



TAI-SAW TECHNOLOGY CO., LTD.

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Product Specifications Approval Sheet

Product Description: SAW DPX 1950 / 2140 MHz Band 1 SMD 1.8X1.4 mm (BW=60 MHz)

TST Part No.: TF0120DB

Customer Part No.: _____

Customer signature required
Company: _____
Division: _____
Approved by : _____
Date: _____

Checked by: _____ Nina Chen *Nina Chen*

Approved by: _____ Kazuma Lee *Kazuma Lee*

Date: _____ 2022/08/24

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 1950 / 2140 MHz Band 1 SMD 1.8X1.4 mm (BW=60 MHz)

MODEL NO.:TF0120DB

REV.2.0

A. MAXIMUM RATING:

1. Operating temperature range: -40 °C to +85 °C
2. Storage temperature range: -40 °C to +85 °C
3. Tx Input power : 29dBm (Ta=+50°C,50000h,CW)
- 3.1Rx Input power : 10dBm
4. Maximum DC Voltage: 0 V
5. Moisture Sensitivity Level: Level 3 (MSL 3)
6. ESD 50V(MM) 100V(HBM)

RoHS Compliant
Lead free
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 Ω (Single-ended)

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

Parameters Description		Unit	Min	Typ	Max	Remarks
Insertion Loss	1920 ~ 1980 MHz	dB	-	1.7	2.8	
Amplitude ripple	1920 ~ 1980 MHz	dB	-	0.4	1.3	(Over any 5MHz in-band)
VSWR	ANT	1920 ~ 1980 MHz	-	1.6	2.2	
	Tx	1920 ~ 1980 MHz	-	1.5	2.2	
Attenuation:						
10.00 ~ 1574.00 MHz		dB	32	36		
420.00 ~ 494.00 MHz		dB	45	52		
815.00 ~ 830.00 MHz		dB	37	43		
824.00 ~ 849.00 MHz		dB	37	43		
830.00 ~ 845.00 MHz		dB	37	43		
843.00 ~ 894.00 MHz		dB	37	42		
880.00 ~ 915.00 MHz		dB	35	42		
925.00 ~ 960.00 MHz		dB	35	41		
1226.00 ~ 1250.00 MHz		dB	32	37		
1447.90 ~ 1462.90 MHz		dB	32	36		
1475.00 ~ 1496.00 MHz		dB	32	36		
1496.00 ~ 1511.00 MHz		dB	32	36		
1559.00 ~ 1563.00 MHz		dB	32	36		
1565.42 ~ 1573.37 MHz		dB	32	36		

1573.37 ~ 1577.47 MHz	dB	32	36		
1577.47 ~ 1585.42 MHz	dB	32	36		
1597.55 ~ 1605.89 MHz	dB	32	37		
1605.88 ~ 1805.00 MHz	dB	32	37		
1805.00 ~ 1865.00 MHz	dB	21	26		
1865.00 ~ 1880.00 MHz	dB	20	24		
2110.00 ~ 2170.00 MHz	dB	42	45		
2400.00 ~ 2500.00 MHz	dB	37	39		
2620.00 ~ 2690.00 MHz	dB	30	34		
3840.00 ~ 3960.00 MHz	dB	18	23		
4900.00 ~ 5950.00 MHz	dB	10	21		
4905.00 ~ 5845.00 MHz	dB	10	21		
7680.00 ~ 7920.00 MHz	dB	5	16		

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

Parameters Description		Unit	Min	Typ	Max	Remarks
Insertion Loss	2110 ~ 2170 MHz	dB	-	2.2	2.8	
Amplitude ripple	2110 ~ 2170 MHz	dB		0.4	1.0	(Over any 5MHz in-band)
VSWR	ANT	2110 ~ 2170 MHz		1.9	2.3	
	Rx			-	1.8	
Attenuation:						
1.00 ~ 1920.00 MHz		dB	32	42		
190.00 MHz		dB	50	75		
718.00 ~ 748.00 MHz		dB	40	52		
814.00 ~ 849.00 MHz		dB	40	50		
880.00 ~ 915.00 MHz		dB	40	49		
1427.00 ~ 1447.00 MHz		dB	37	44		
1447.00 ~ 1463.00 MHz		dB	37	44		
1730.00 ~ 1790.00 MHz		dB	37	43		
1710.00 ~ 1785.00 MHz		dB	37	43		
1920.00 ~ 1980.00 MHz		dB	48	51		
1980.00 ~ 2015.00 MHz		dB	40	48		
2015.00 ~ 2075.00 MHz		dB	8	34		
2255.00 ~ 6130.00 MHz		dB	23	41		
2400.00 ~ 2500.00 MHz		dB	40	47		
2500.00 ~ 2570.00 MHz		dB	40	47		
4030.00 ~ 4150.00 MHz		dB	45	52		
4220.00 ~ 4340.00 MHz		dB	45	52		
4900.00 ~ 5950.00 MHz		dB	25	43		
5950.00 ~ 6130.00 MHz		dB	23	41		
6130.00 ~ 6330.00 MHz		dB	20	38		
6330.00 ~ 6510.00 MHz		dB	15	36		

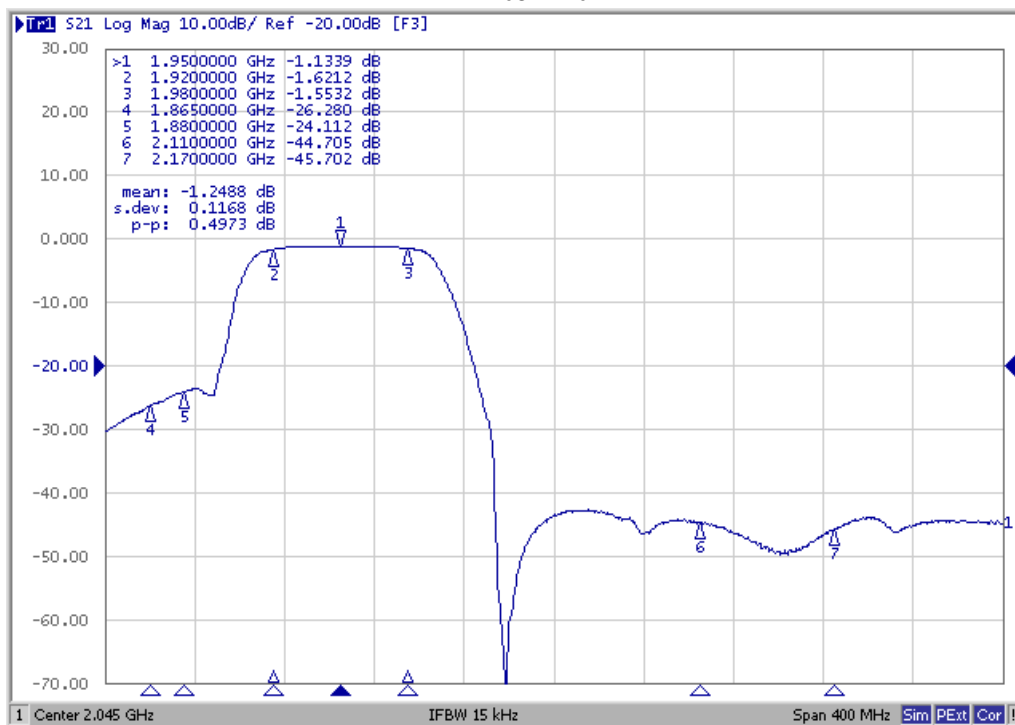
Tx to Rx

Parameters	Description	Unit	Min	Typ	Max	Remarks
Isolation	1574.00 ~ 1577.00 MHz	dB	40	55	-	
	1920.00 ~ 1980.00 MHz	dB	51	55	-	
	2110.00 ~ 2170.00 MHz	dB	49	53		
	3830.00 ~ 3970.00 MHz	dB	35	48		
	5750.00 ~ 5950.00 MHz	dB	23	41		

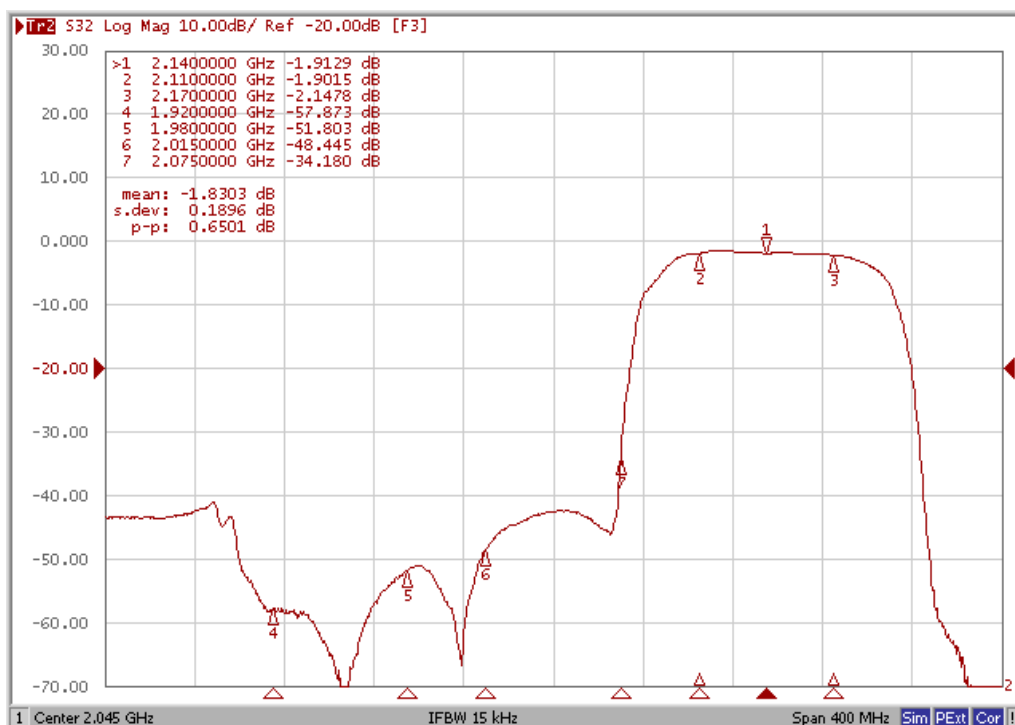
Notes : (1) With Matching Network

C. FREQUENCY CHARACTERISTICS:

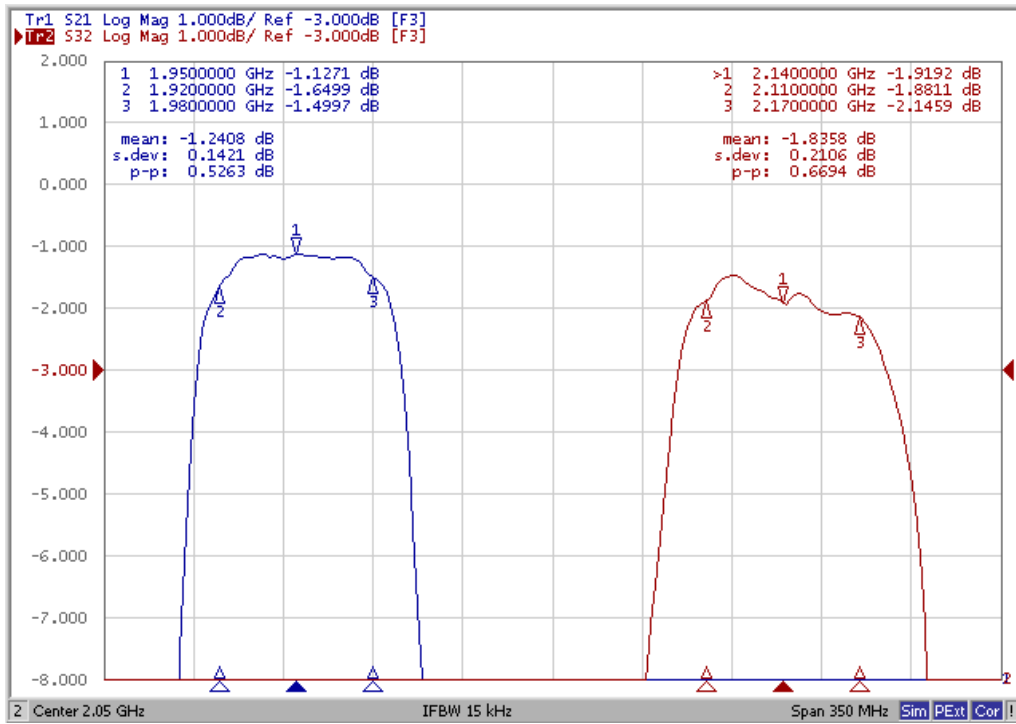
Tx to Ant



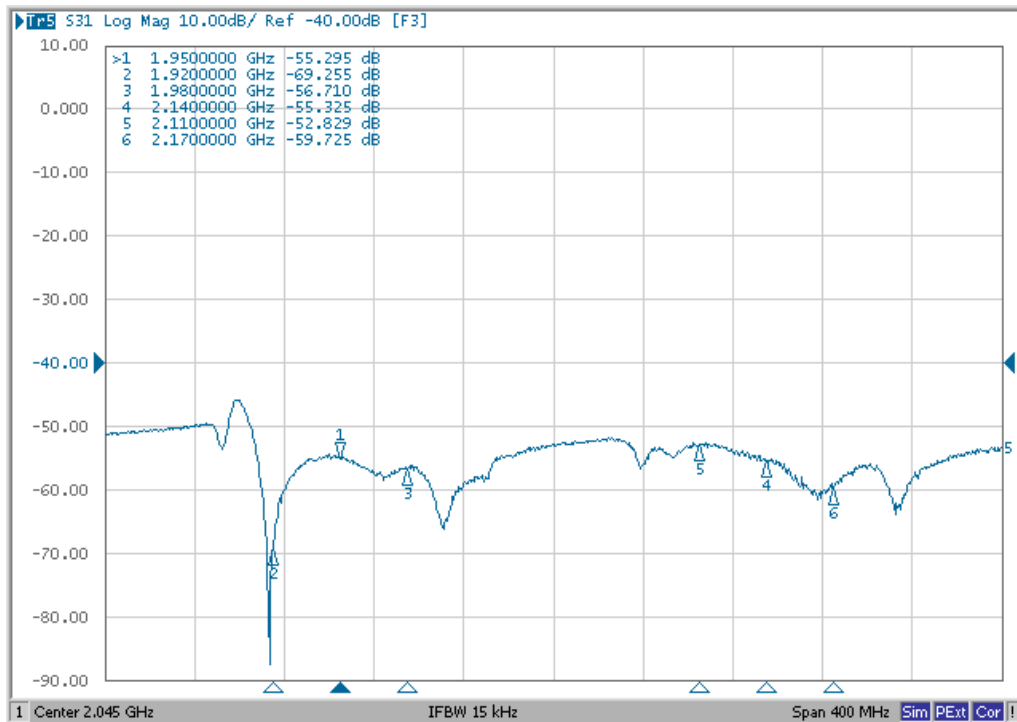
Ant to Rx



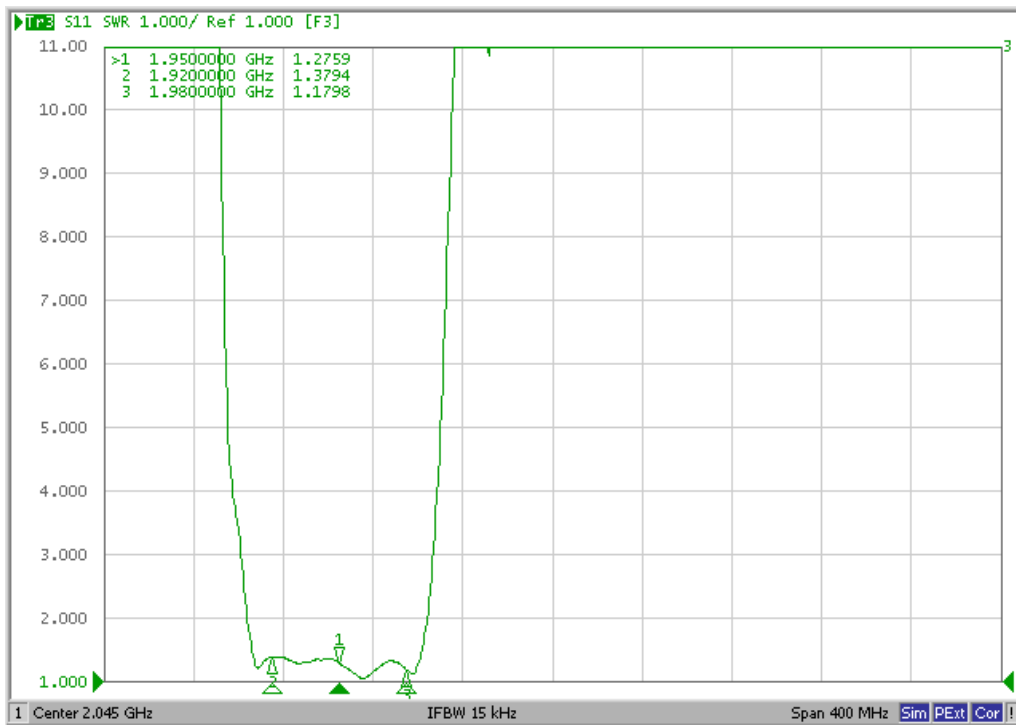
Ripple Deviation



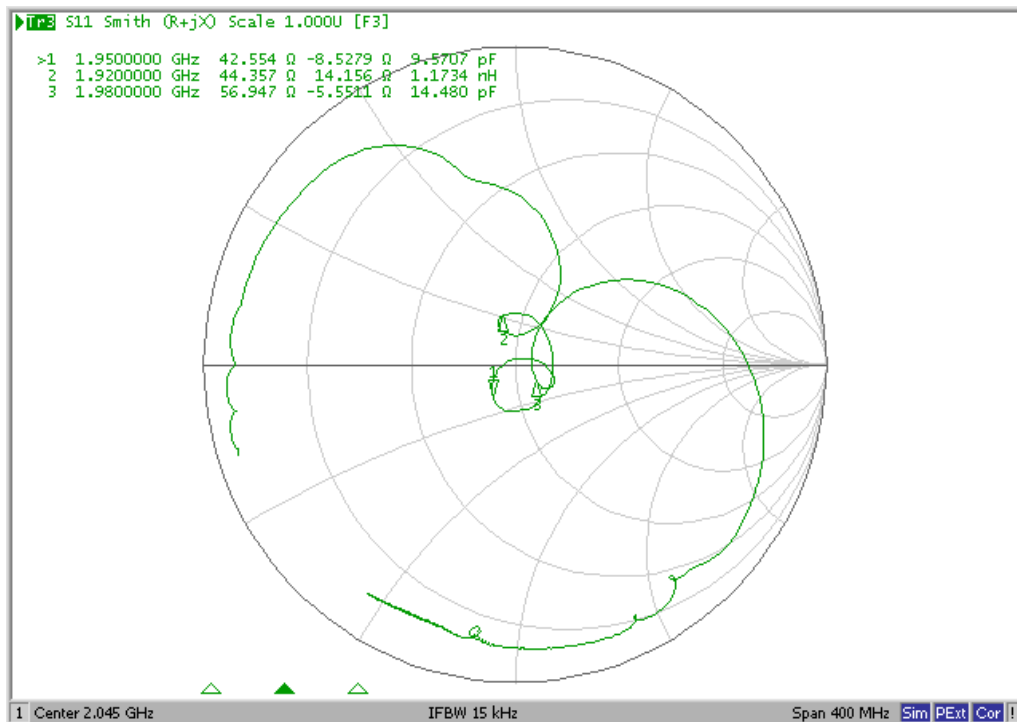
Isolation



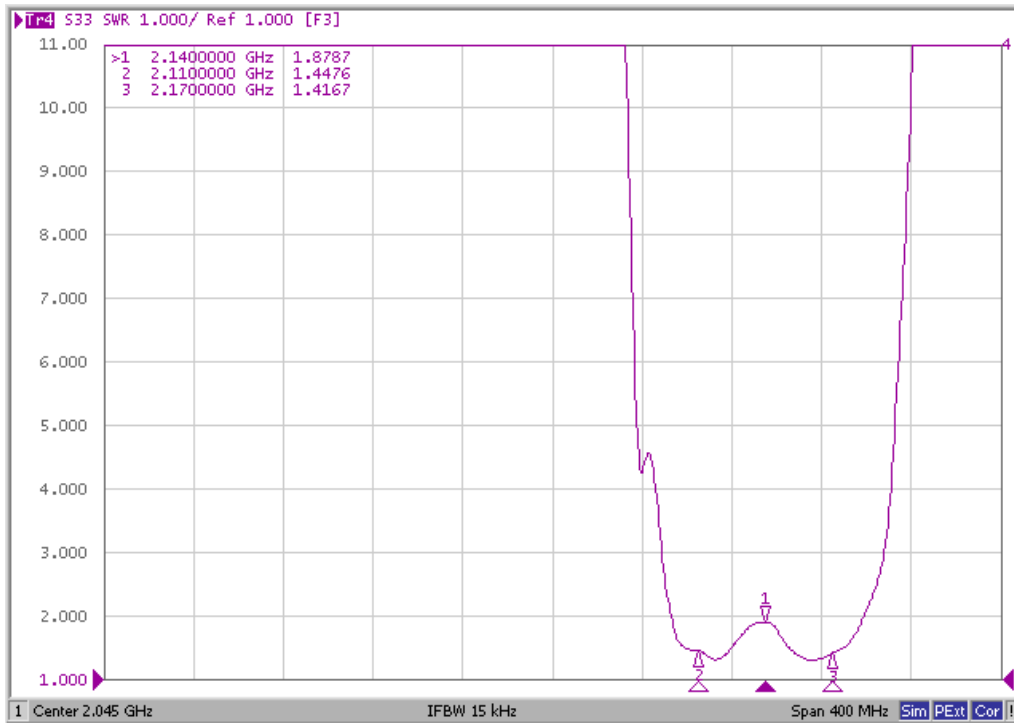
VSWR (Tx Port)



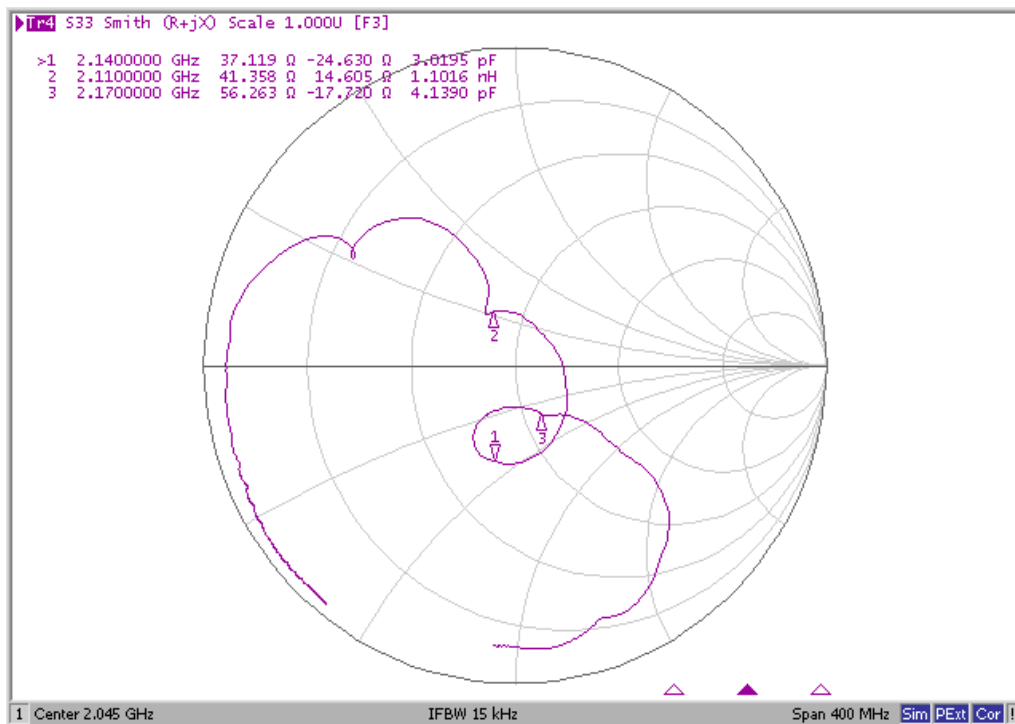
Smith Chart (Tx Port)



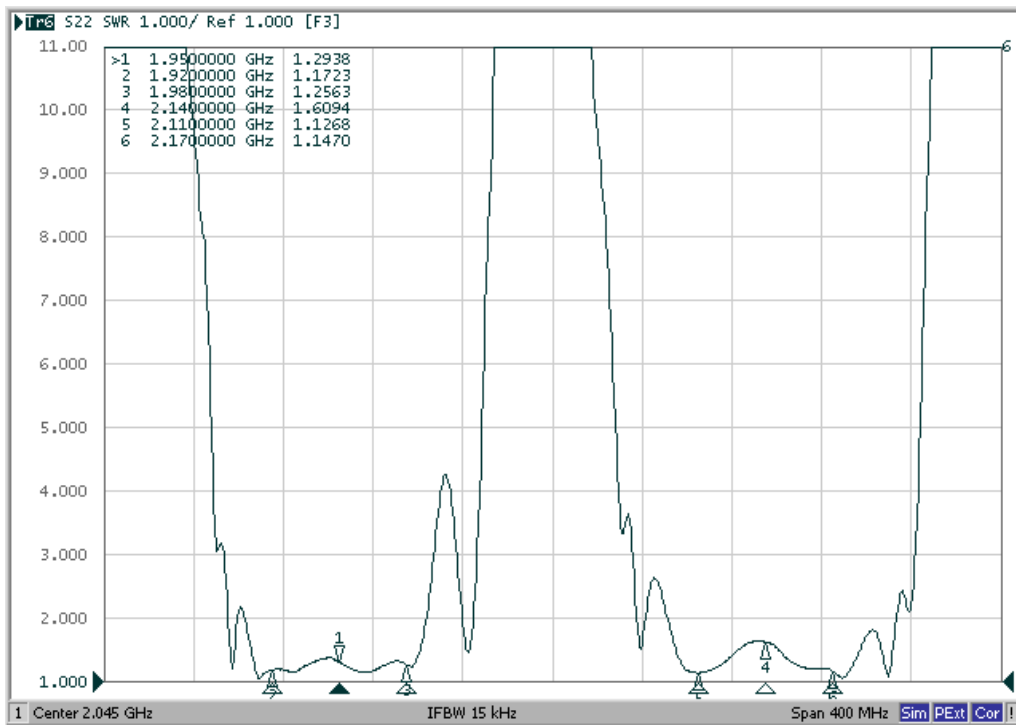
VSWR (Rx Port)



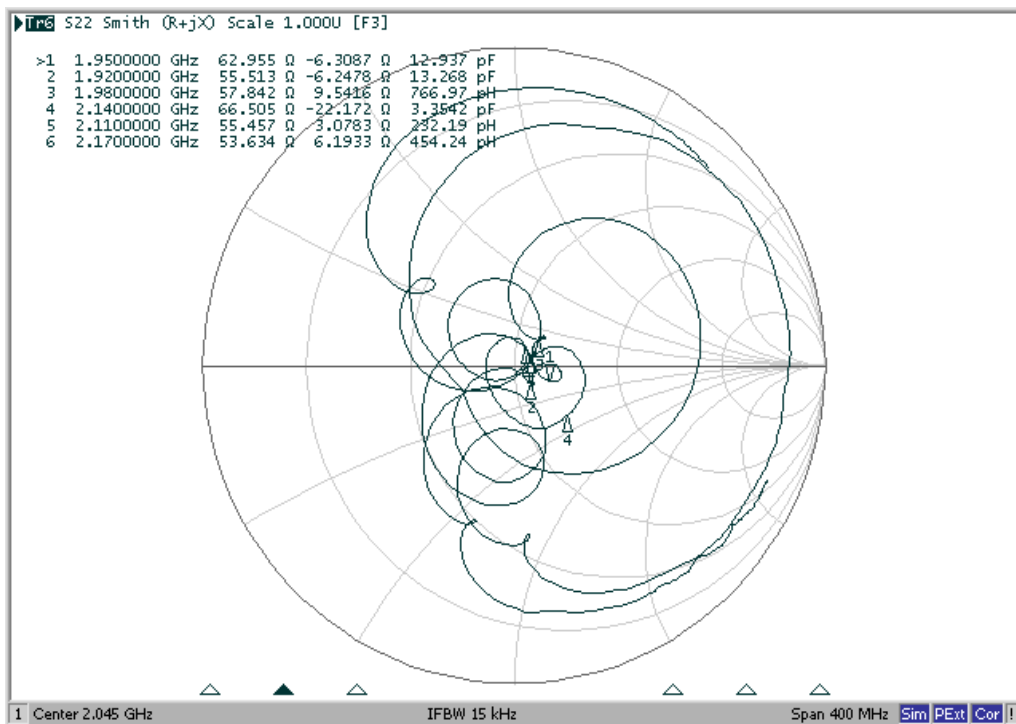
Smith Chart (Rx Port)



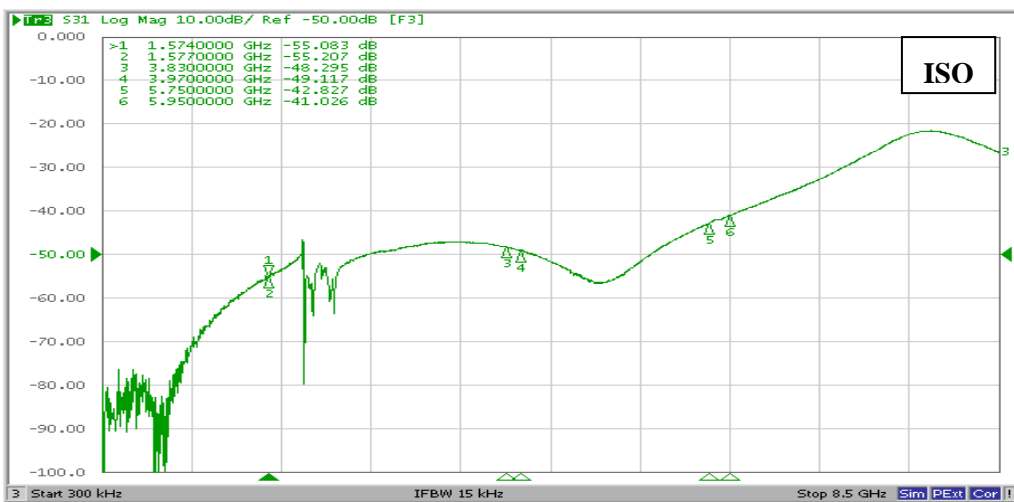
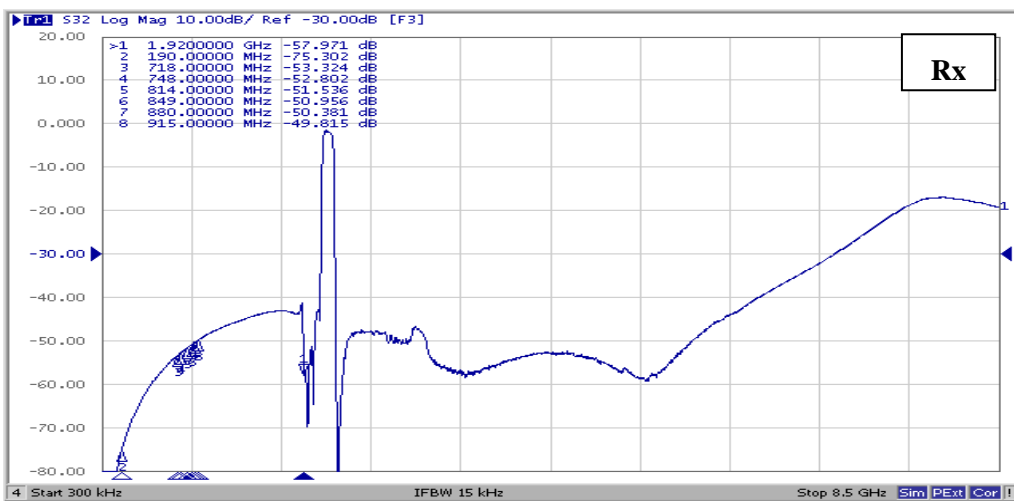
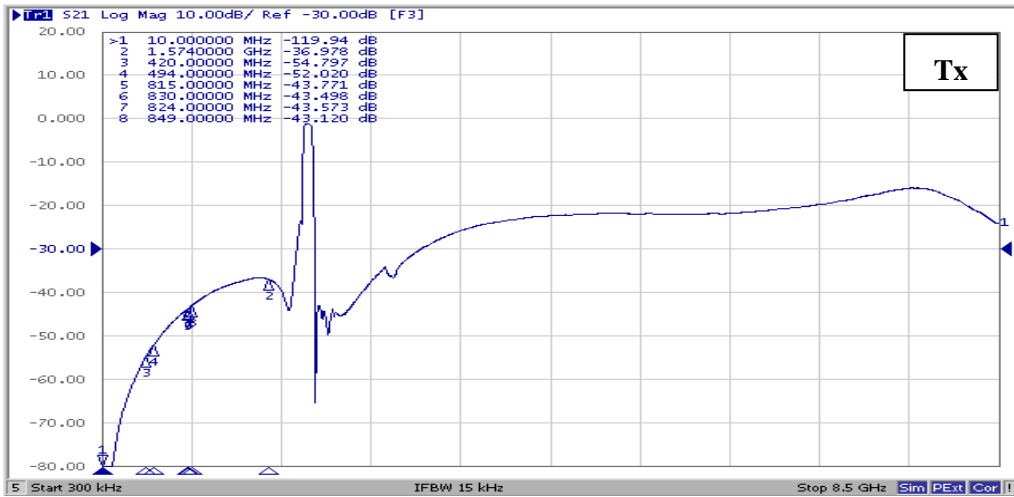
VSWR (ANT Port)



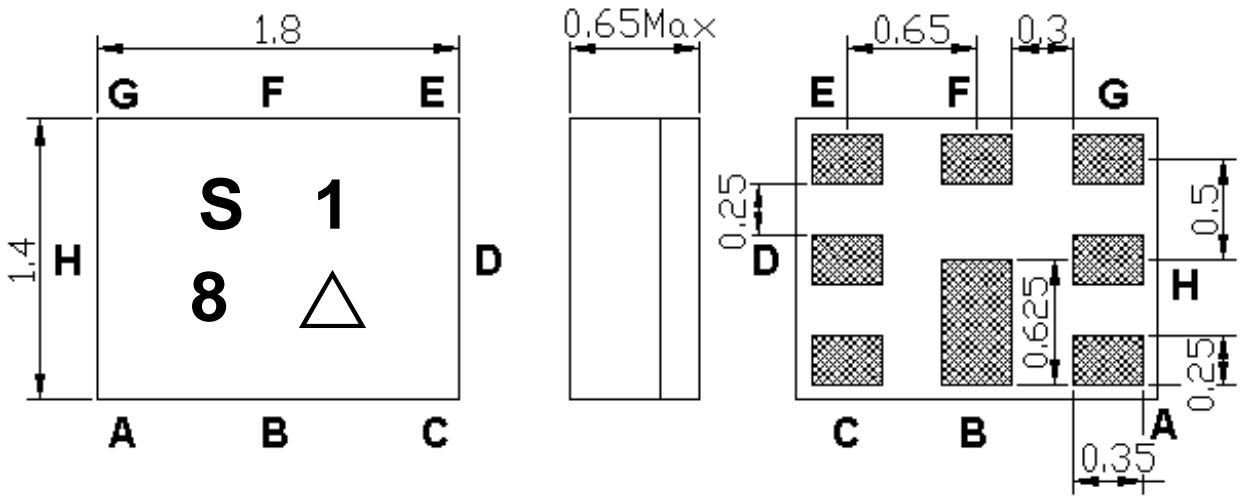
Smith Chart (ANT Port)



Wide Span



**D.OUTLINE DRAWIN:
(Mass Production)**



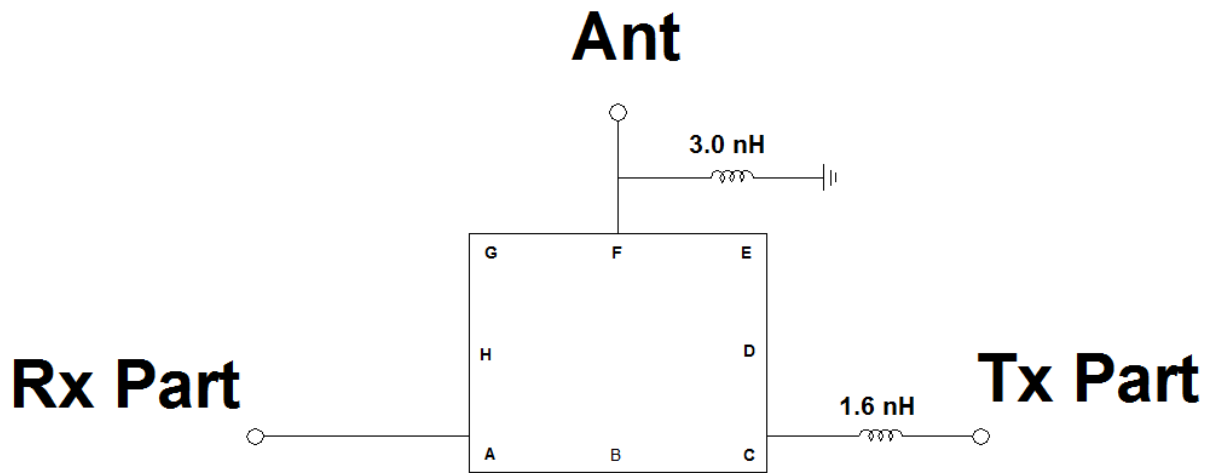
Marking Descriptions	
S	Marking name
1	Band Class
8	Series Number
△	Date Code(Year+Month)

Pin Description	
B,D,E,G,H	Ground
F	Ant
C	Tx (1950.0MHz)
A	Rx (2140.0MHz)

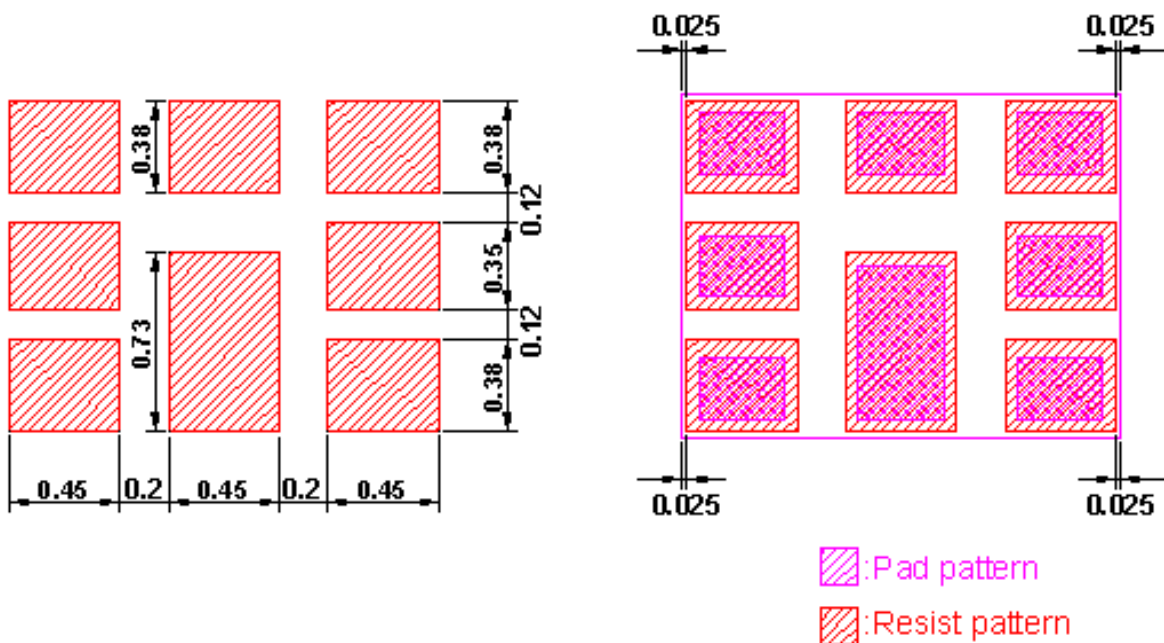
△ : Date Code(Year+Month) .Follow the table. (8-year cycle)

YEAR/Month	1	2	3	4	5	6	7	8	9	10	11	12
2013 / 2021	A	B	C	D	E	F	G	H	J	K	L	M
2014 / 2022	N	P	Q	R	S	T	U	V	W	X	Y	Z
2015 / 2023	a	b	c	d	e	f	g	h	j	k	l	m
2016 / 2024	n	p	q	r	s	t	u	v	w	x	y	z
2017 / 2025	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>J</u>	<u>K</u>	<u>L</u>	<u>M</u>
2018 / 2026	<u>N</u>	<u>P</u>	<u>Q</u>	<u>R</u>	<u>S</u>	<u>T</u>	<u>U</u>	<u>V</u>	<u>W</u>	<u>X</u>	<u>Y</u>	<u>Z</u>
2019 / 2027	<u>a</u>	<u>b</u>	<u>c</u>	<u>d</u>	<u>e</u>	<u>f</u>	<u>g</u>	<u>h</u>	<u>i</u>	<u>k</u>	<u>l</u>	<u>m</u>
2020 / 2028	<u>n</u>	<u>p</u>	<u>q</u>	<u>r</u>	<u>s</u>	<u>t</u>	<u>u</u>	<u>v</u>	<u>w</u>	<u>x</u>	<u>y</u>	<u>z</u>

E. Evaluation Circuit



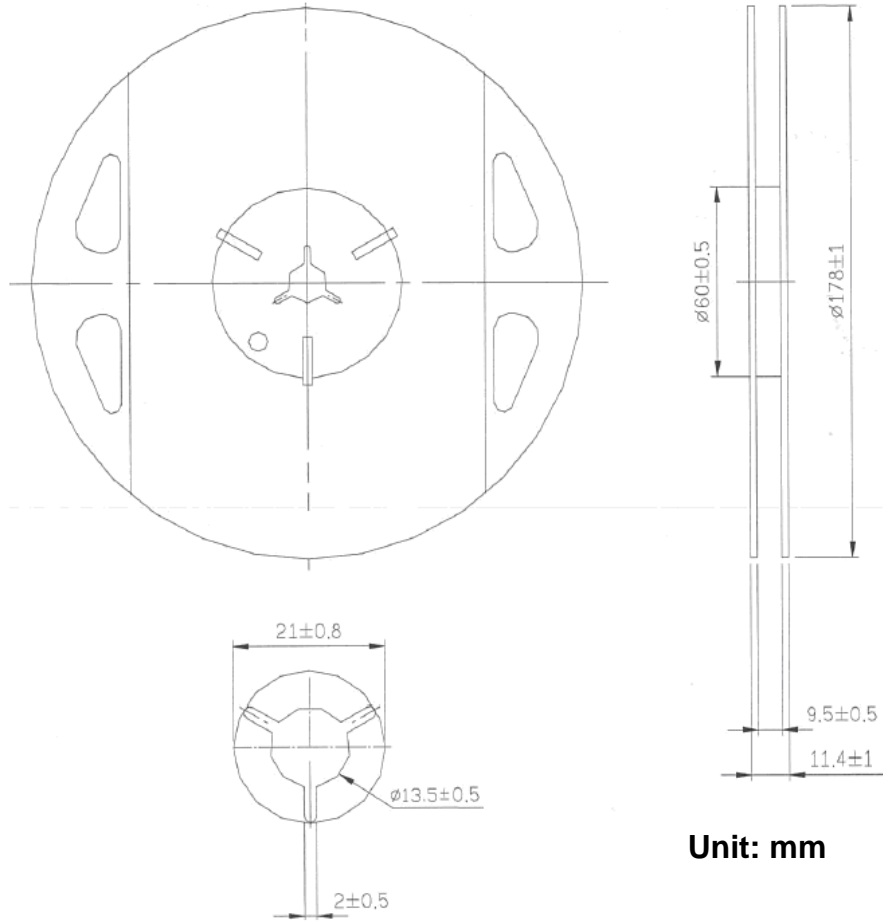
F. FOOTPRINT:



G. PACKING:

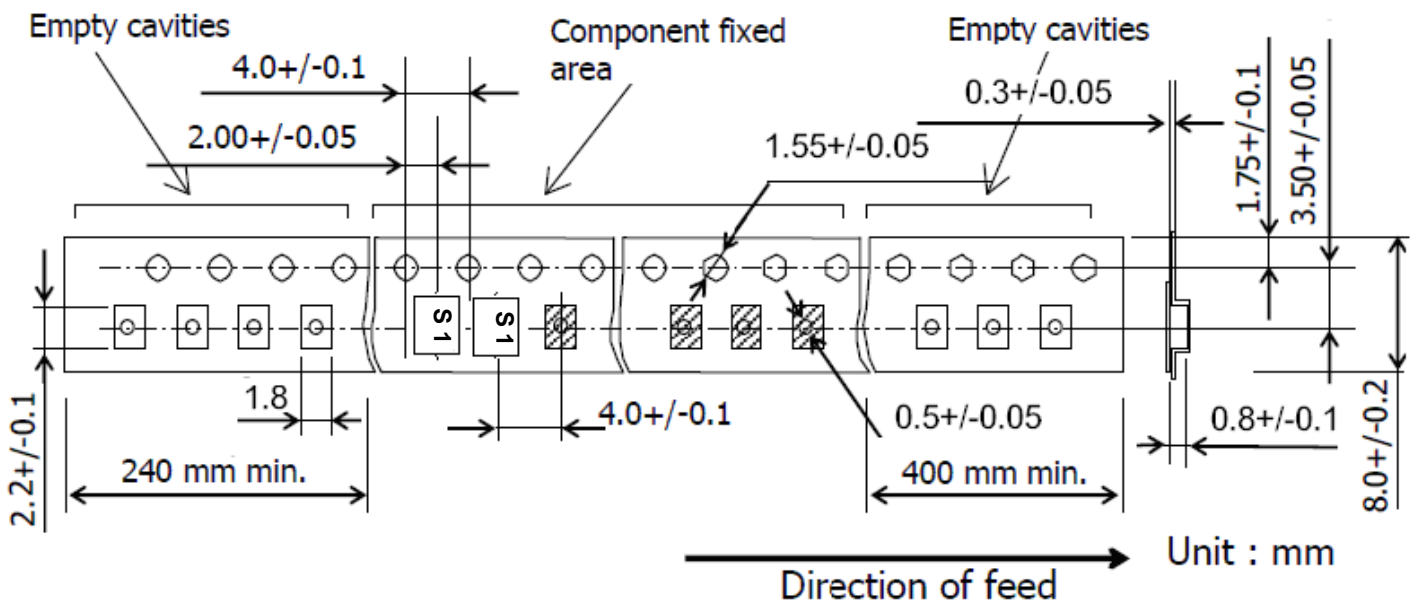
1. REEL DIMENSION

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



Unit: mm

2. TAPE DIMENSION



Unit : mm

H. 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.

