TAI-SAW TECHNOLOGY CO., LTD.
No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,
Taoyuan, 324, Taiwan, R.O.C.
TEL: 886-3-4690038 FAX: 886-3-4697532
E-mail: tstsales@mail.taisaw.com Web: www.taisaw.com

Product Specifications Approval Sheet

Product Description: SAW DPX 836.5/881.5 MHz LTE Band 5 SMD 1814

TST Part No.: TF0123AN

Customer Part No.:_____

Customer signature required

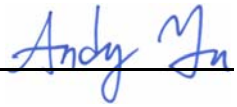
Company:_____

Division:_____

Approved by :_____

Date:_____

Checked by:_____ Anne Chen 

Approved by:_____ Andy Yu 

Date:_____ 2017/12/22

1. Customer signed back is required before TST can proceed with sample build and receive orders.
2. Orders received without customer signed back will be regarded as agreement on the specifications.
3. Any specifications changes must be approved upon by both parties and a new revision of specifications shall be released to reflect the change

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SAW DPX 836.5/881.5 MHz LTE Band 5 SMD 1814 (25 MHz BW)

MODEL NO.:TF0123AN REV.No.:1

A. MAXIMUM RATING:

1. Operating temperature range: -30 °C to +85 °C
2. Storage temperature range: -30 °C to +85 °C
3. Input power : 29dBm (Ta=+50deg C,50000h,CW)
4. Maximum DC Voltage: +/-3 V
5. Moisture Sensitivity Level: Level 1
6.ESD 50V(MM) 100V(HBM)

RoHS Compliant

Lead-free soldering

Electrostatic Sensitive Device (ESD)

B. ELECTRICAL CHARACTERISTICS:

Terminating impedance (Tx Port): 50 Ω(Single-ended)
Terminating impedance (Rx Port): 50 Ω (Single-ended)
Terminating impedance (Ant Port): 50//6.8nH Ω (Single-ended)

Tx to ANT (f_{T0}=836.5 MHz)

Parameters Description			Unit	Min	Typ	Max	Remarks
Insertion Loss		824~849MHz	dB(*1)	-	1.4	1.9	
Amplitude ripple		824~849MHz	dB	-	0.3	1.2	
VSWR	ANT	824~849MHz	-	-	1.6	2.0	
	Tx		-	-	1.9	2.2	
Attenuation:							
DC~750 MHz			dB	25	40	-	
779~804 MHz			dB	30	45	-	
860~870 MHz			dB	3	7	-	
869~894 MHz			dB	52	58	-	
1574~1577 MHz			dB	40	51	-	
1648~1698 MHz			dB	40	53		
2472~2547 MHz			dB	30	54		

ANT to Rx (f_{T0}=881.5 MHz)

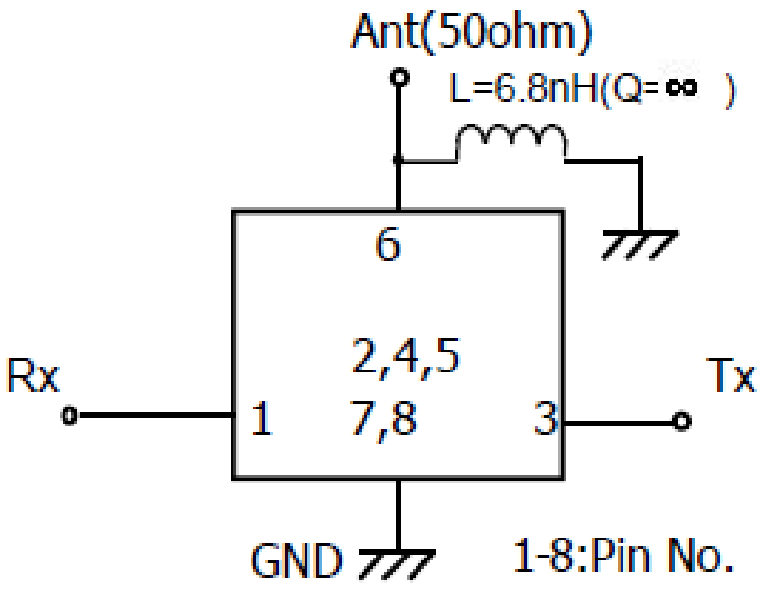
Parameters Description			Unit	Min	Typ	Max	Remarks
Insertion Loss		869~894 MHz	dB(*1)	-	1.7	2.3	
Amplitude ripple		869~894 MHz	dB	-	0.4	1.3	
VSWR	ANT	869~894 MHz	-		1.7	2.0	
	Rx		-		1.7	2.0	
Attenuation:							
779~804 MHz			dB	50	57	-	
824~849 MHz			dB	50	60	-	

Tx to Rx

Isolation	824~849 MHz	dB	55	58	-	
	869~894 MHz	dB	54	59	-	

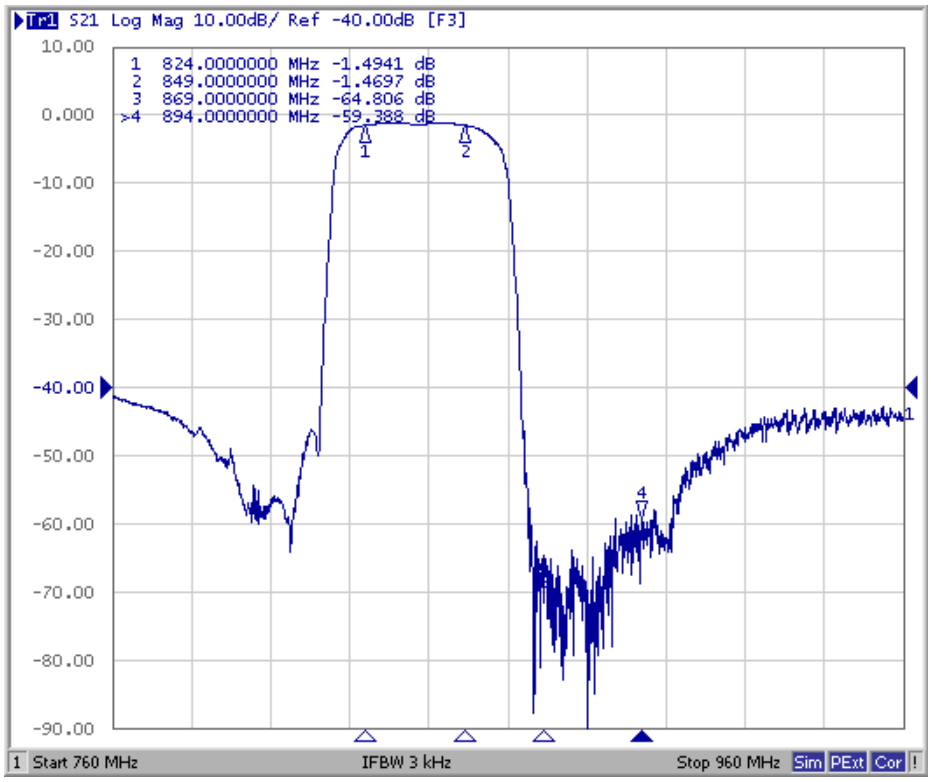
(*1) Specification of insertion loss excludes loss that comes from the test board.

C.Evaluation Circuit

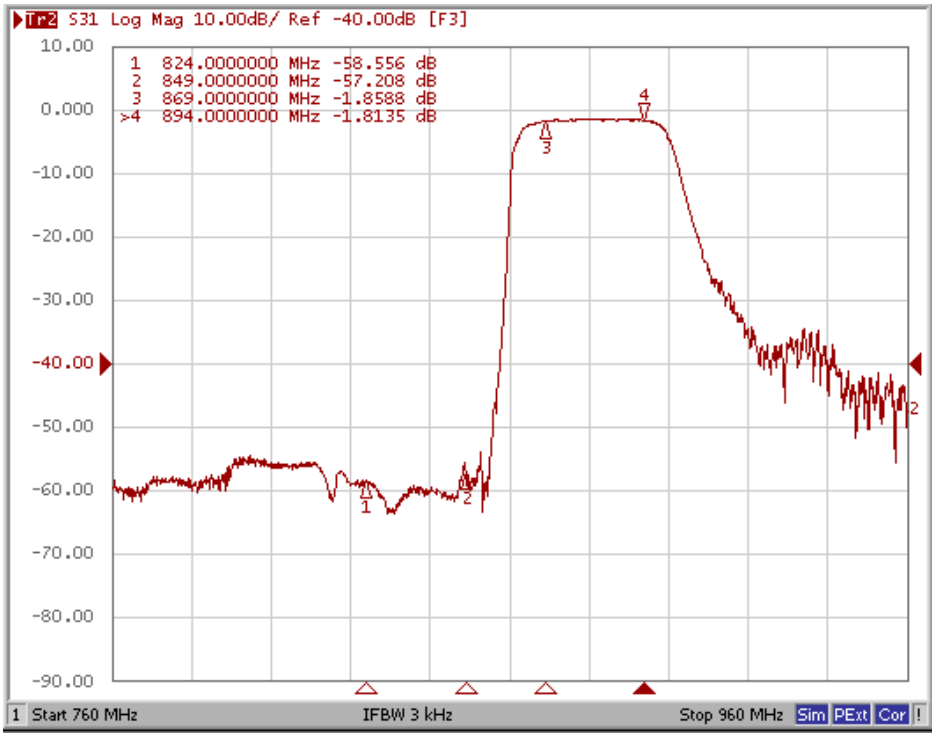


D. FREQUENCY CHARACTERISTICS:

Tx to Ant

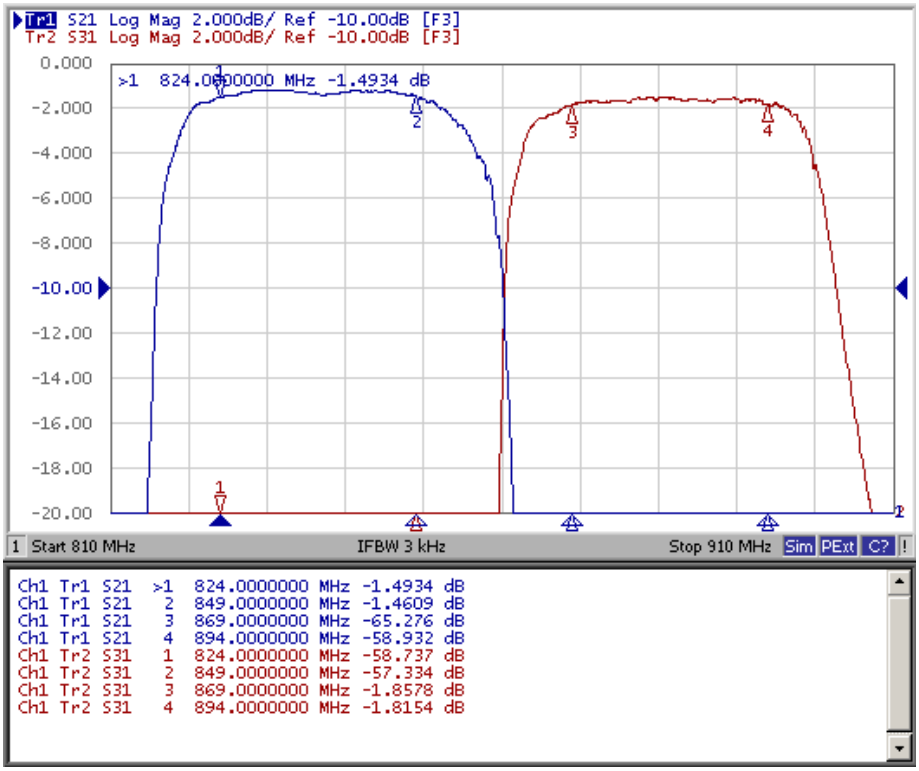


Ant to Rx

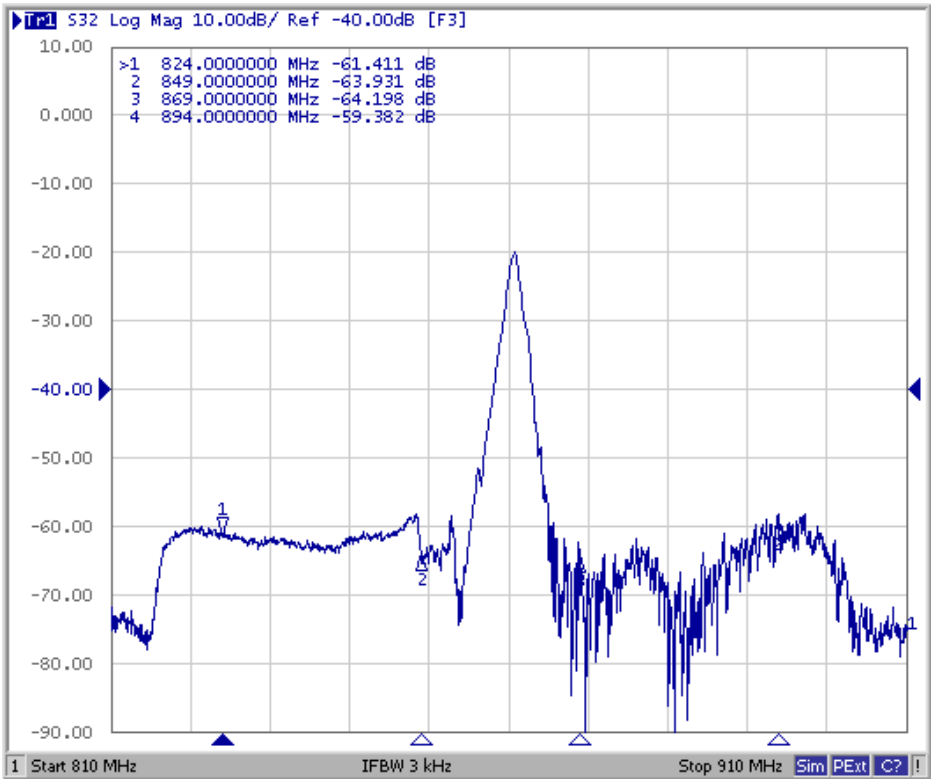


These data **exclude** loss that comes from the test board.

Tx to Ant ,Ant to Rx

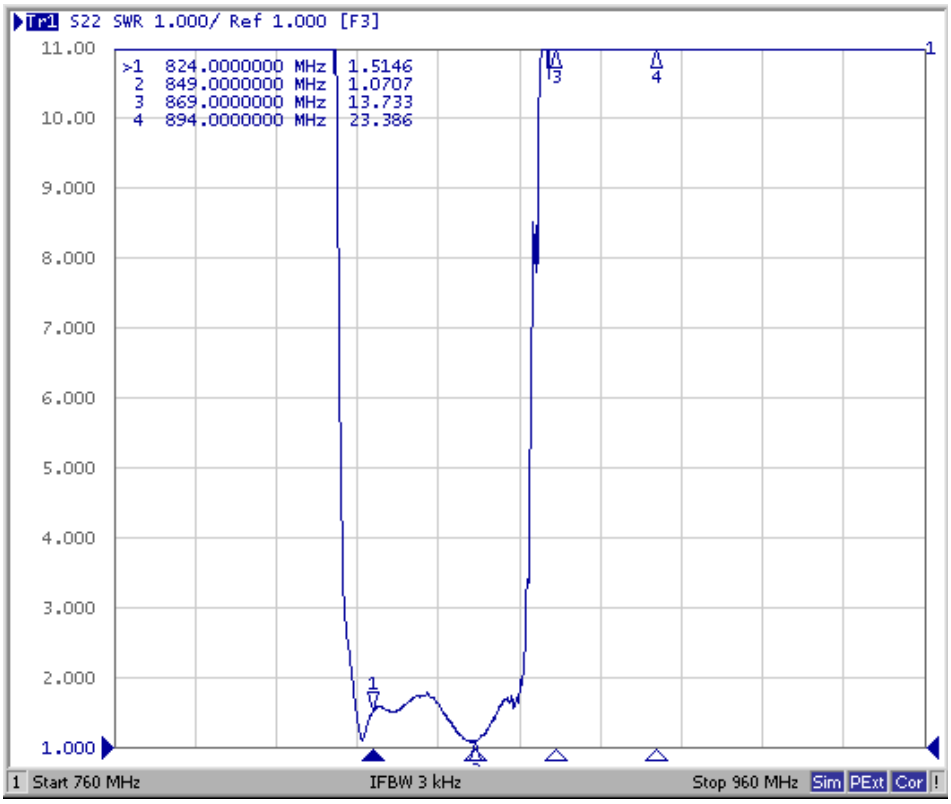


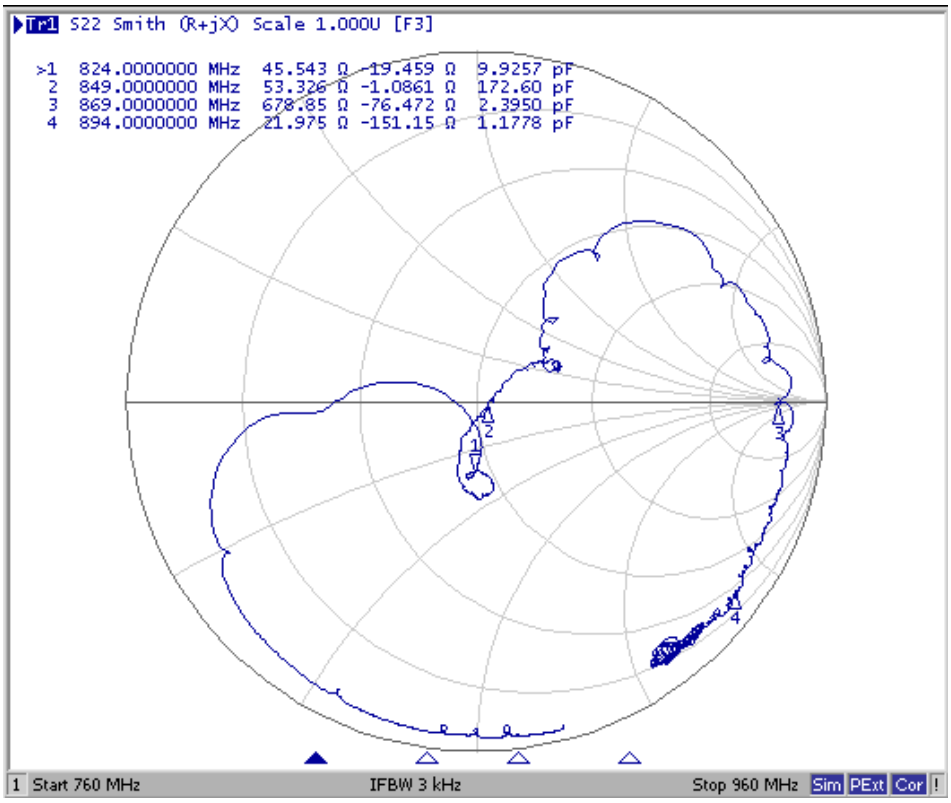
Tx to Rx Isolation



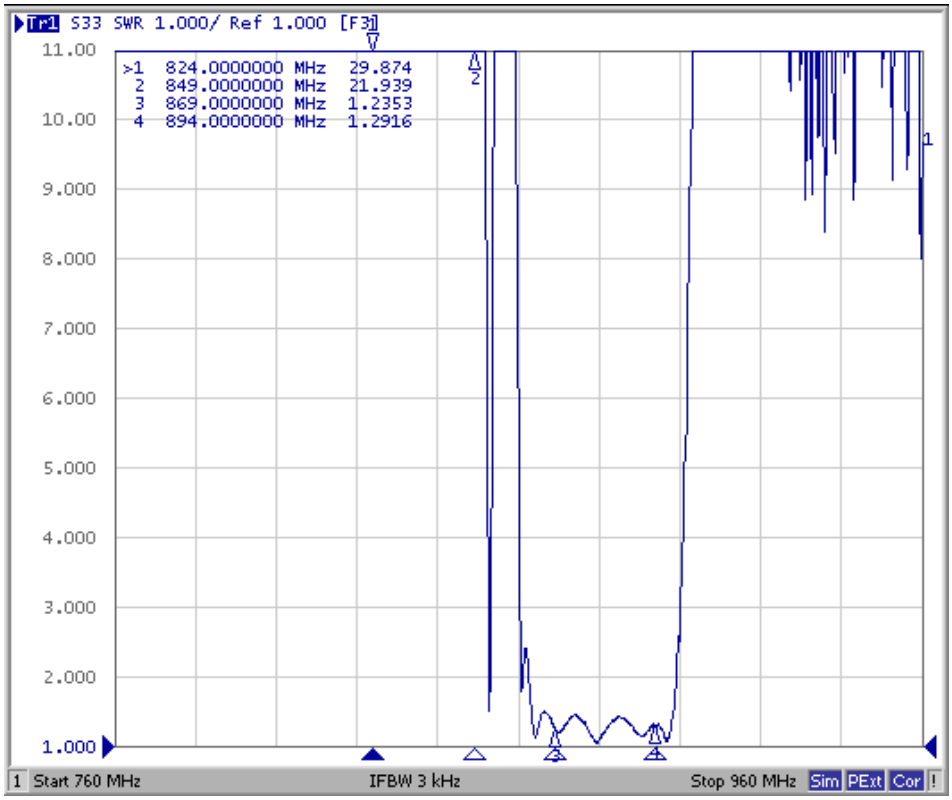
These data **exclude** loss that comes from the test board

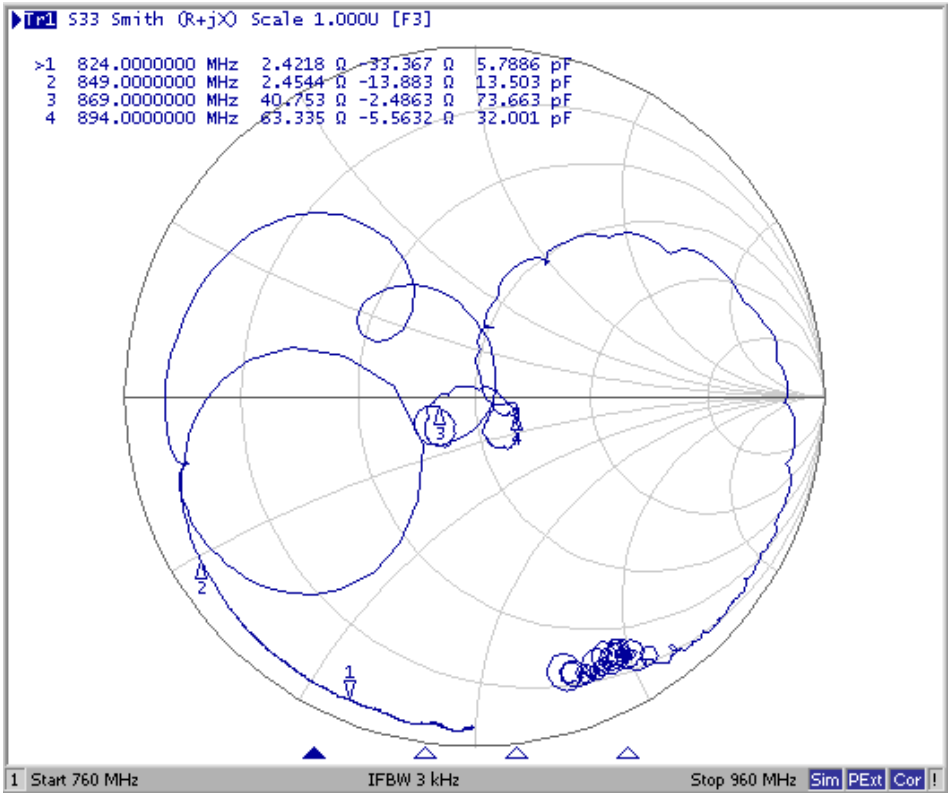
Tx Port


Tr1 S22 SWR 1.000/ Ref 1.000 [F3]
>1 824.0000000 MHz 1.5146
2 849.0000000 MHz 1.0707
3 869.0000000 MHz 13.733
4 894.0000000 MHz 23.386
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Start 760 MHz
IFBW 3 kHz
Stop 960 MHz
Sim PExt Cor !

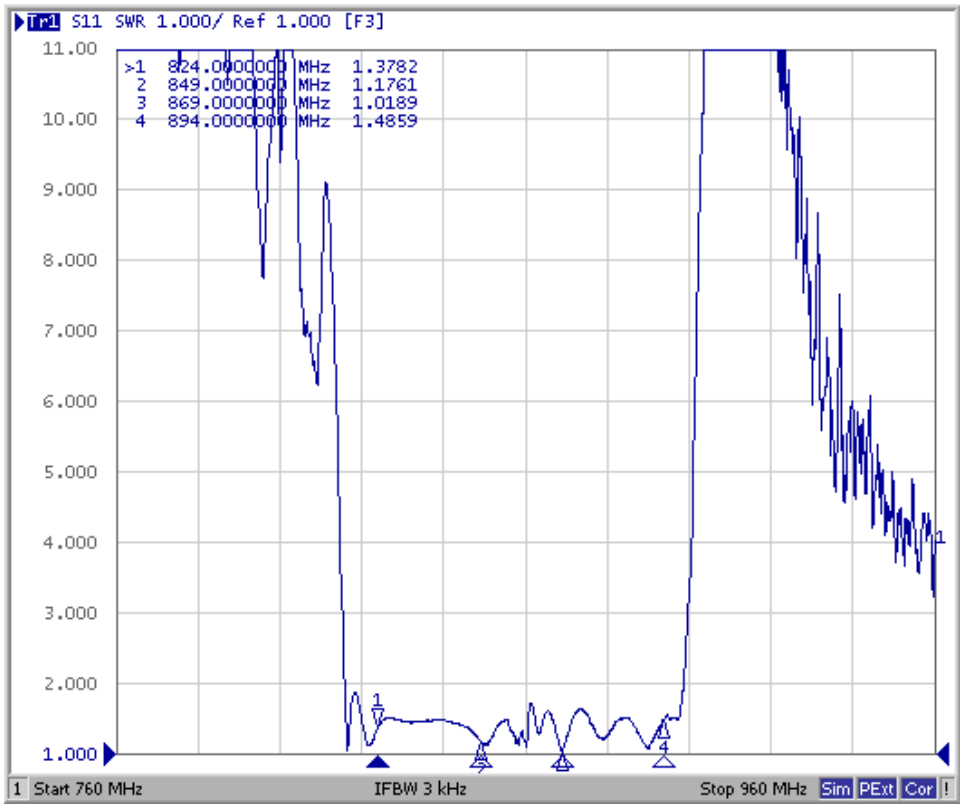

Tr1 S22 Smith (R+jX) Scale 1.000U [F3]
>1 824.0000000 MHz 45.543 Ω -19.459 Ω 9.9257 pF
2 849.0000000 MHz 53.326 Ω -1.0861 Ω 172.60 pF
3 869.0000000 MHz 678.85 Ω -76.472 Ω 2.3950 pF
4 894.0000000 MHz 21.975 Ω -151.15 Ω 1.1778 pF
1 Start 760 MHz
IFBW 3 kHz
Stop 960 MHz
Sim PExt Cor !

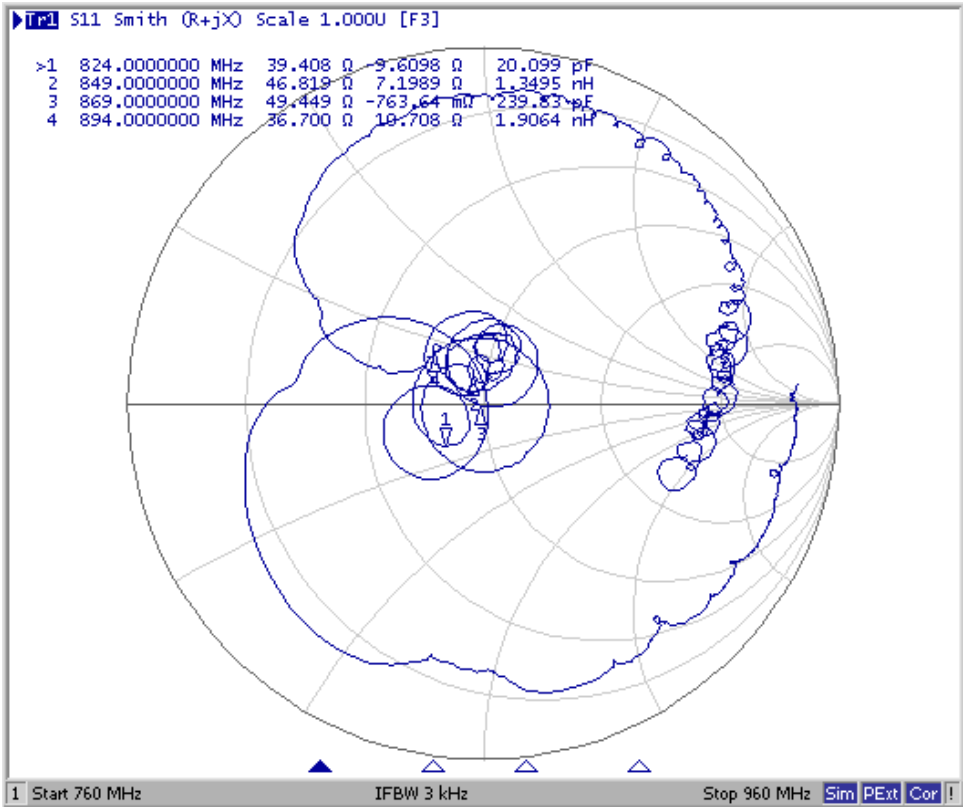
Rx Port


Tr1 S33 SWR 1.000/ Ref 1.000 [F3]
>1 824.0000000 MHz 29.874
2 849.0000000 MHz 21.939
3 869.0000000 MHz 1.2353
4 894.0000000 MHz 1.2916
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Start 760 MHz
IFBW 3 kHz
Stop 960 MHz
Sim PExt Cor

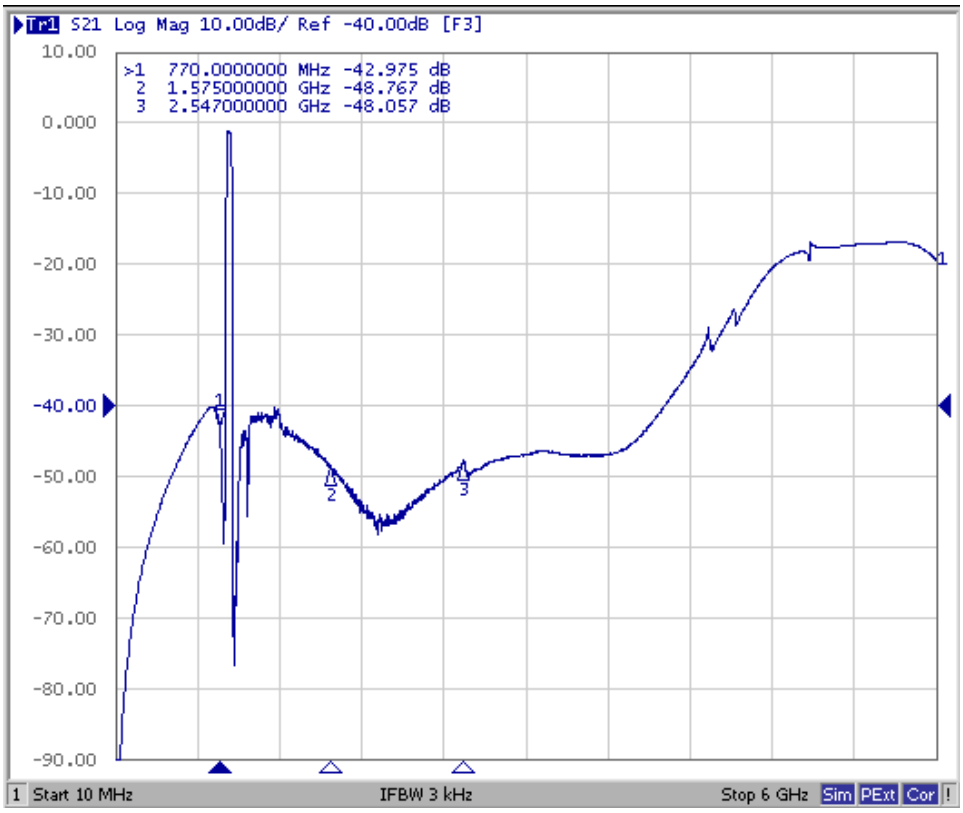

Tr1 S33 Smith (R+jX) Scale 1.000U [F3]
>1 824.0000000 MHz 2.4218 Ω -33.367 Ω 5.7886 pF
2 849.0000000 MHz 2.4544 Ω -13.883 Ω 13.503 pF
3 869.0000000 MHz 40.753 Ω -2.4863 Ω 73.663 pF
4 894.0000000 MHz 63.335 Ω -5.5632 Ω 32.001 pF
1 Start 760 MHz
IFBW 3 kHz
Stop 960 MHz
Sim PExt Cor

Ant Port

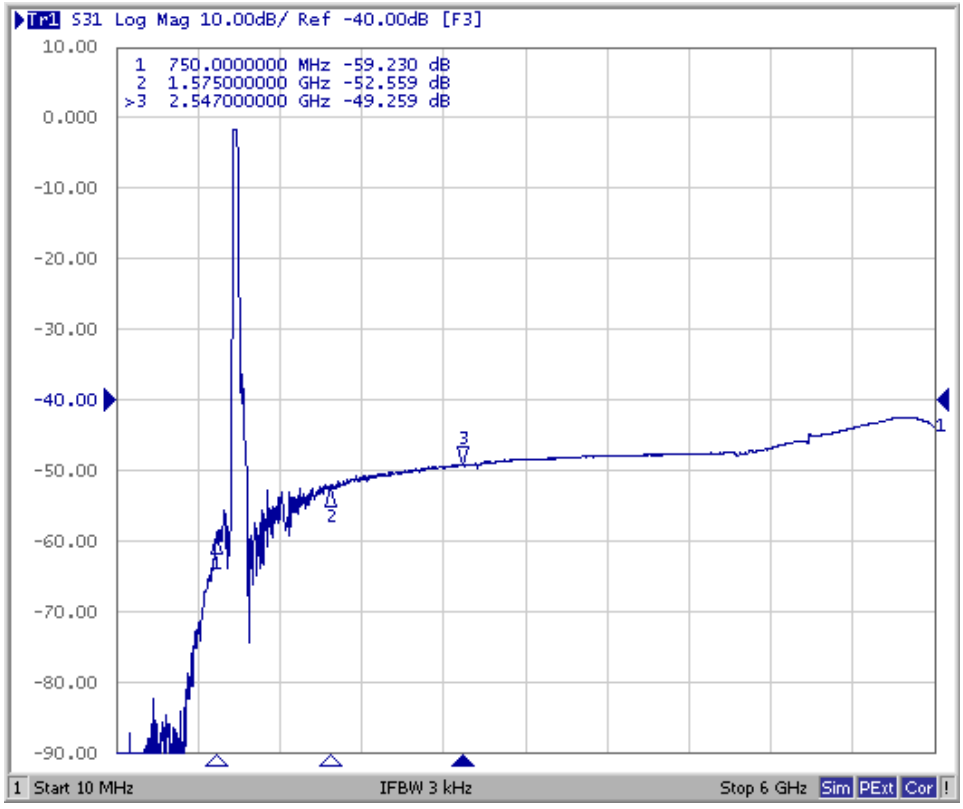

Tr1 S11 SWR 1.000/ Ref 1.000 [F3]
>1 824.0000000 MHz 1.3782
2 849.0000000 MHz 1.1761
3 869.0000000 MHz 1.0189
4 894.0000000 MHz 1.4859
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Start 760 MHz
IFBW 3 kHz
Stop 960 MHz
Sim PExt Cor !


Tr1 S11 Smith (R+jX) Scale 1.000U [F3]
>1 824.0000000 MHz 39.408 Ω -9.6098 Ω 20.099 pF
2 849.0000000 MHz 46.819 Ω 7.1989 Ω 1.3495 nH
3 869.0000000 MHz 49.449 Ω -763.64 mΩ 239.83 pF
4 894.0000000 MHz 36.700 Ω 10.708 Ω 1.9064 nH
1 Start 760 MHz
IFBW 3 kHz
Stop 960 MHz
Sim PExt Cor !

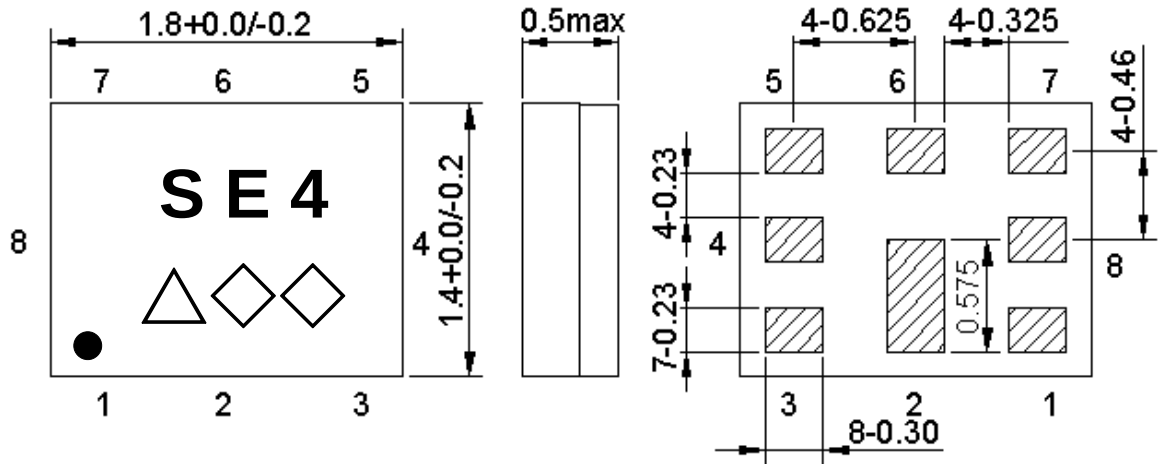
Tx to Ant (Wide span)



Ant to Rx (Wide span)



E.OUTLINE DRAWIN:



Marking name : **SE4**

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

◇◇: Lot Code.

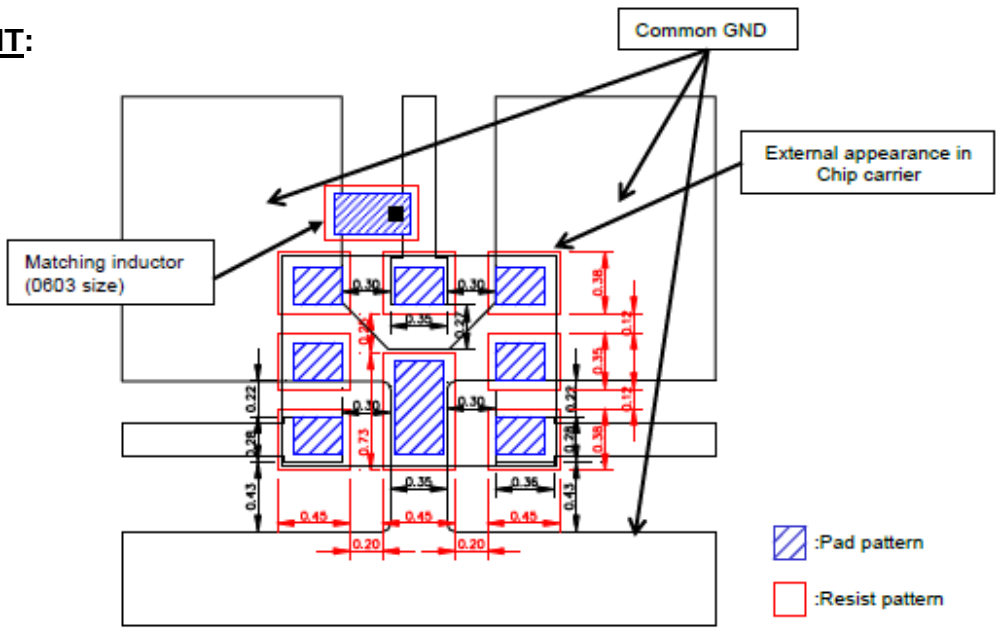
Product Date Code. Follow below table.

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	∇	W	X	Y	Z
2019	a	b	c	d	e	f	g	h	j	k	l	m

Pin Configuration:

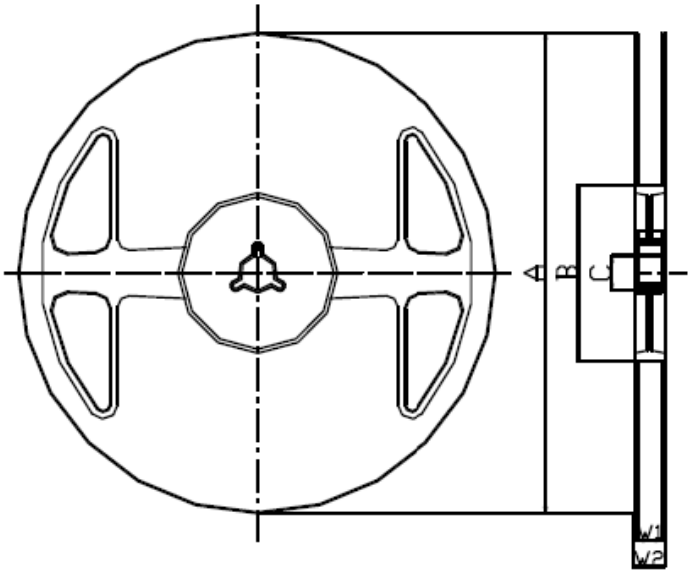
Pin No.	Pin Name	Description
1	Rx	Receive Pin
2	GND	Ground Pin
3	Tx	Transmitter Pin
4	GND	Ground Pin
5	GND	Ground Pin
6	ANT	Antenna Pin
7	GND	Ground Pin
8	GND	Ground Pin

F. FOOTPRINT:



G. PACKING:

1. REEL DIMENSION



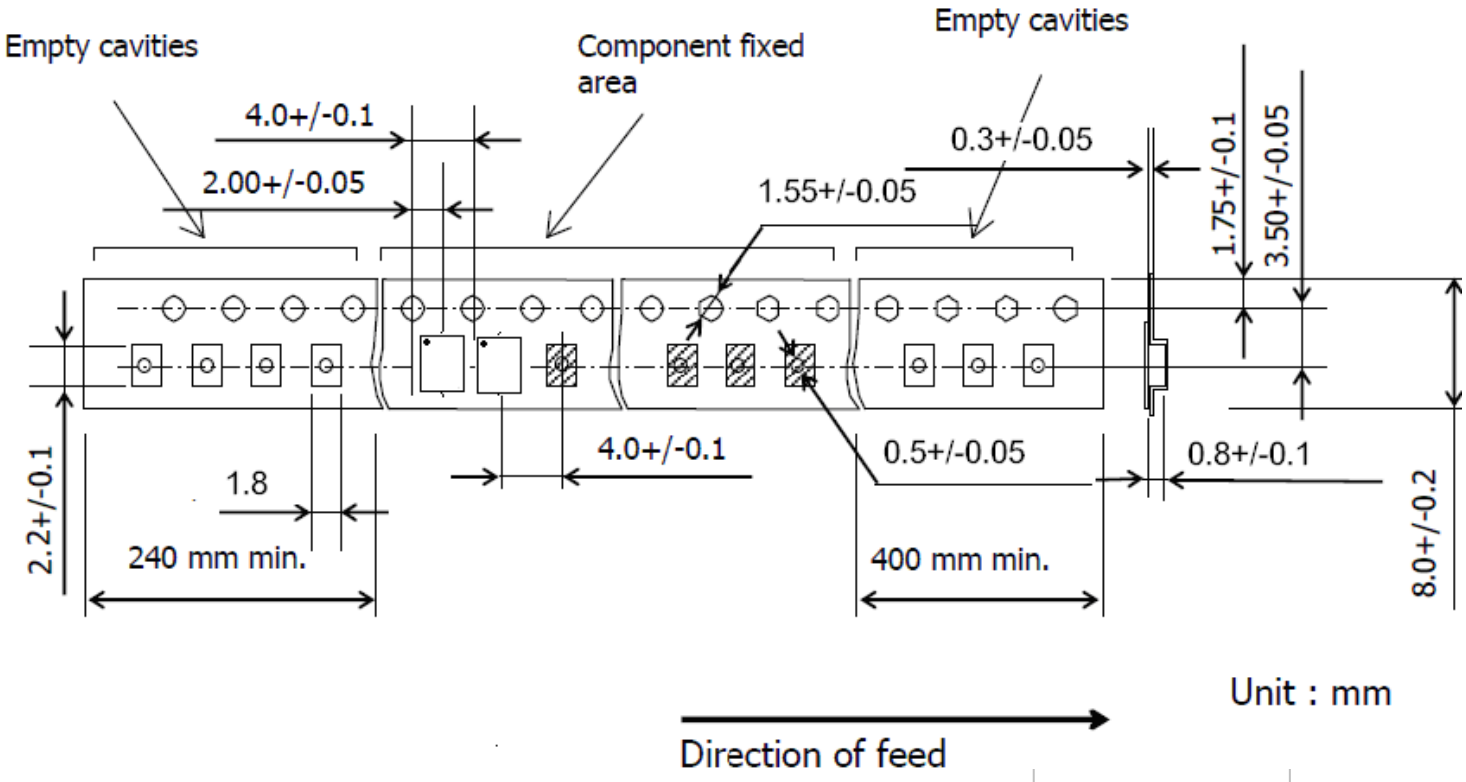
Materials of Reel

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

2. TAPE DIMENSION



H. 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 245~260℃ peak (min. 10sec).
4. Time : 2 times.

