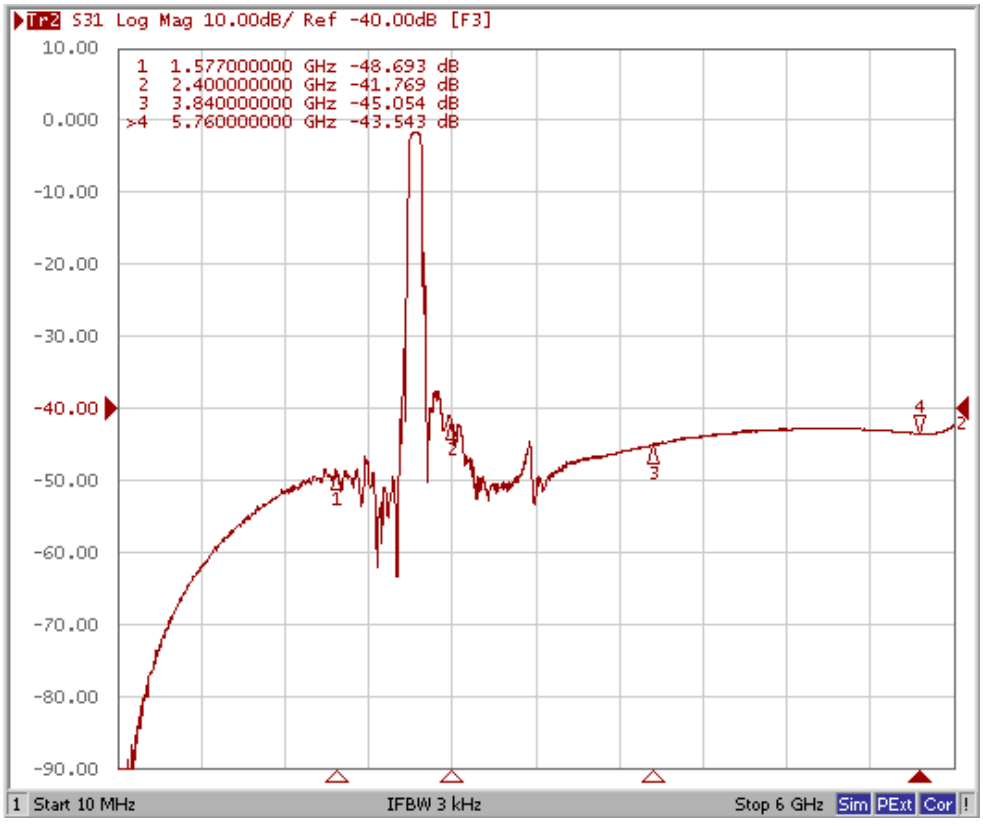




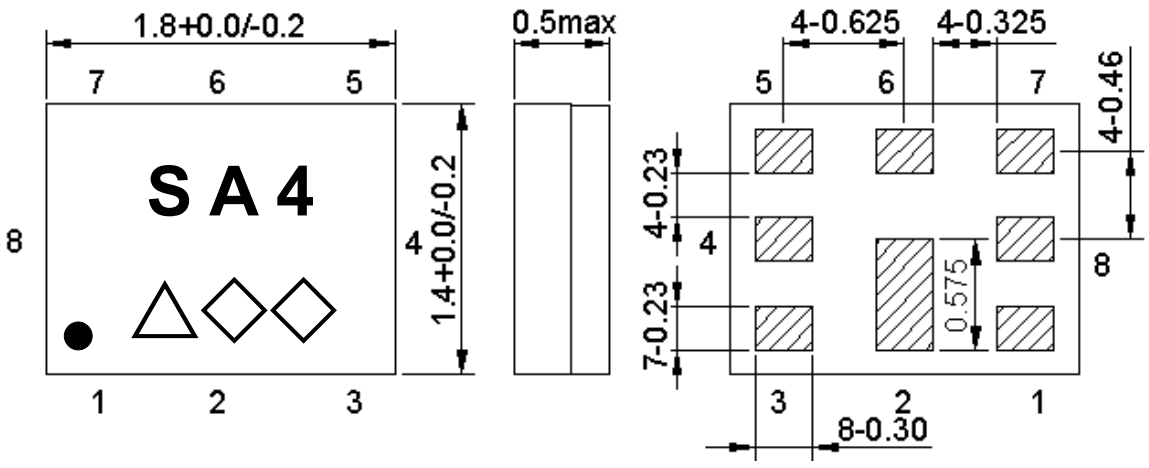
Tx to Ant (Wide span)



Ant to Rx (Wide span)



Outline Drawing



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

Marking name : **SA4**
△: Date code(2016 May → s ,……., 2019 Dec→m.)
◇◇: Lot Code.

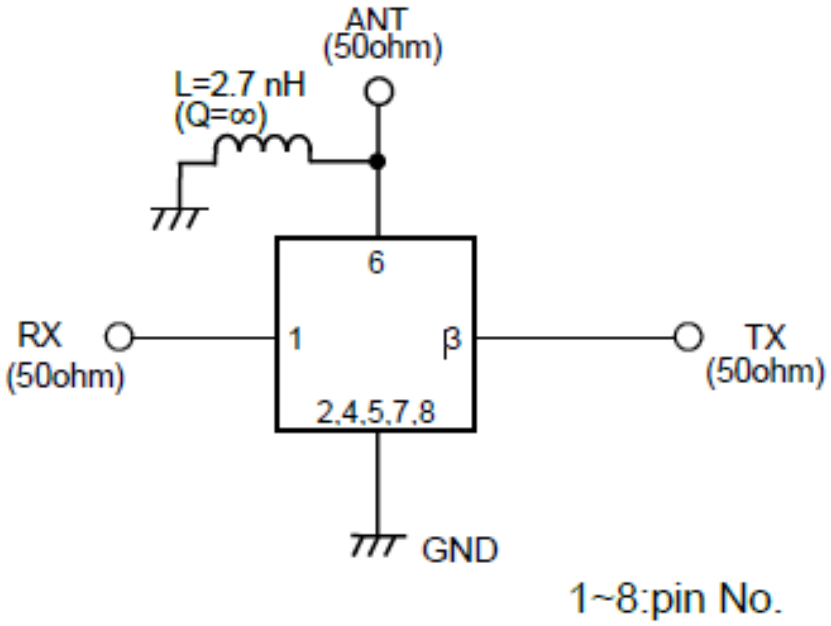
Product Date Code. Follow below table.

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
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

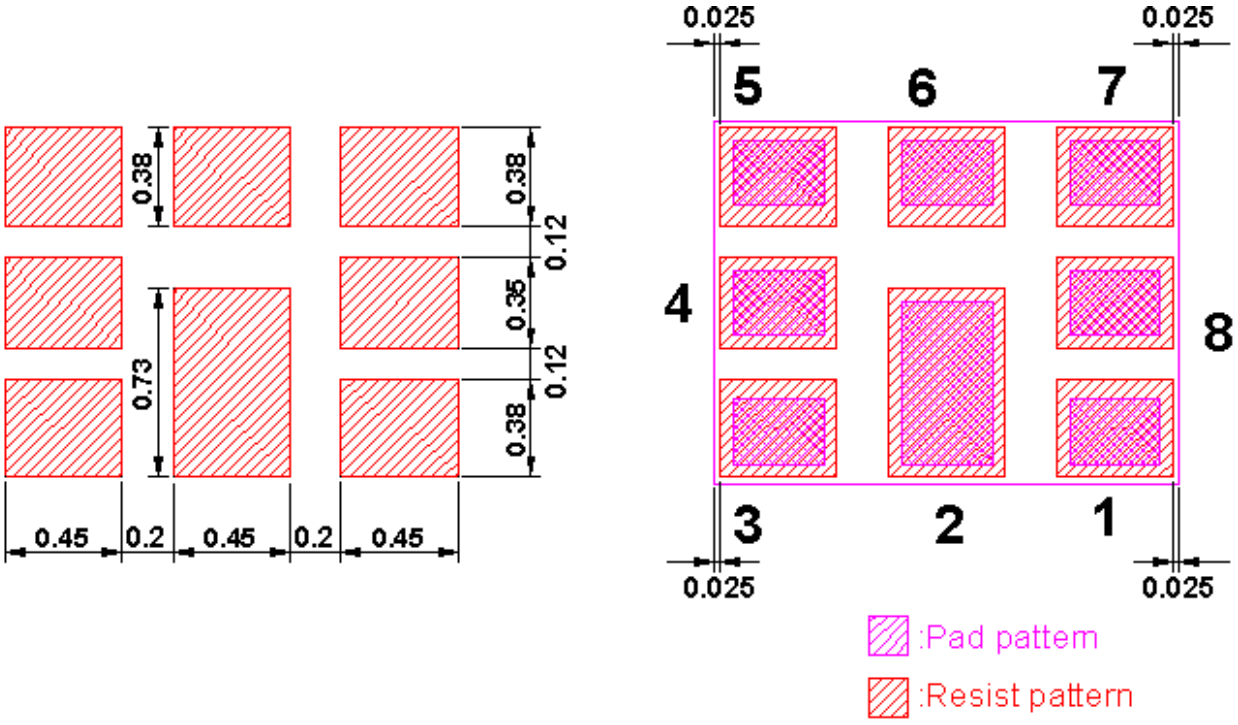
Pin Configuration:

Pin No.	Pin Name	Description
1	Rx	Receive 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

Evaluation Circuit

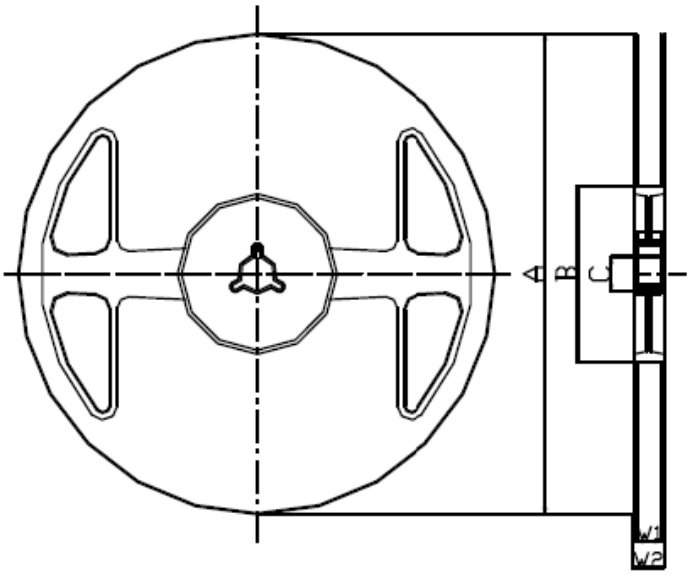


Footprint



Packing

Reel Dimension



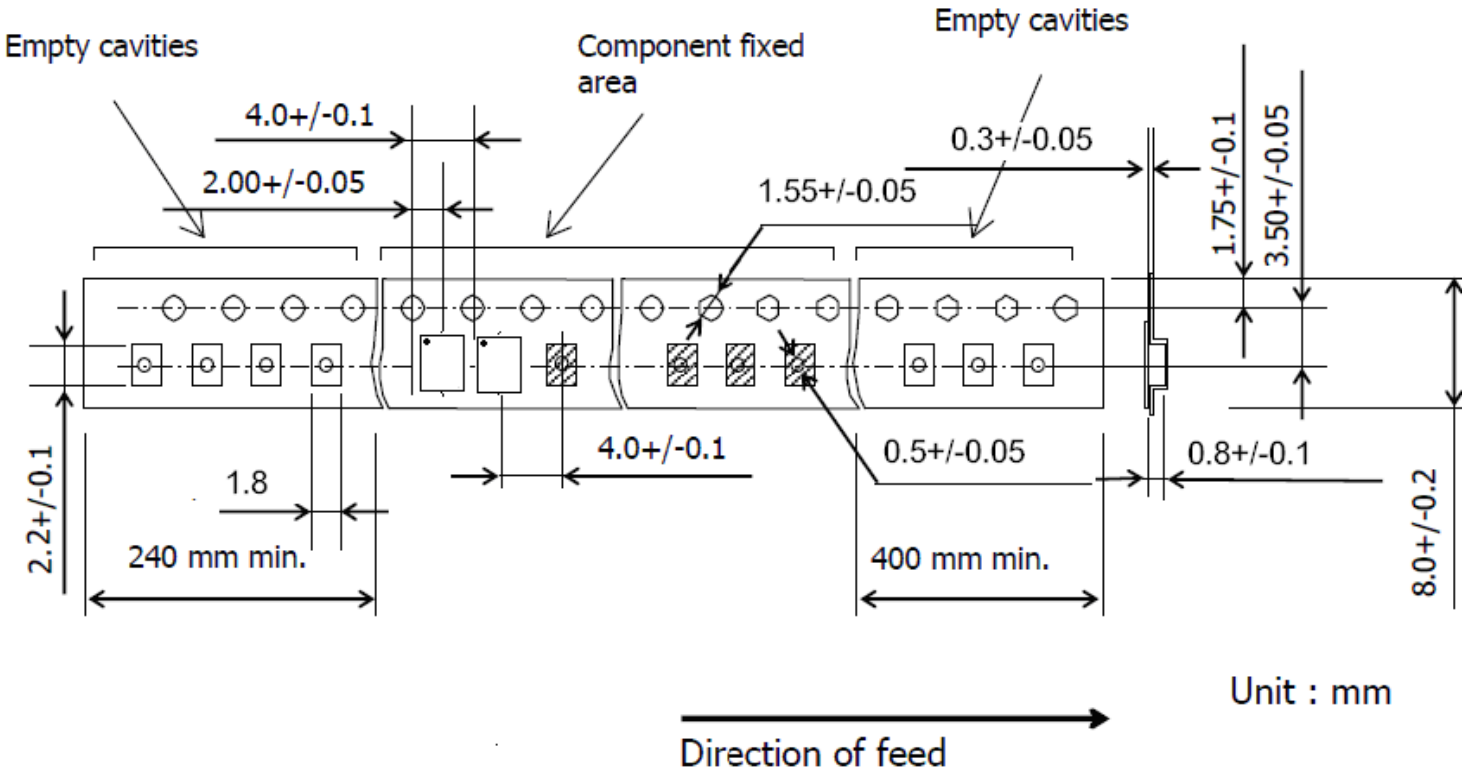
Materials of Reel

Material : Polystyrene + Carbon
Characteristics : Conforms to EIAJ-ET-7200A
Color : Black
Surface resistance (reference value) : $10^9\Omega$/sq Max.

Unit : mm

Code	Quantity	A	B	C	W1	W2
Z	3,000 pcs	ϕ 180.0 +0.0/-1.5	ϕ 66.0 +/-0.5	ϕ 13.0 +/-0.2	9.0 +1.0/-0.0	11.4 +/-1.0

Tape Dimension



Recommended Reflow Profile

1. Preheating shall be fixed at 150~180ºC for 60~90 seconds.
2. Ascending time to preheating temperature 150ºC shall be 30 seconds min.
3. Heating shall be fixed at 220ºC for 50~80 seconds and at 245~~260℃ peak (min. 10sec).
4. Time : 3 times.