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 707.5/ 737.5 MHz LTE Band 12 SMD 1814

TST Part No.: TF0133AN

Customer Part No.:_____

Customer signature required

Company:_____

Division:_____

Approved by :_____

Date:_____

Checked by:_____Nina Chen Nina Chen_____

Approved by:_____Kazuma Lee Kazuma Lee_____

Date:_____2023/06/05_____

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 707.5/737.5 MHz LTE Band 12 SMD 1814 (17 MHz BW)

MODEL NO.:TF0133AN REV.No.:2

A. MAXIMUM RATING:

1. Operating temperature range: -30 °C to +105 °C
2. Storage temperature range: -30 °C to +105 °C
3. Tx Input power : 29dBm (Ta=+50°C,50000h)

3.1Rx Input power : 15dBm (Ta=+50°C,50kh,CW)

4. Maximum DC Voltage: +/-3 V
5. Moisture Sensitivity Level: Level 1 (MSL 1)
6. ESD 100V(MM) 200V(HBM)

RoHS Compliant

Lead-free soldering

Electrostatic **S**ensitive **D**evice (**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//12nH Ω (Single-ended)

Tx to ANT (f_{T0}=707.5 MHz)

Parameters Description			Unit	Min	Typ	Max	Remarks
Insertion Loss(*1)		699~716MHz	dB	-	1.65	2.35	
Amplitude ripple		699~716MHz	dB	-	0.8	1.5	
VSWR	ANT	699~716MHz	-	-	1.8	2.1	
	Tx	699~716MHz	-	-	1.9	2.2	
Attenuation:							
729 ~ 746 MHz			dB	45	54	-	
746 ~ 768 MHz			dB	30	46	-	
768 ~ 805 MHz			dB	25	41	-	
869 ~ 894 MHz			dB	35	44	-	
1398 ~ 1432 MHz			dB	30	46		
1559 ~ 1606 MHz			dB	40	46	-	
2097 ~ 2155 MHz			dB	35	43	-	
2400 ~ 2484 MHz			dB	30	55	-	
2796 ~ 2864 MHz			dB	15	41	-	
4900 ~ 5850 MHz			dB	5	12		

ANT to Rx (f_{T0}=737.5 MHz)

Parameters Description			Unit	Min	Typ	Max	Remarks
Insertion Loss		729 ~ 746 MHz	dB	-	1.65	2.35	
Amplitude ripple		729 ~ 746 MHz	dB	-	0.5	1.5	
VSWR	ANT	729 ~ 746 MHz	-		1.6	2.0	
	Rx		-		1.9	2.2	
Attenuation:							
699 ~ 716 MHz			dB	55	62	-	
776 ~ 805 MHz			dB	35	40	-	
814 ~ 960 MHz			dB	40	55		
1710 ~ 1755 MHz			dB	40	54		
1850 ~ 1920 MHz			dB	40	52	-	
2187 ~ 2238 MHz			dB	40	51	-	
2400 ~ 2500 MHz			dB	40	49		
4900 ~ 5950 MHz			dB	35	46		

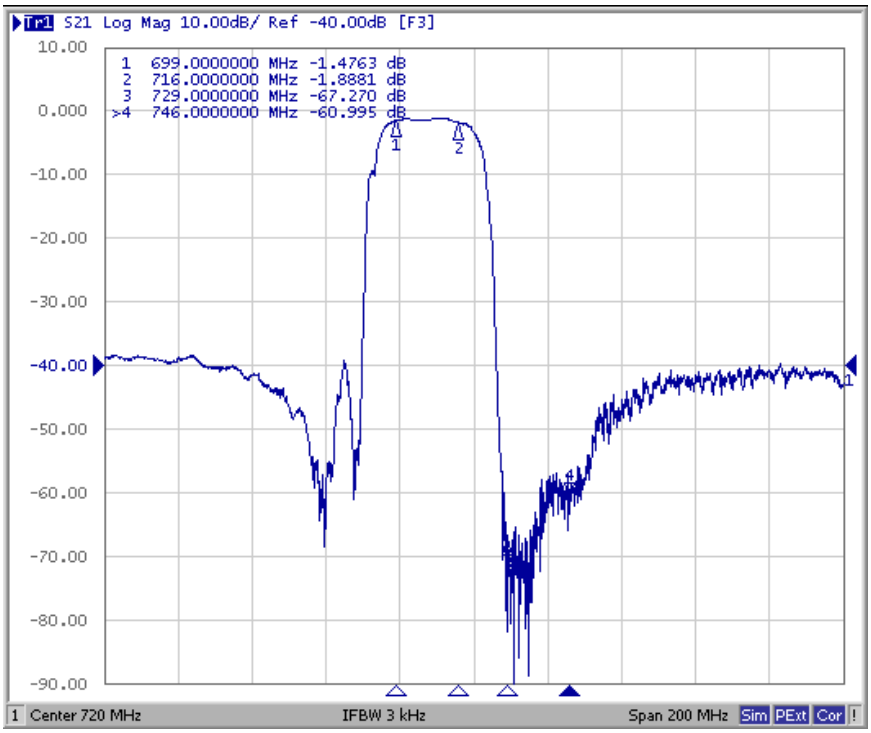
Tx to Rx

Isolation	699 ~ 716 MHz	dB	60	63	-	
	729 ~ 746 MHz	dB	55	58	-	

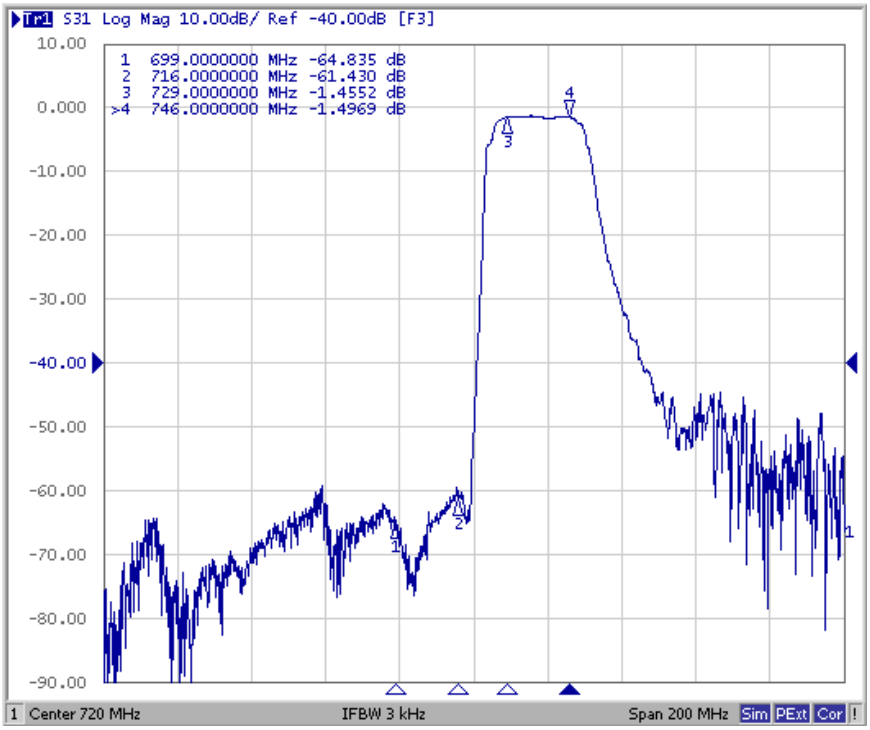
(*1) Specification of insertion loss excludes loss that comes from the test board.

C. FREQUENCY CHARACTERISTICS:

Tx to Ant

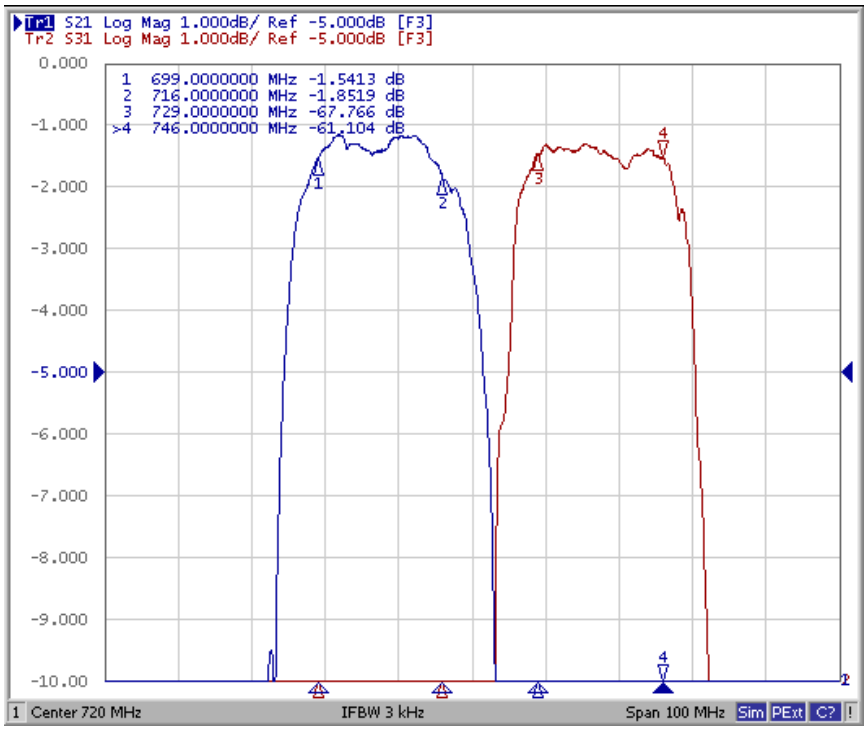


Ant to Rx

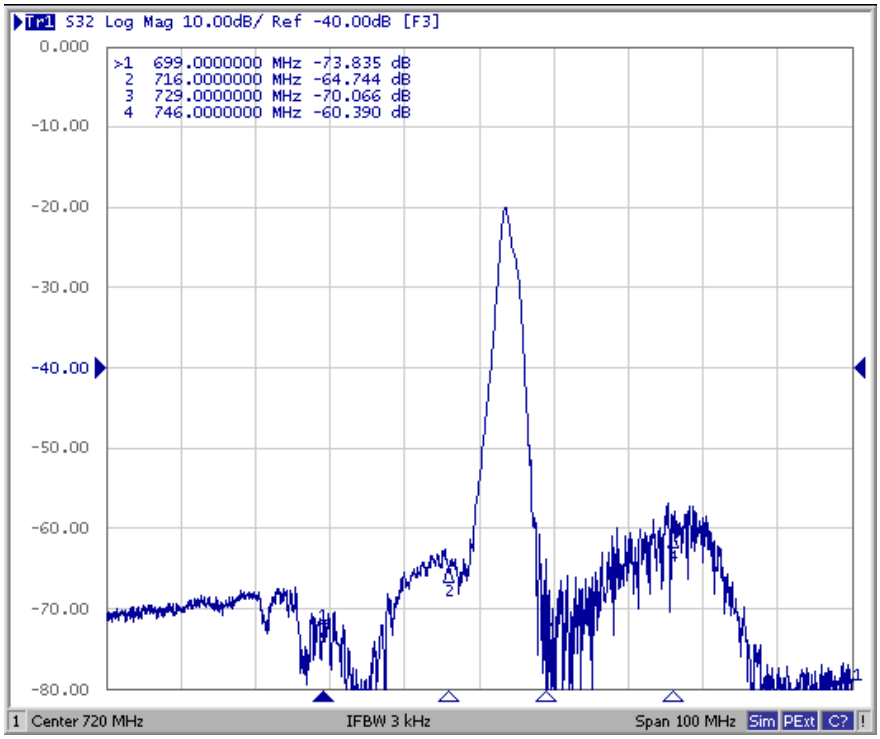


These data exclude loss that comes from the test board

Tx to Ant, Ant to Rx

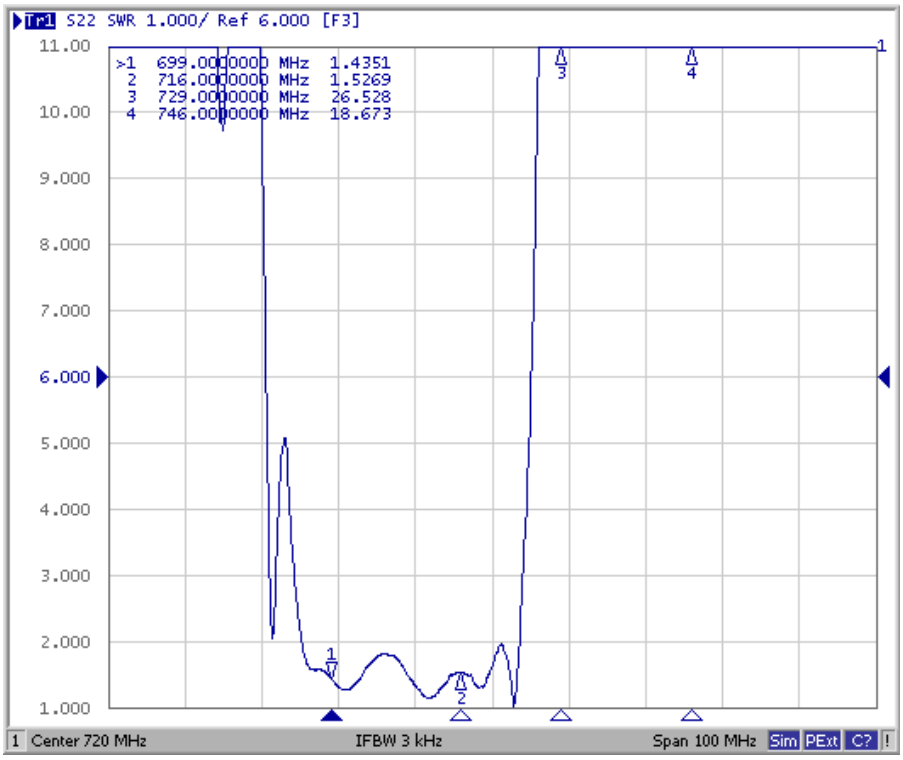


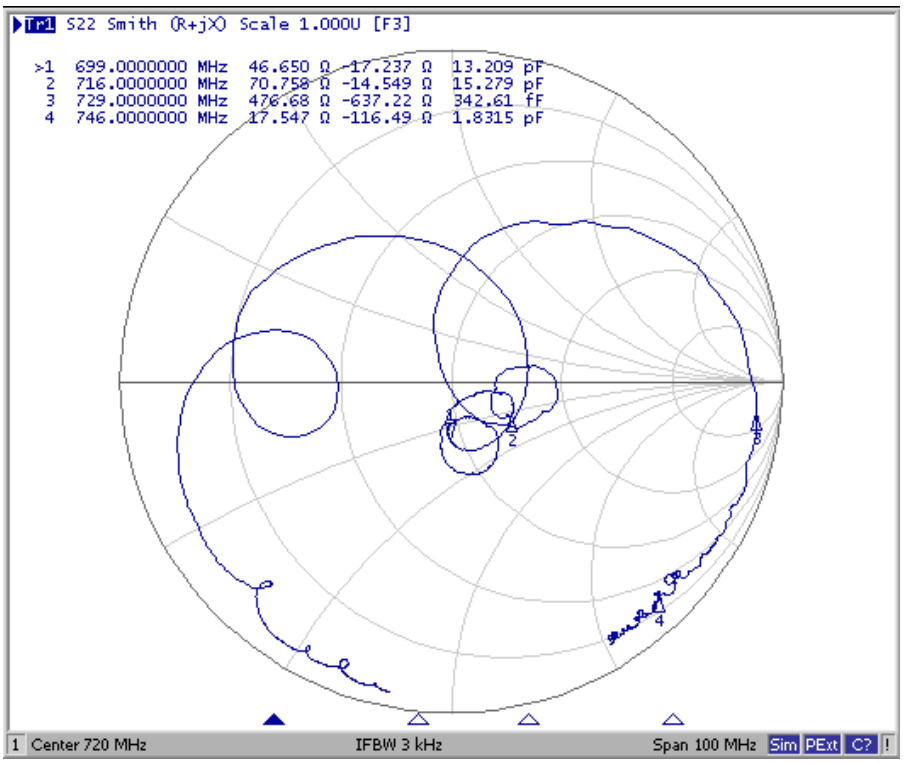
Tx to Rx Isolation



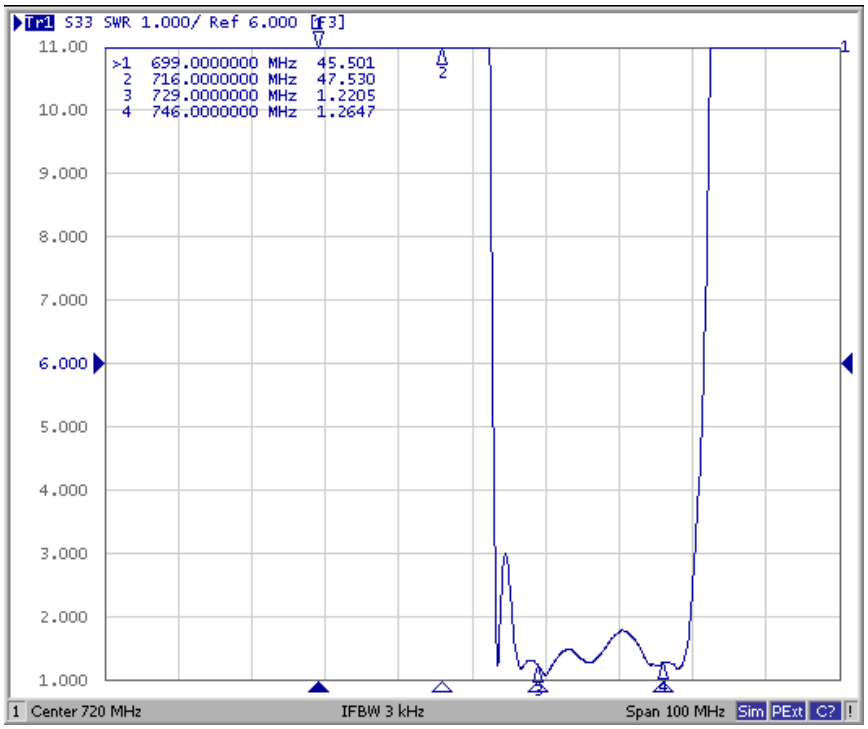
These data exclude loss that comes from the test board.

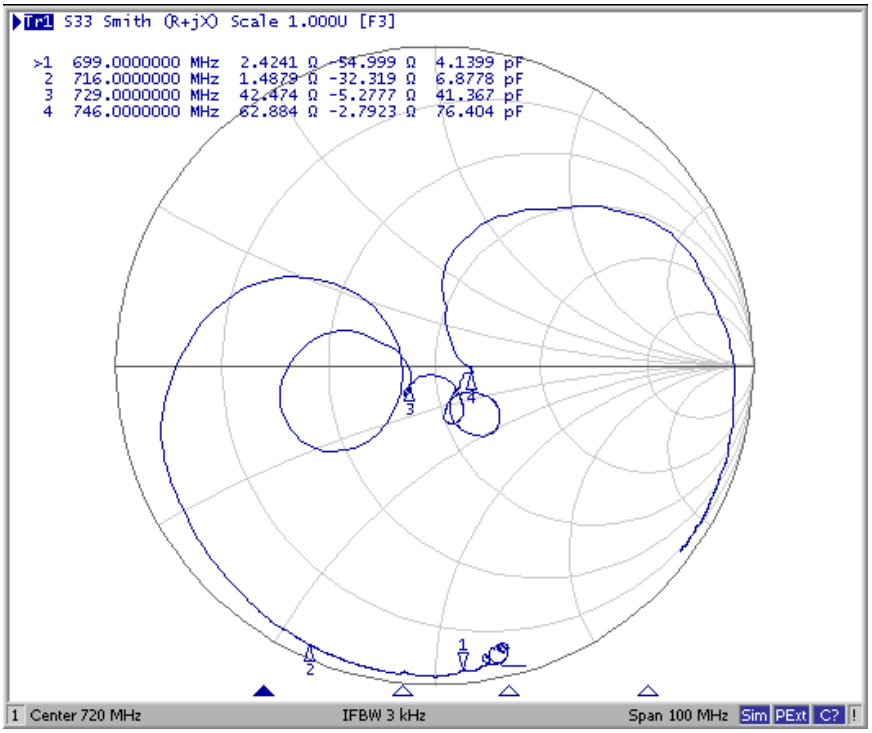
Tx Port


Tr1 S22 SWR 1.000/ Ref 6.000 [F3]
>1 699.0000000 MHz 1.4351
2 716.0000000 MHz 1.5269
3 729.0000000 MHz 26.528
4 746.0000000 MHz 18.673
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Center 720 MHz
IFBW 3 kHz
Span 100 MHz
Sim PExt C? !

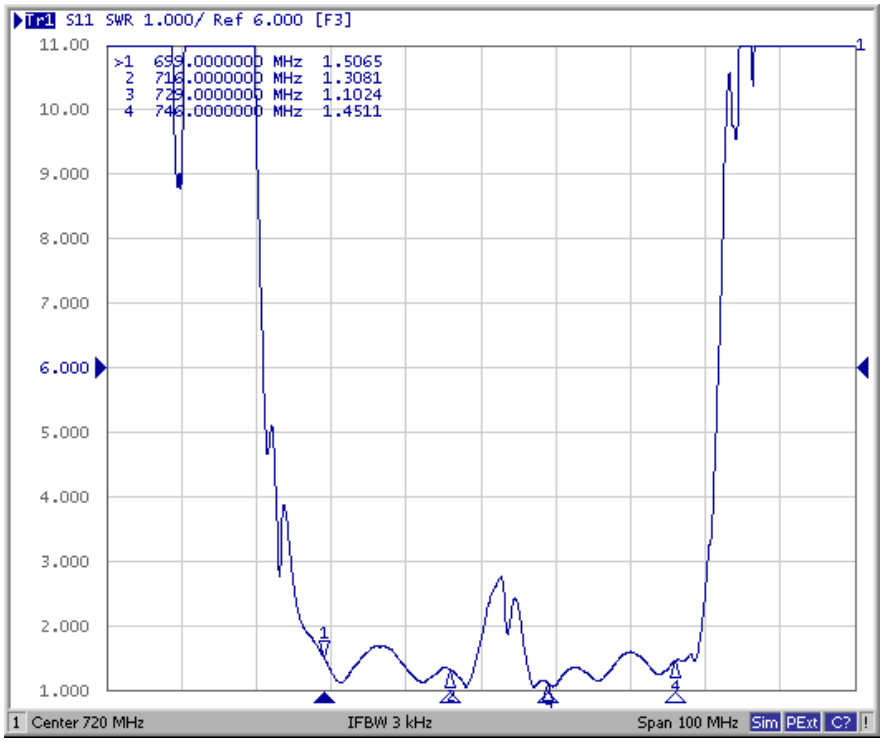

Tr1 S22 Smith (R+jX) Scale 1.000U [F3]
>1 699.0000000 MHz 46.650 Ω -17.237 Ω 13.209 pF
2 716.0000000 MHz 70.758 Ω -14.549 Ω 15.279 pF
3 729.0000000 MHz 476.68 Ω -637.22 Ω 342.61 fF
4 746.0000000 MHz 17.547 Ω -116.49 Ω 1.8315 pF
1 Center 720 MHz
IFBW 3 kHz
Span 100 MHz
Sim PExt C? !

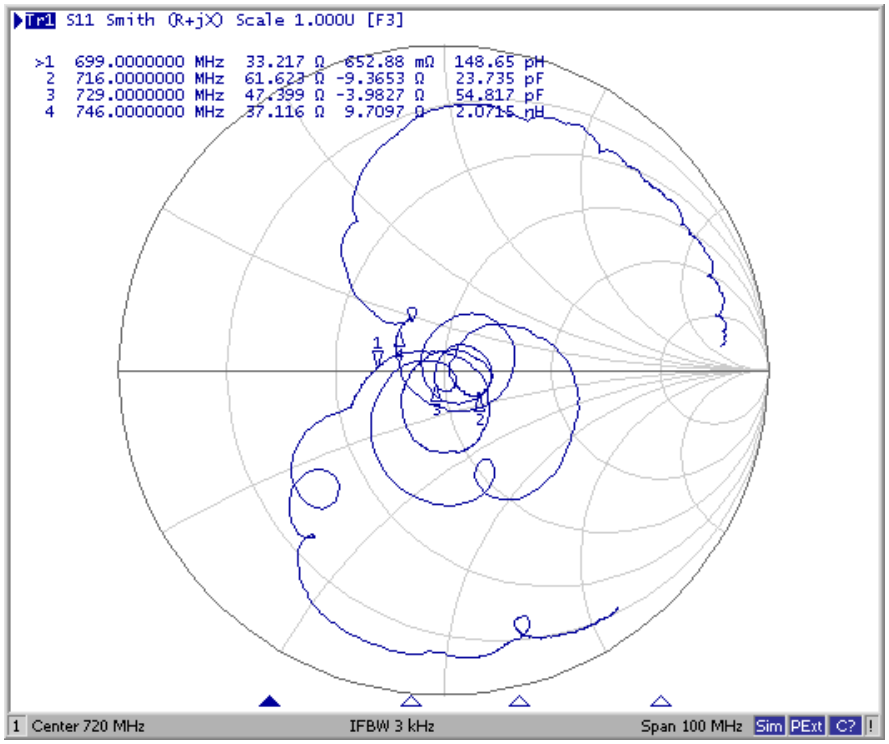
Rx Port


Tr1 S33 SWR 1.000/ Ref 6.000 [F3]
>1 699.0000000 MHz 45.501
2 716.0000000 MHz 47.530
3 729.0000000 MHz 1.2205
4 746.0000000 MHz 1.2647
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Center 720 MHz
IFBW 3 kHz
Span 100 MHz
Sim PExt C?

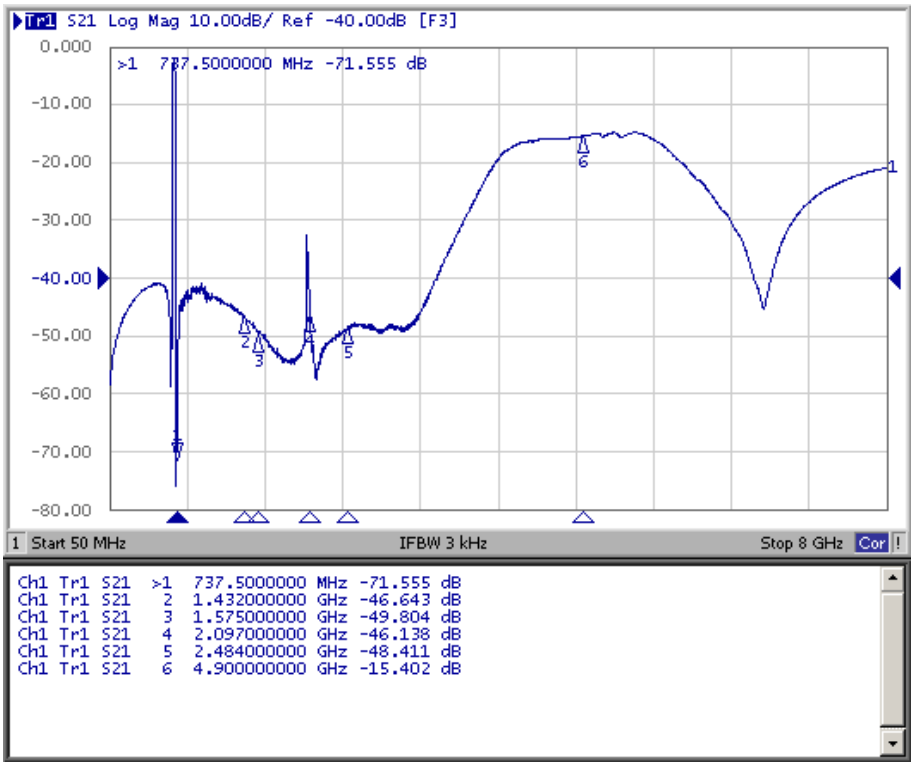

Tr1 S33 Smith (R+jX) Scale 1.000U [F3]
>1 699.0000000 MHz 2.4241 Ω -54.999 Ω 4.1399 pF
2 716.0000000 MHz 1.4879 Ω -32.319 Ω 6.8778 pF
3 729.0000000 MHz 42.474 Ω -5.2777 Ω 41.367 pF
4 746.0000000 MHz 62.884 Ω -2.7923 Ω 76.404 pF
1 Center 720 MHz
IFBW 3 kHz
Span 100 MHz
Sim PExt C?

Ant Port

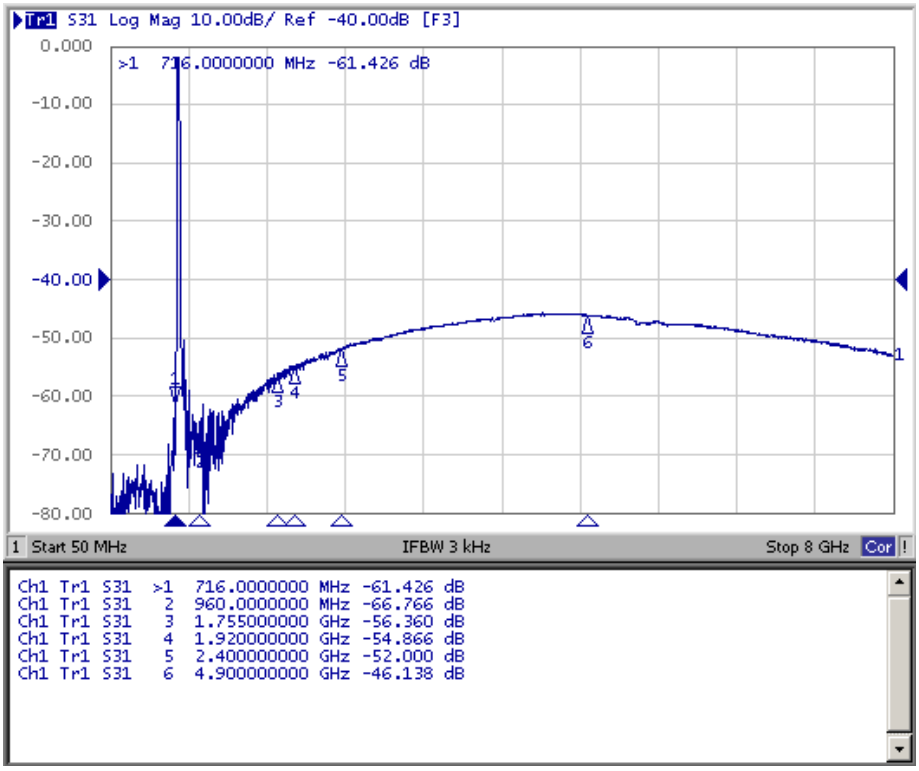

Tr1 S11 SWR 1.000/ Ref 6.000 [F3]
>1 699.0000000 MHz 1.5065
2 716.0000000 MHz 1.3081
3 729.0000000 MHz 1.1024
4 746.0000000 MHz 1.4511
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Center 720 MHz
IFBW 3 kHz
Span 100 MHz
Sim PExt C?


Tr1 S11 Smith (R+jX) Scale 1.000U [F3]
>1 699.0000000 MHz 33.217 Ω 652.88 mΩ 148.65 pH
2 716.0000000 MHz 61.623 Ω -9.3653 Ω 23.735 pF
3 729.0000000 MHz 47.399 Ω -3.9827 Ω 54.817 pF
4 746.0000000 MHz 37.116 Ω 9.7097 Ω 2.0715 nH
1 Center 720 MHz
IFBW 3 kHz
Span 100 MHz
Sim PExt C?

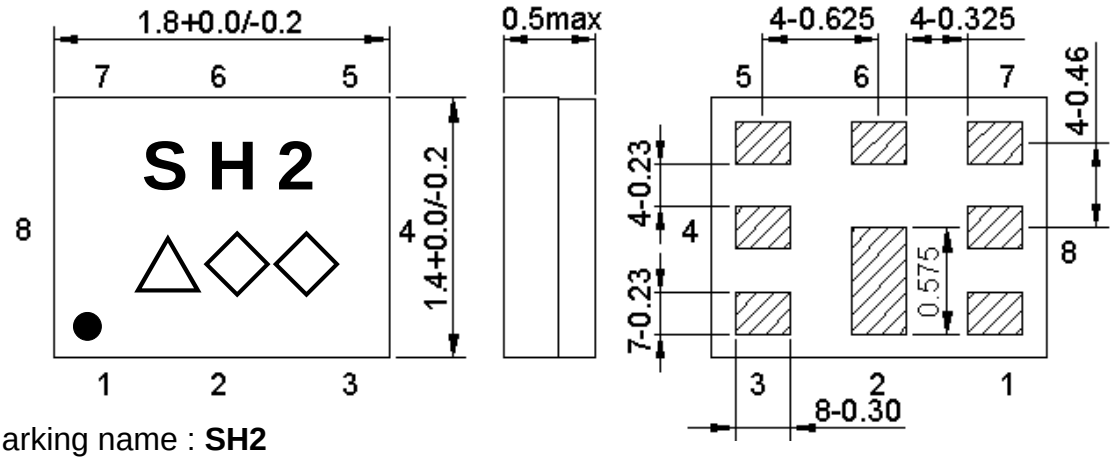
Tx to Ant (Wide Span)



Ant to Rx (Wide Span)



D.<u>OUTLINE DRAWIN</u>(Mass Production):



Marking name : **SH2**

△: Date code(2020 May → s ,…….., 2027 Dec→m.)

◇◇: Lot Code.

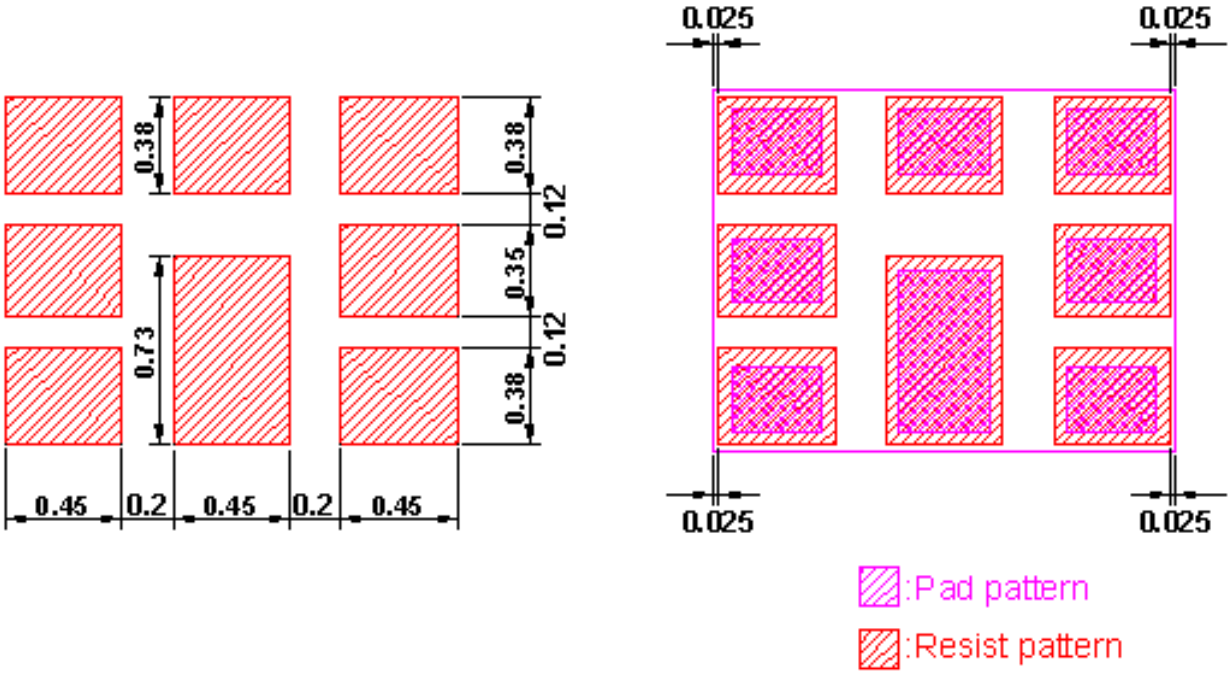
Product Date Code. Follow below table.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2020/2024	n	p	q	r	s	t	u	v	w	x	y	z
2021/2025	A	B	C	D	E	F	G	H	J	K	L	M
2022/2026	N	P	Q	R	S	T	U	∇	W	X	Y	Z
2023/2027	a	b	c	d	e	f	g	h	j	k	l	m

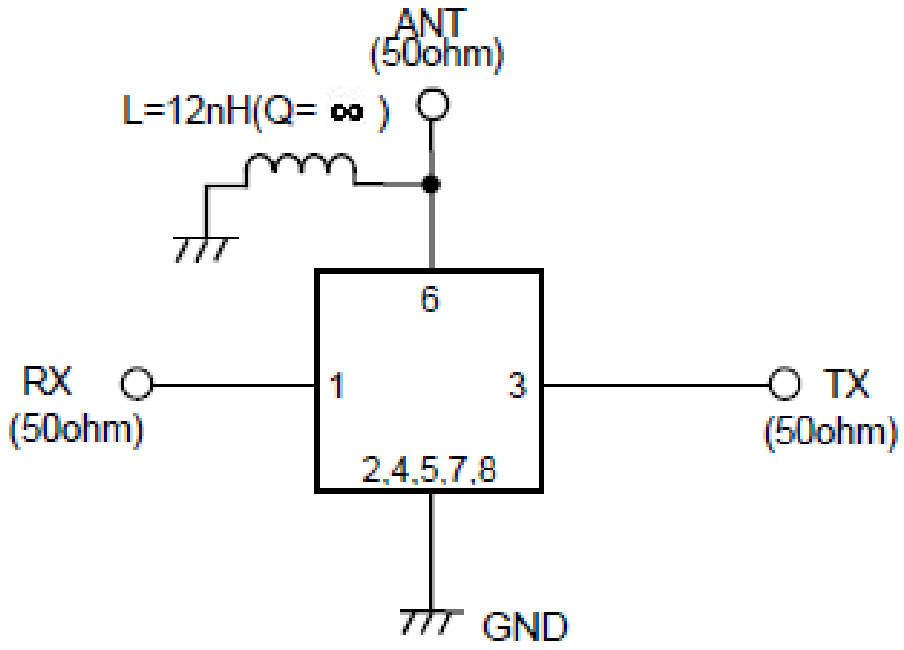
<u>Pin Configuration:</u>

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

E. FOOTPRINT:



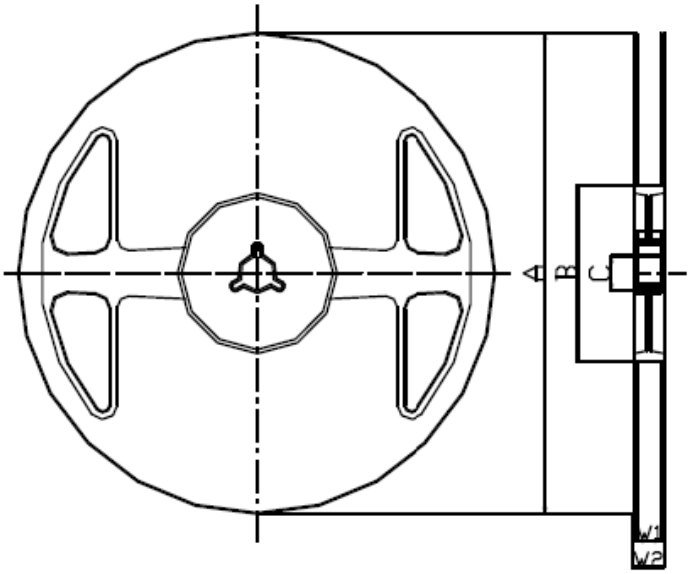
F. EVALUATION CIRCUIT:



G. PACKING:

1. REEL DIMENSION

(Please refer to FR-75D10 for packing quantity)



Materials of Reel

Material : Polystyrene + Carbon

Characteristics : Conforms to EIAJ-ET-7200A

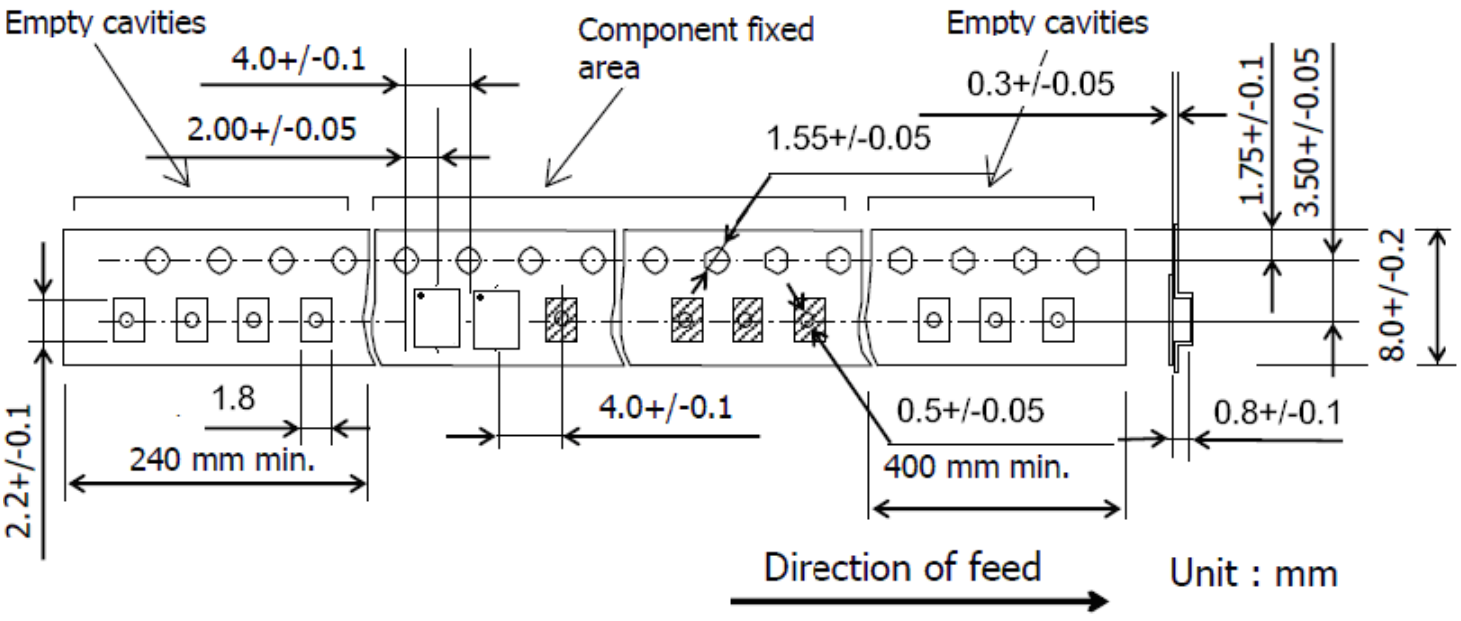
Color : Black

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.