

# SAW DPX 836.5/881.5 MHz Band 5 SMD 1.8X1.4 mm (BW=25 MHz)

MODEL NO.:TF0123DB

REV.1.0

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



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 ( $f_{T0}=836.5$ MHz)

Parameters Description		Unit	Min	Typ	Max	Remarks
Insertion Loss	824 ~ 849 MHz	dB	-	1.6	2.3	
Amplitude ripple	824 ~ 849 MHz	dB	-	0.6	1.5	
VSWR	ANT	824 ~ 849 MHz	-	1.7	2.0	
	Tx	824 ~ 849 MHz	-	1.7	2.0	

### Attenuation:

10 ~ 420 MHz	dB	35	39	-	
420 ~ 494 MHz	dB	35	38	-	
494 ~ 701 MHz	dB	33	37	-	
699 ~ 716 MHz	dB	35	42	-	
701 ~ 728 MHz	dB	35	42	-	
704 ~ 716 MHz	dB	35	42	-	
728 ~ 764 MHz	dB	35	40	-	
764 ~ 804 MHz	dB	30	35	-	
860 ~ 869 MHz	dB	4.5	12	-	
869 ~ 894 MHz	dB	45	47	-	
1559 ~ 1563 MHz	dB	25	29	-	
1565.42 ~ 1573.37 MHz	dB	25	29	-	
1573.37 ~ 1577.47 MHz	dB	25	29	-	
1577.47 ~ 1585.42 MHz	dB	25	29	-	
1597.55 ~ 1605.89 MHz	dB	25	29	-	

1683 ~ 1708 MHz	dB	25	28		
1710 ~ 1785 MHz	dB	25	27		
1844.9 ~ 1879.9 MHz	dB	23	26		
1884.5 ~ 1919.6 MHz	dB	23	26		
1920 ~ 1980 MHz	dB	22	26		
2110 ~ 2170 MHz	dB	20	25		
2400 ~ 2494 MHz	dB	20	23		
3286 ~ 3406 MHz	dB	15	19		
4110 ~ 4255 MHz	dB	12	22		
4900 ~ 5950 MHz	dB	10	25		
6582 ~ 6802 MHz	dB	15	32		
7406 ~ 7651 MHz	dB	15	38		

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

Parameters Description		Unit	Min	Typ	Max	Remarks
Insertion Loss	871.5 ~ 891.5 MHz	dB	-	1.9	2.3	
Amplitude ripple	869 ~ 894 MHz	dB	-	0.6	1.5	
VSWR	Rx	869 ~ 894 MHz	-	1.8	2.2	
	ANT		-	1.8	2.2	
<b>Attenuation:</b>						
10 ~ 477 MHz		dB	35	45	-	
45 MHz		dB	50	80	-	
447 ~ 824 MHz		dB	32	43		
779 ~ 804 MHz		dB	35	45		
824 ~ 849 MHz		dB	50	55	-	
1693 ~ 1743 MHz		dB	40	55	-	
1710 ~ 1785 MHz		dB	40	55		
1788 ~ 1788 MHz		dB	40	57		
1850 ~ 1920 MHz		dB	40	58		
1920 ~ 1980 MHz		dB	40	57		
1980 ~ 2400 MHz		dB	40	53		
2305 ~ 2315 MHz		dB	40	53		
2400 ~ 2500 MHz		dB	40	52		
2467 ~ 2494 MHz		dB	40	52		
2517 ~ 2592 MHz		dB	35	43		
2607 ~ 2682 MHz		dB	35	51		
3476 ~ 3576 MHz		dB	30	50		
4345 ~ 4470 MHz		dB	25	41		
4900 ~ 5950 MHz		dB	20	38		
5214 ~ 5364 MHz		dB	25	36		
6083 ~ 6258 MHz		dB	20	40		
6952 ~ 7152 MHz		dB	15	41		

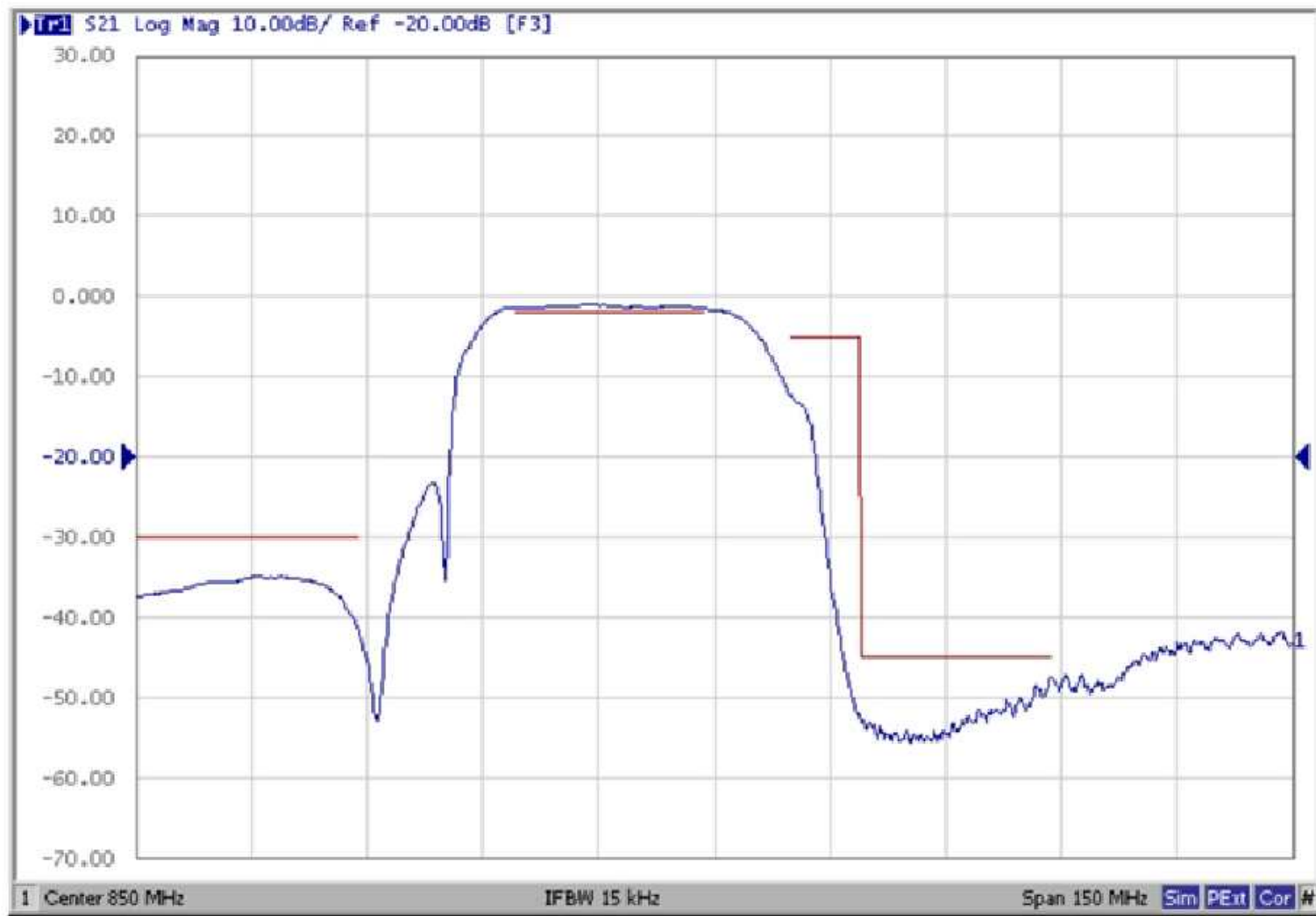
**Tx to Rx**

Isolation	824 ~ 849 MHz	dB	53	57	-	
	869 ~ 894 MHz	dB	50	53	-	
	1574 ~ 1577 MHz	dB	40	58		
	1683 ~ 1708 MHz	dB	20	58		
	2462 ~ 2557 MHz	dB	20	66		

**Notes :** (1) With Matching Network

## C. FREQUENCY CHARACTERISTICS:

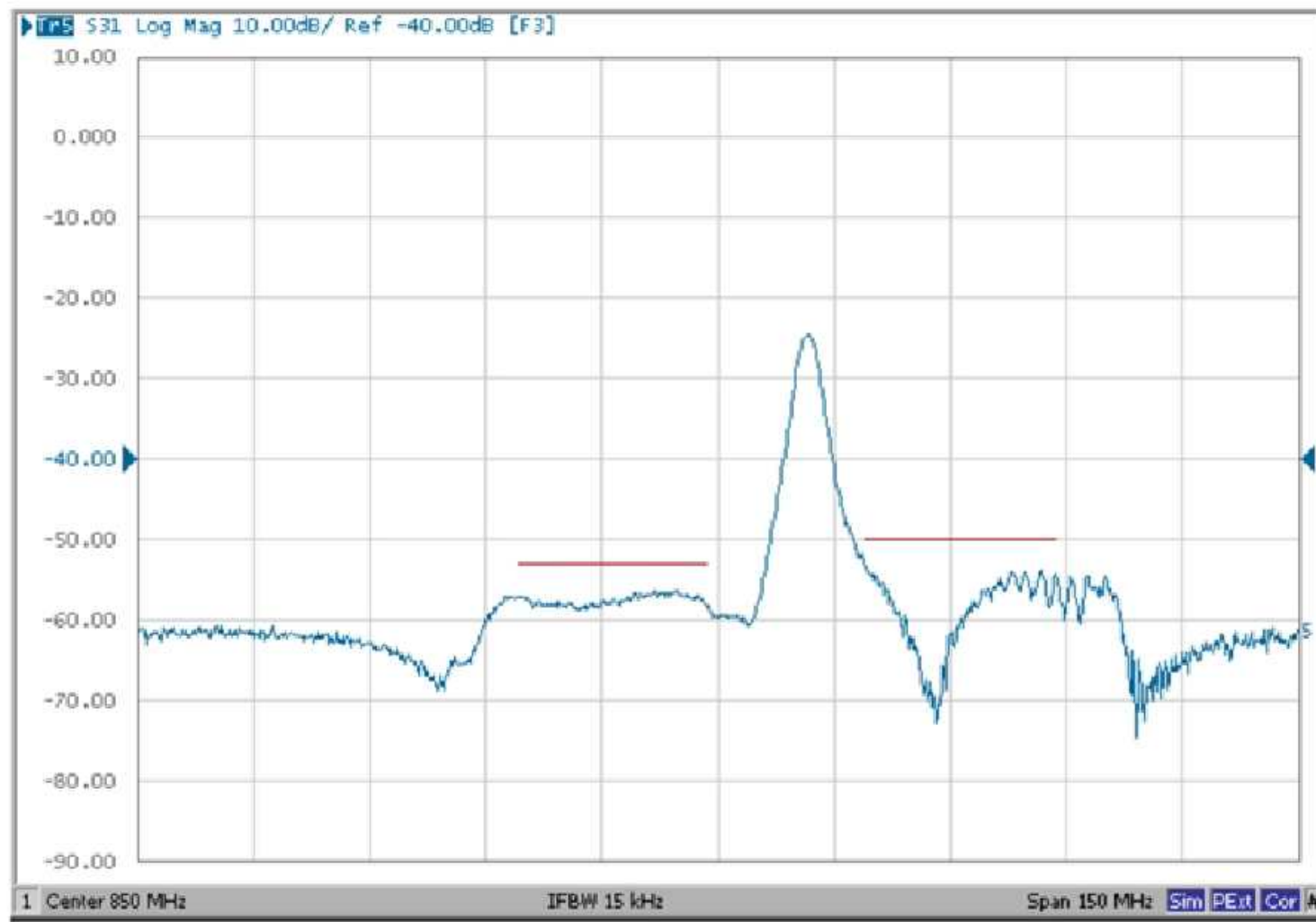
### Tx to Ant



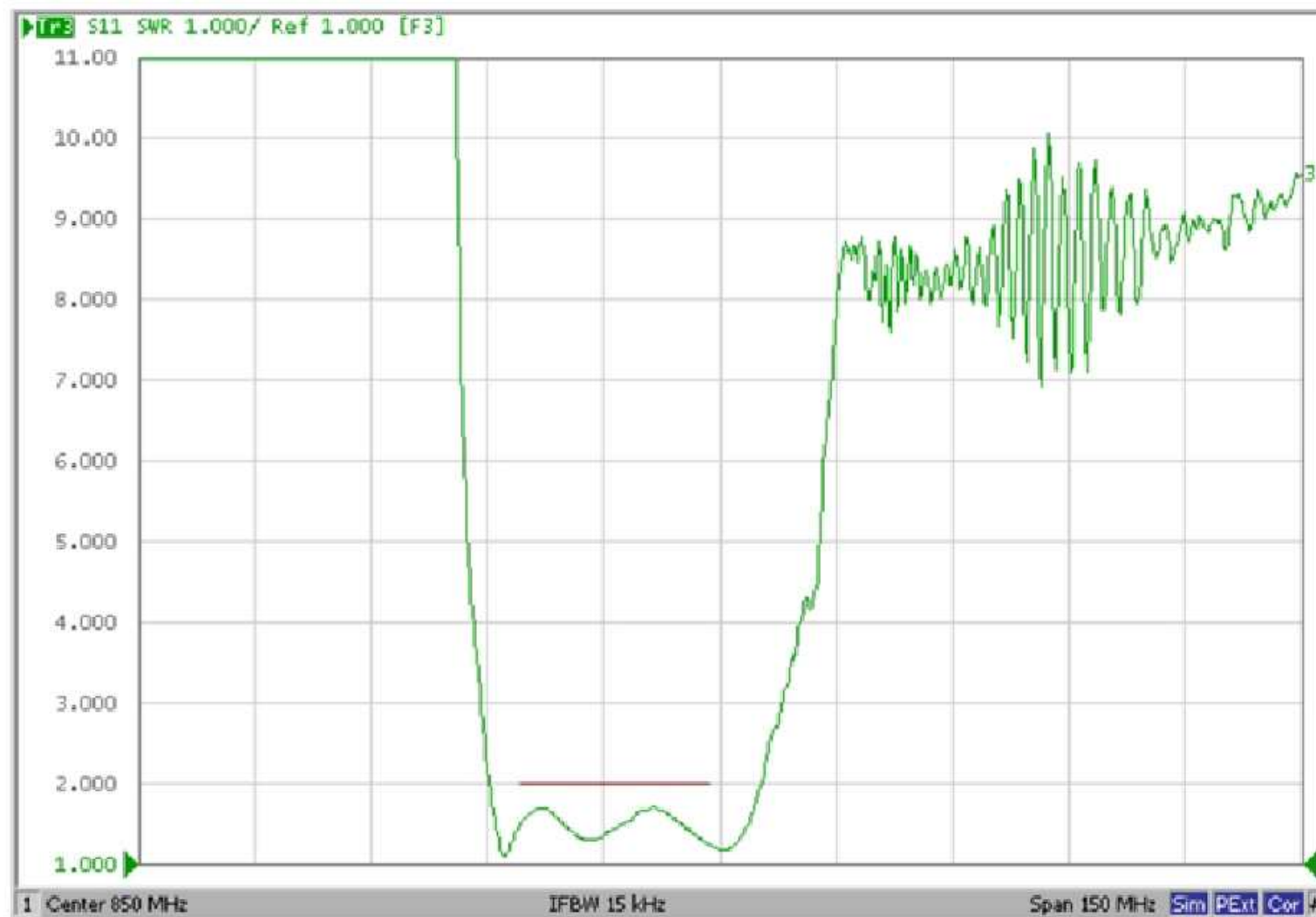
### Ant to Rx



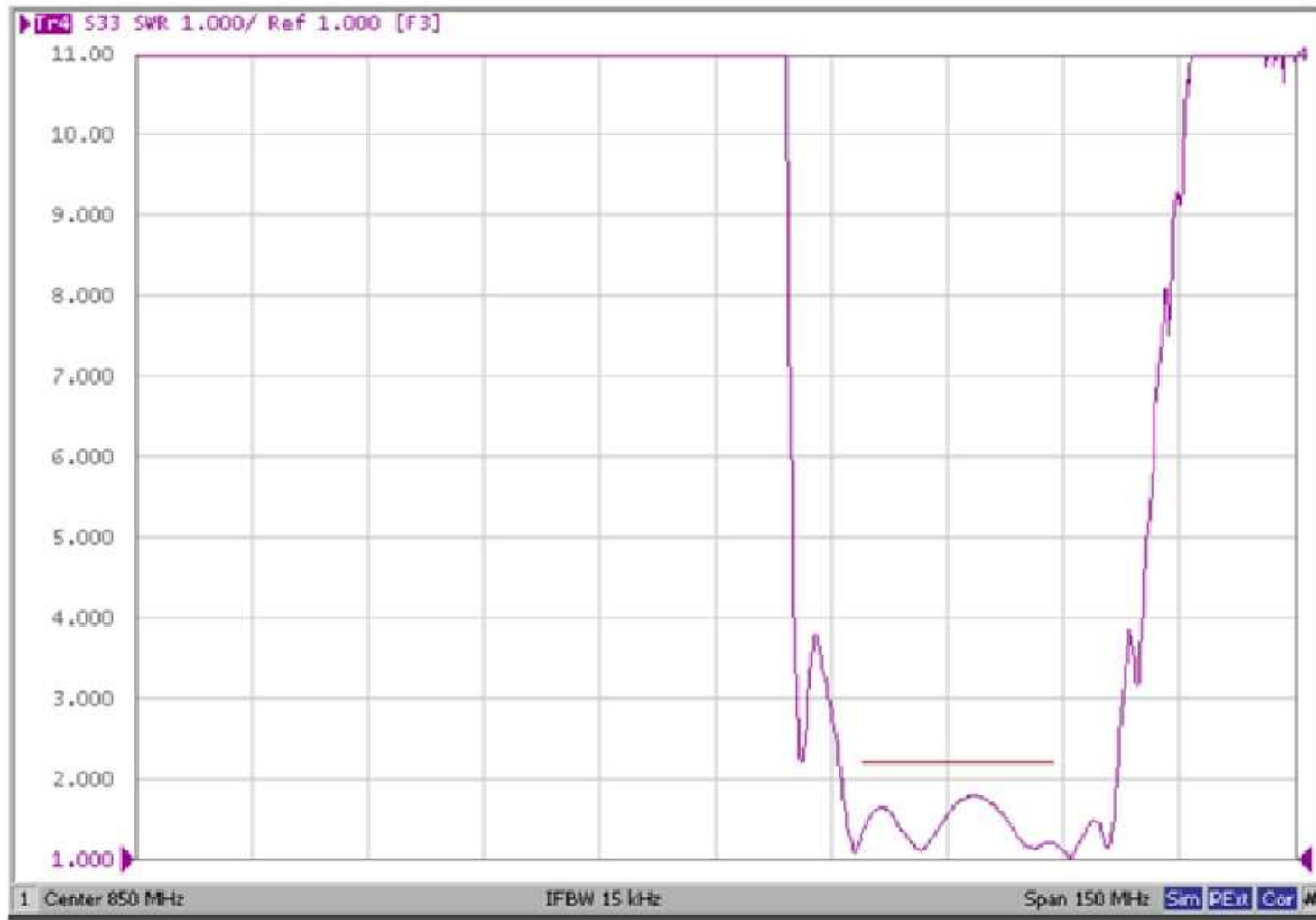
# Isolation



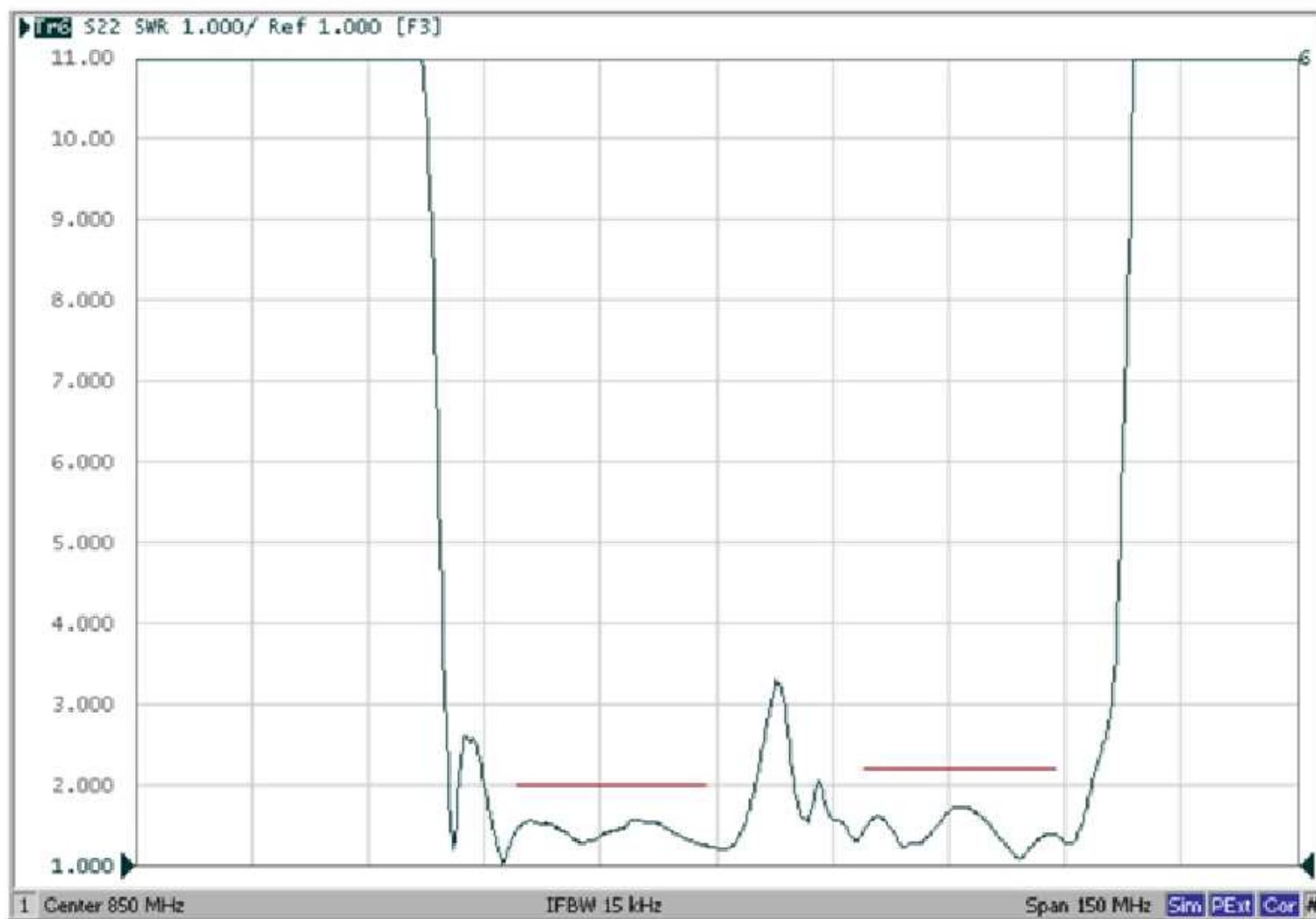
# VSWR (Tx Port)



## VSWR (Rx Port)

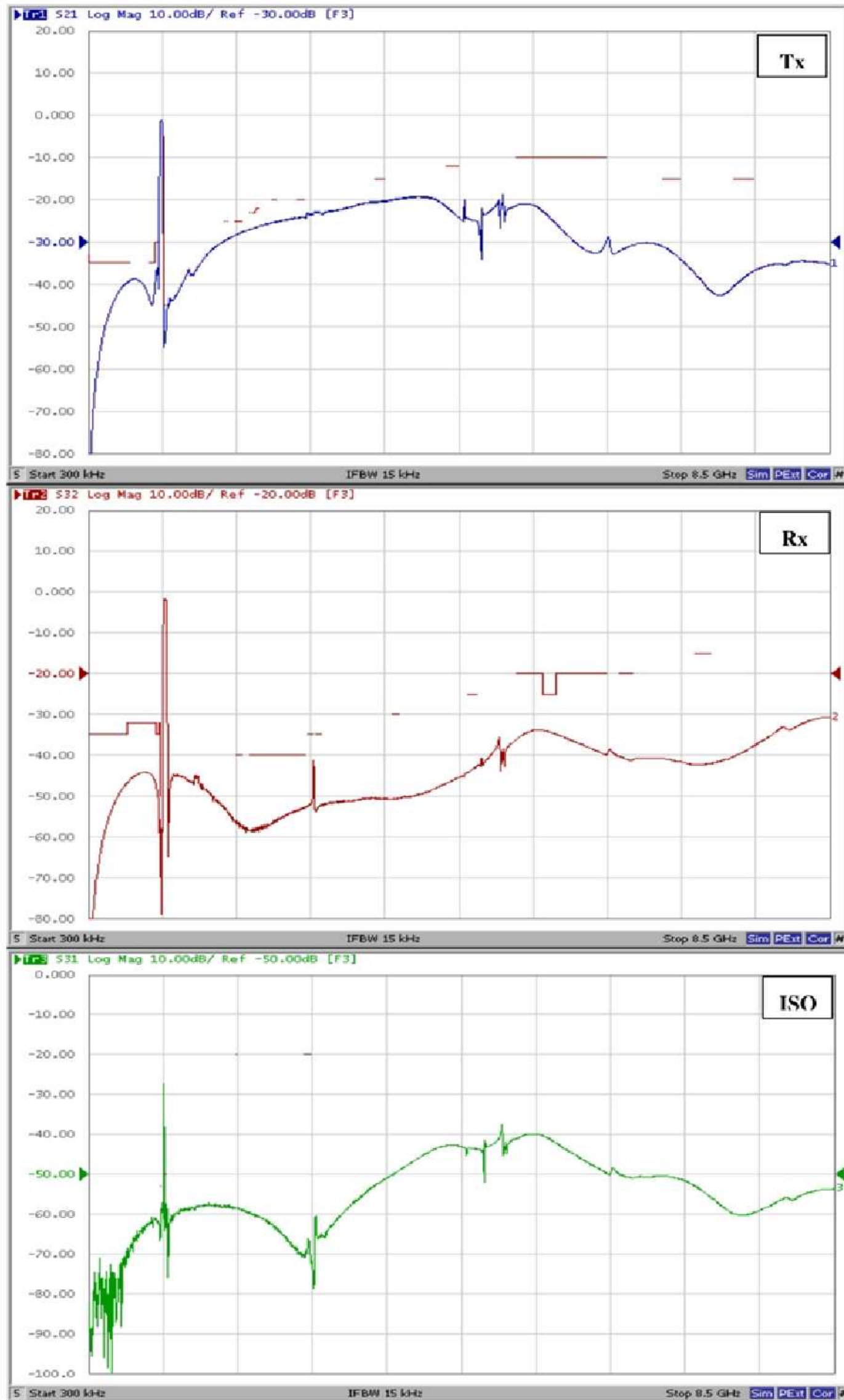


## VSWR (ANT Port)

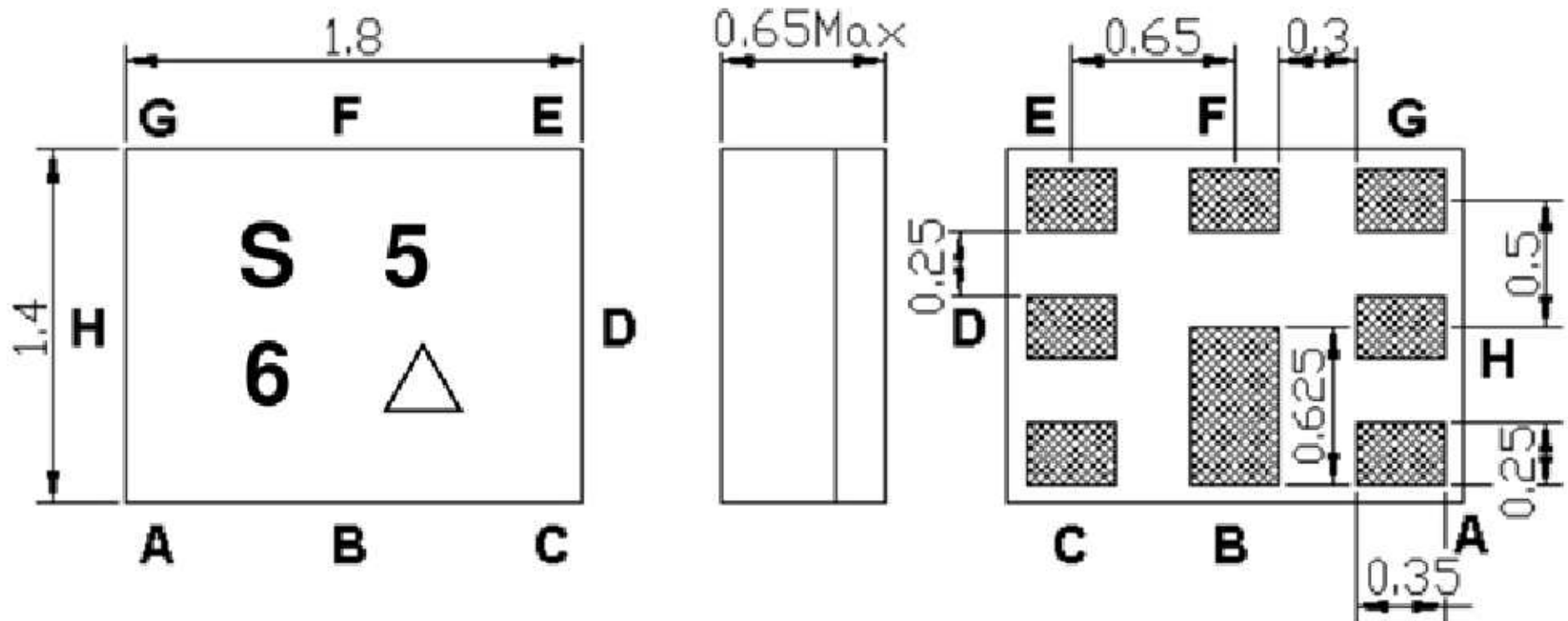


# Wide Span

## Wide Span



**D.OUTLINE DRAWIN:**



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

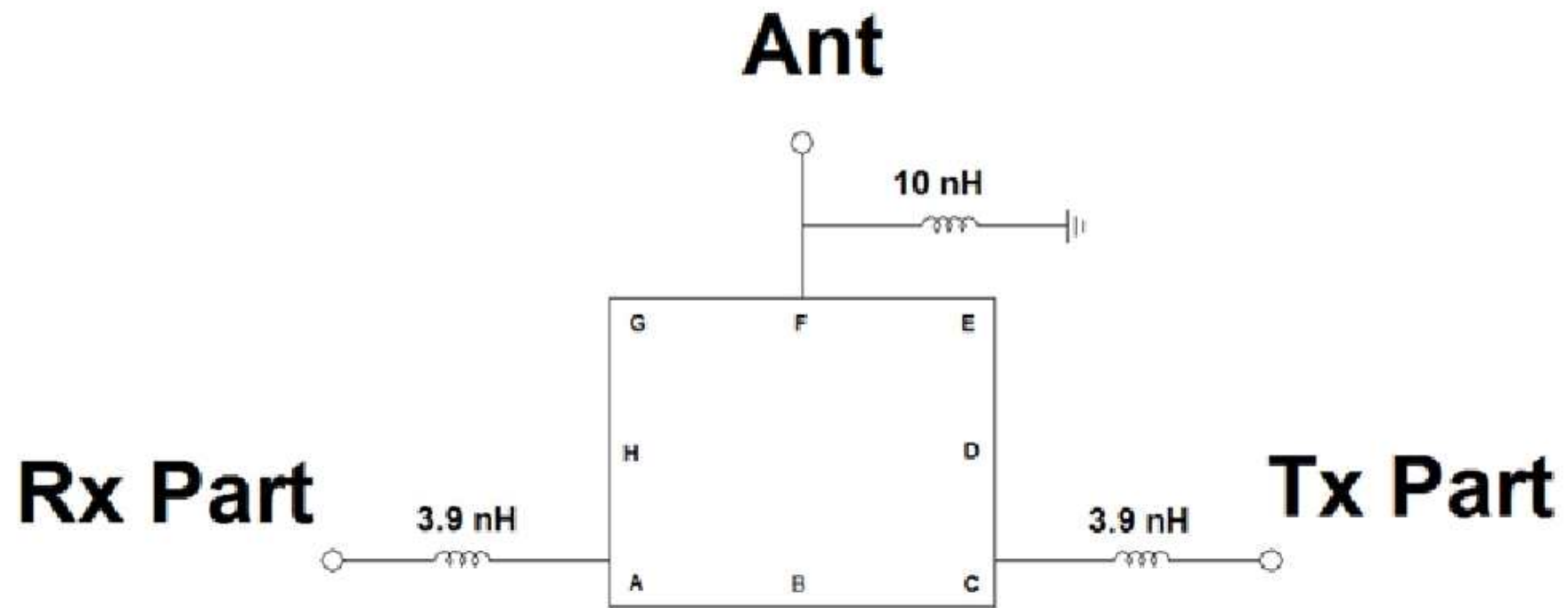
Pin Description	
B,D,E,G,H	Ground
F	Ant
C	Tx (836.5MHz)
A	Rx (881.5MHz)

□ : Year/Month Code .Follow the table. (8-year cycle)

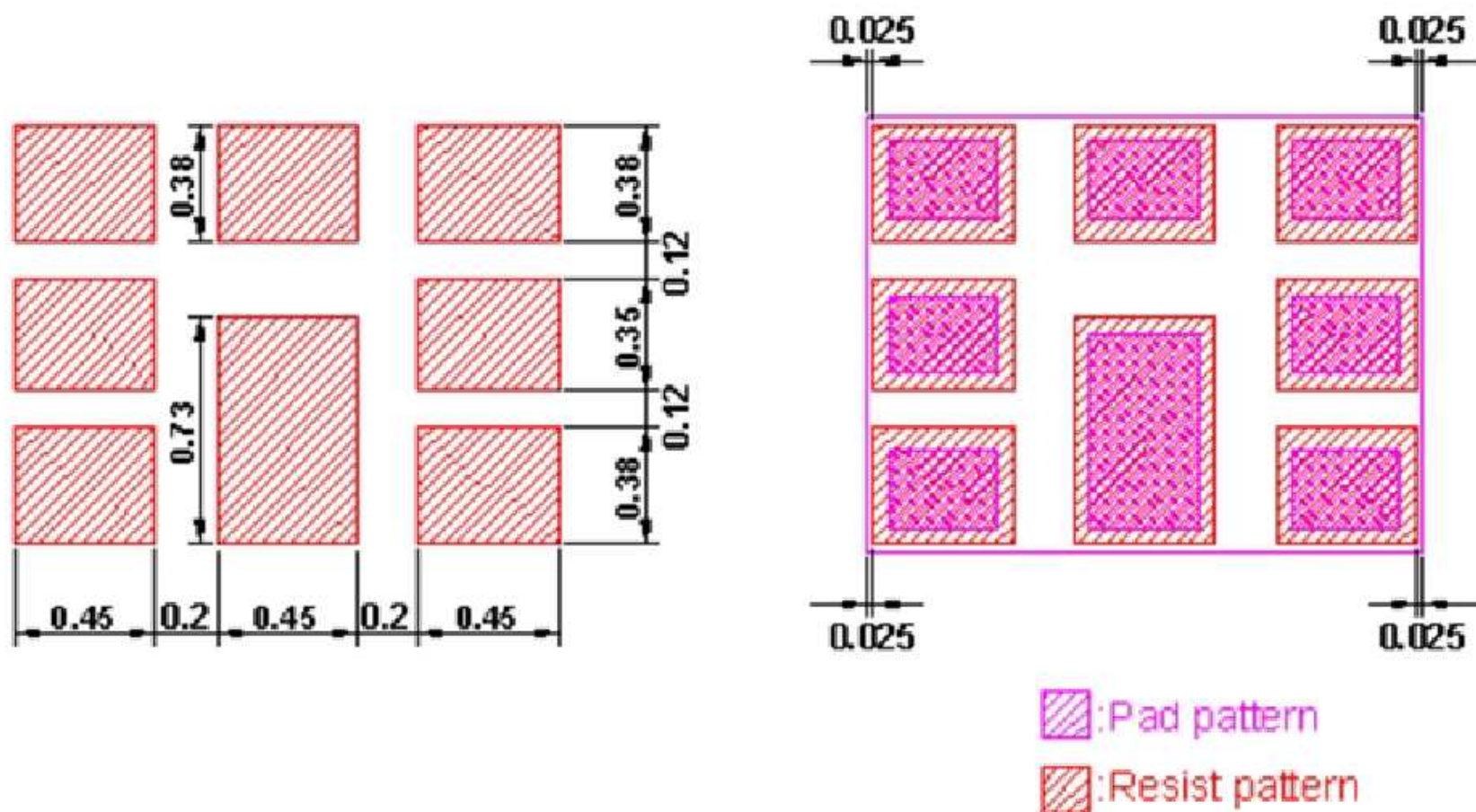
YEAR/Month	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2013 / 2021	A	B	C	D	E	F	G	H	J	K	L	M
2014 / 2022	N	P	Q	R	S	T	U	V	W	X	Y	Z
2015 / 2023	a	b	c	d	e	f	g	h	j	k	l	m
2016 / 2024	n	p	q	r	s	t	u	v	w	x	y	z
2017 / 2025	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>J</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>j</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



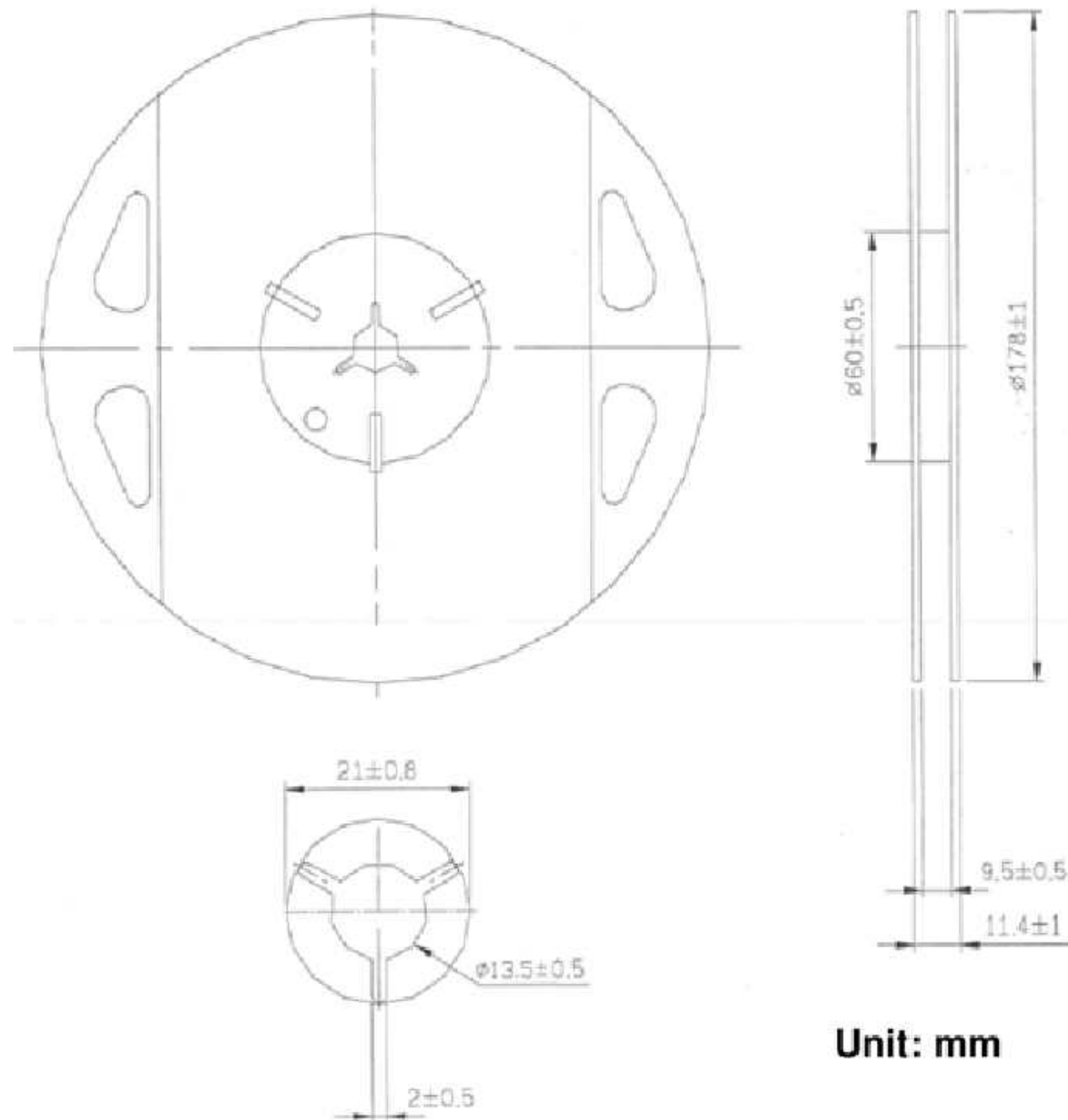
## F. FOOTPRINT:



## G. PACKING:

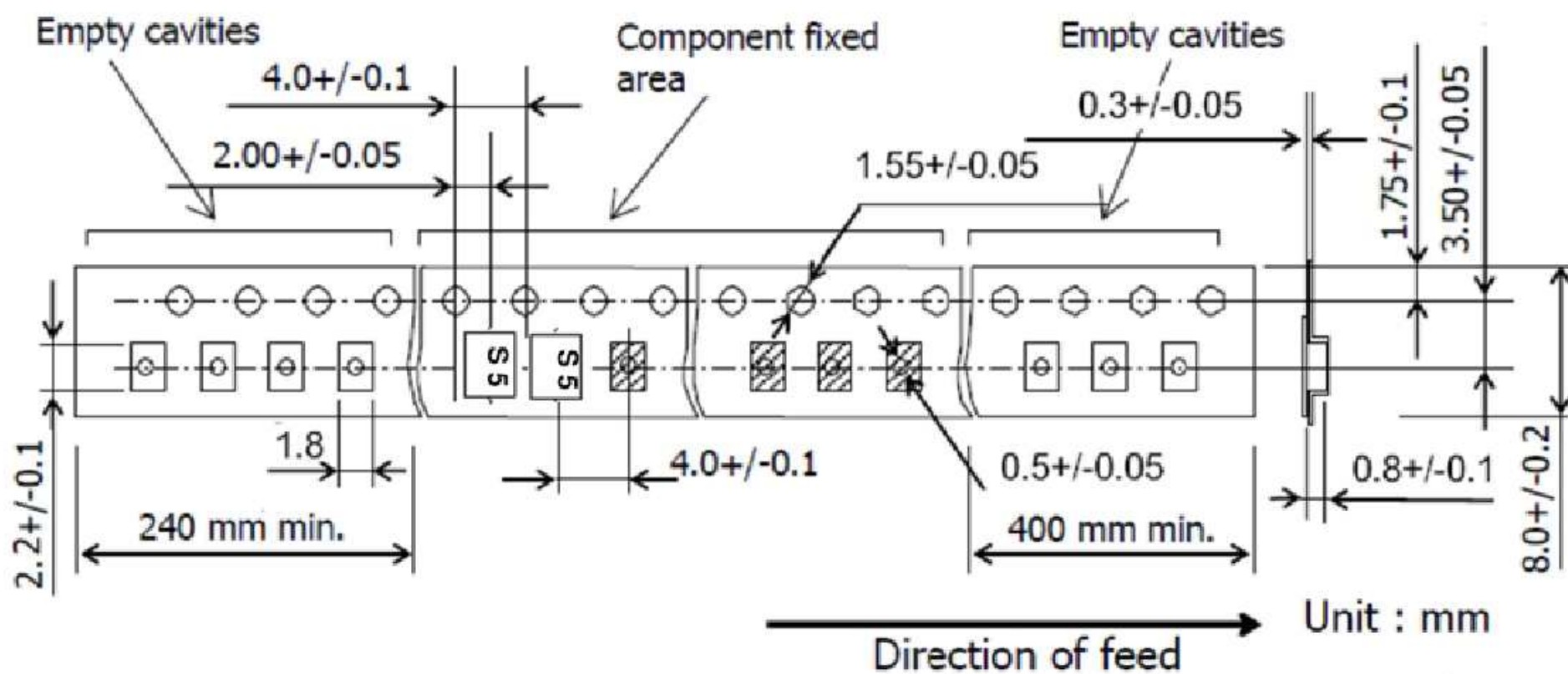
### 1. REEL DIMENSION

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



Unit: mm

### 2. TAPE DIMENSION



## 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.

