

MAXIMUM RATING:

- Operating temperature range: -20 °C to +85 °C
- Storage temperature range: -40 °C to +85 °C
- Tx Input power : 29dBm (Ta=+50°C,50000h,CW)
- Rx Input power : 29dBm (Ta=+50°C, 50000h,CW)
- Maximum DC Voltage: 0 V
- Moisture Sensitivity Level: Level 3 (MSL 3)
- ESD 100V(MM) 200V(HBM)

ELECTRICAL CHARACTERISTICS:

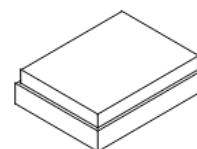
Terminating impedance (Tx Port): 50 Ω (Single-ended)

Terminating impedance (Rx Port): 50 Ω (Single-ended)

Terminating impedance (Ant Port): 50 Ω (Single-ended)

SF2538N

**897.5/942.5 MHz
Filter Duplexer**



SM1814

Tx to ANT (f_{T0}=897.5 MHz)

Parameters Description		Unit	Min	Typ	Max	Remarks
Insertion Loss	880.48 ~ 914.52 MHz	dB	-	2.6	3.6	
	882.4 ~ 912.6 MHz	dB		2.2	2.7	
Amplitude ripple	880 ~ 915 MHz	dBp-p	-	1.6	2.7	
VSWR	ANT	880 ~ 915 MHz	-	1.7	2.2	
	Tx	880 ~ 915 MHz	-	1.7	2.2	
Attenuation:						
10 ~ 716 MHz		dB	30	39	-	
716 ~ 728 MHz		dB	33	41	-	
728 ~ 793 MHz		dB	33	41	-	
832 ~ 862 MHz		dB	28	31	-	
927 ~ 957.6 MHz		dB	42	49		
1559 ~ 1563 MHz		dB	35	39	-	
1565.42 ~ 1573.37 MHz		dB	35	38	-	
1573.37 ~ 1577.47 MHz		dB	35	38	-	
1577.47 ~ 1585.42 MHz		dB	35	38	-	
1597.55 ~ 1605.89 MHz		dB	35	38		
1710 ~ 1785 MHz		dB	30	36		
1760 ~ 1840 MHz		dB	30	35		
1840 ~ 1880 MHz		dB	30	35		
1920 ~ 1980 MHz		dB	30	34		

 **CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

NOTES:

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

2110 ~ 2170 MHz	dB	28	32		
2400 ~ 2500 MHz	dB	25	30		
2434 ~ 2494 MHz	dB	25	30		
2620 ~ 2745 MHz	dB	25	30		
3520 ~ 3660 MHz	dB	15	24		
4000 ~ 4575 MHz	dB	5	17		
4900 ~ 5950 MHz	dB	5	17		
6160 ~ 6405 MHz	dB	15	32		
7040 ~ 7320 MHz	dB	15	29		

ANT to Rx ($f_{T0}=942.5$ MHz)

Parameters Description		Unit	Min	Typ	Max	Remarks
Insertion Loss	925.48 ~ 959.52 MHz	dB	-	2.5	3.5	
	927.4 ~ 957.6 MHz	dB	-	2.1	2.6	
Amplitude ripple	925 ~ 960 MHz	dBp-p		1.6	2.6	
VSWR	ANT			1.7	2.2	
	Rx	-		1.7	2.2	
Attenuation:						
0.3~ 880 MHz		dB	32	37	-	
45 MHz		dB	50	80	-	
835 ~ 870 MHz		dB	33	38		
882.4 ~ 912.6 MHz		dB	45	55		
902.5 ~ 910 MHz		dB	45	62	-	
980 ~ 1045 MHz		dB	35	39	-	
1045 ~ 6000 MHz		dB	17	23		
1427 ~ 1448 MHz		dB	33	39		
1710 ~ 1785 MHz		dB	35	40		
1805 ~ 1980 MHz		dB	35	40		
2400 ~ 2500 MHz		dB	35	41		
2500 ~ 2570 MHz		dB	35	41		
2685 ~ 2790 MHz		dB	35	40		
2775 ~ 2880 MHz		dB	35	39		
2880 ~ 3700 MHz		dB	30	35		
3700 ~ 3840 MHz		dB	27	33		
4625 ~ 4800 MHz		dB	15	23		
4900 ~ 5950 MHz		dB	15	23		
6475 ~ 6720 MHz		dB	10	21		
7400 ~ 7680 MHz		dB	5	15		

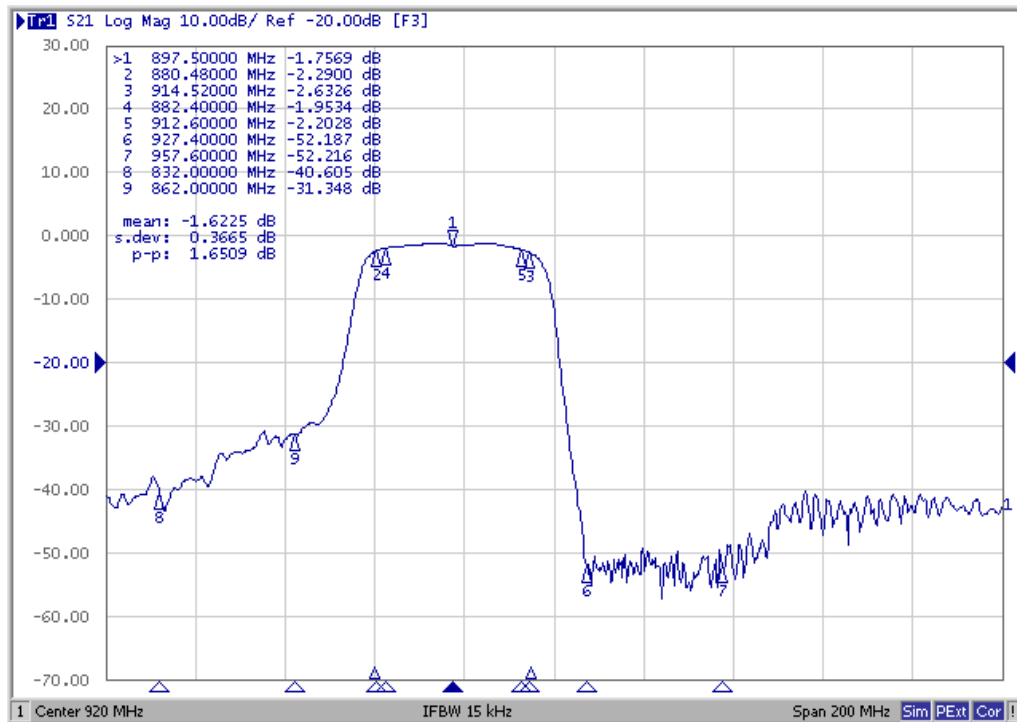
Tx to Rx

Isolation	882.4 ~ 912.6 MHz	dB	50	54	-	
	927.4 ~ 957.6 MHz	dB	50	53	-	

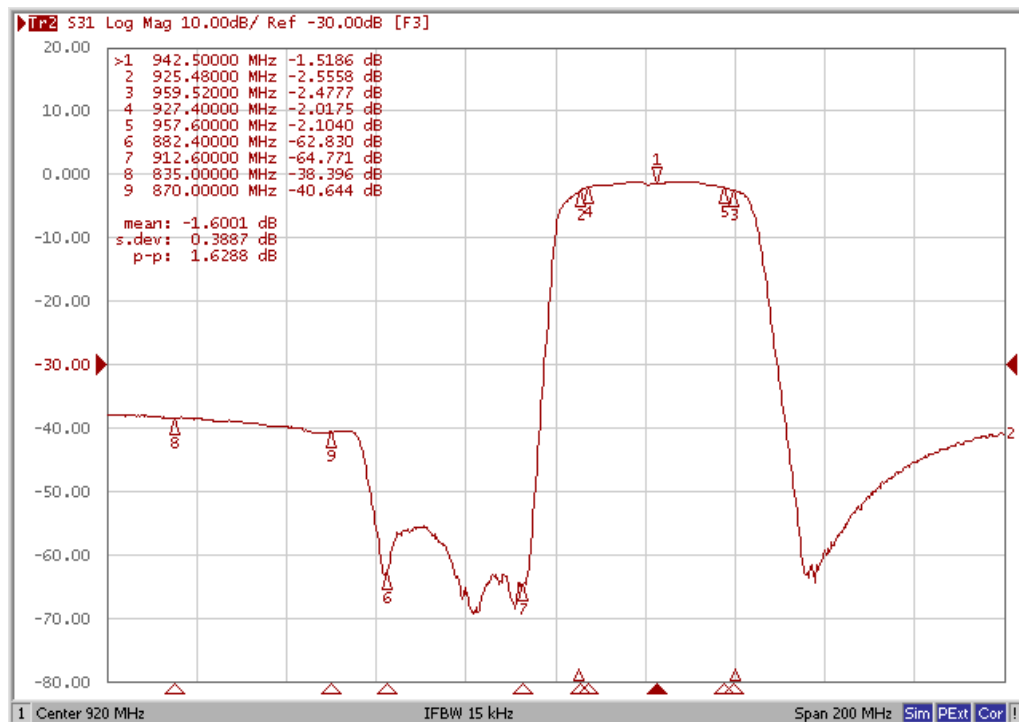
Notes : (1) With Matching Network

FREQUENCY CHARACTERISTICS:

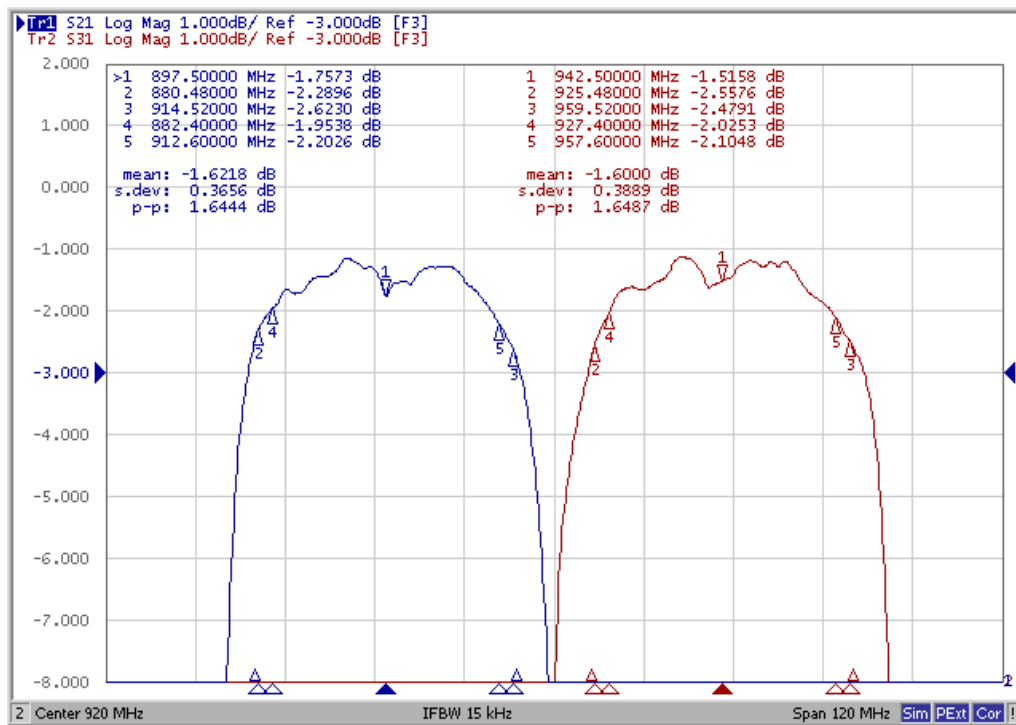
Tx to Ant



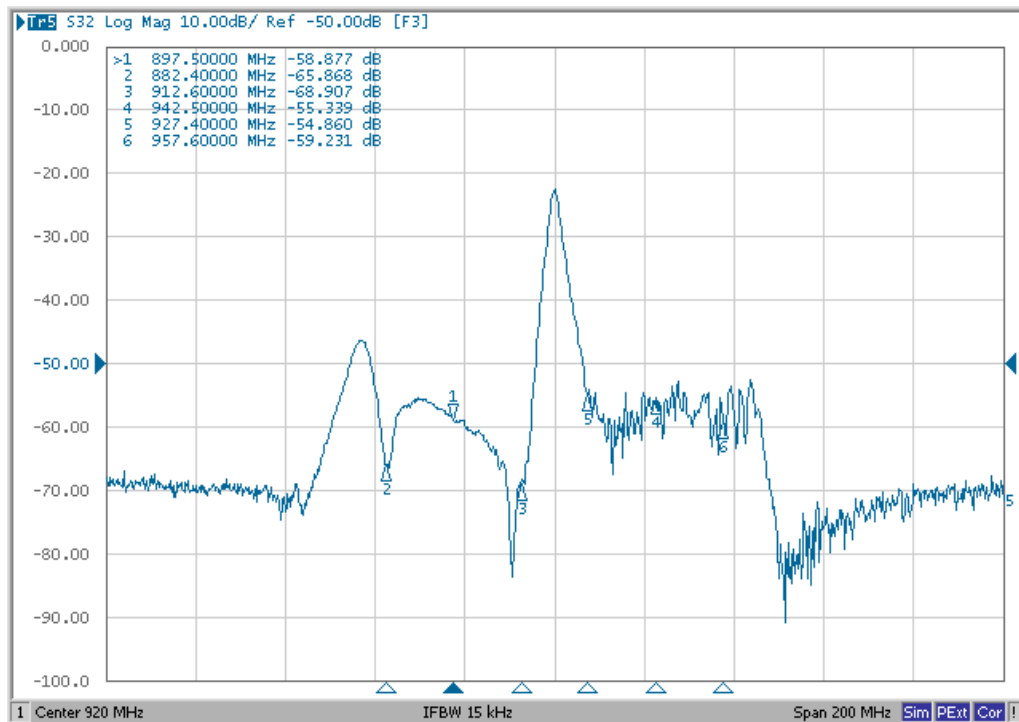
Ant to Rx



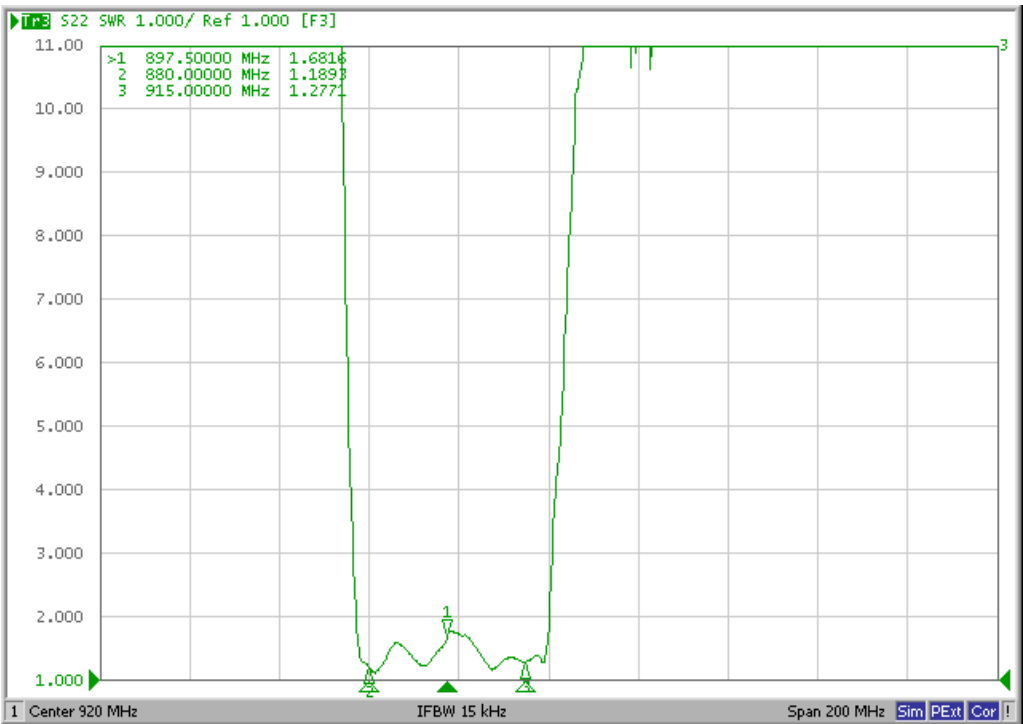
Ripple Deviation



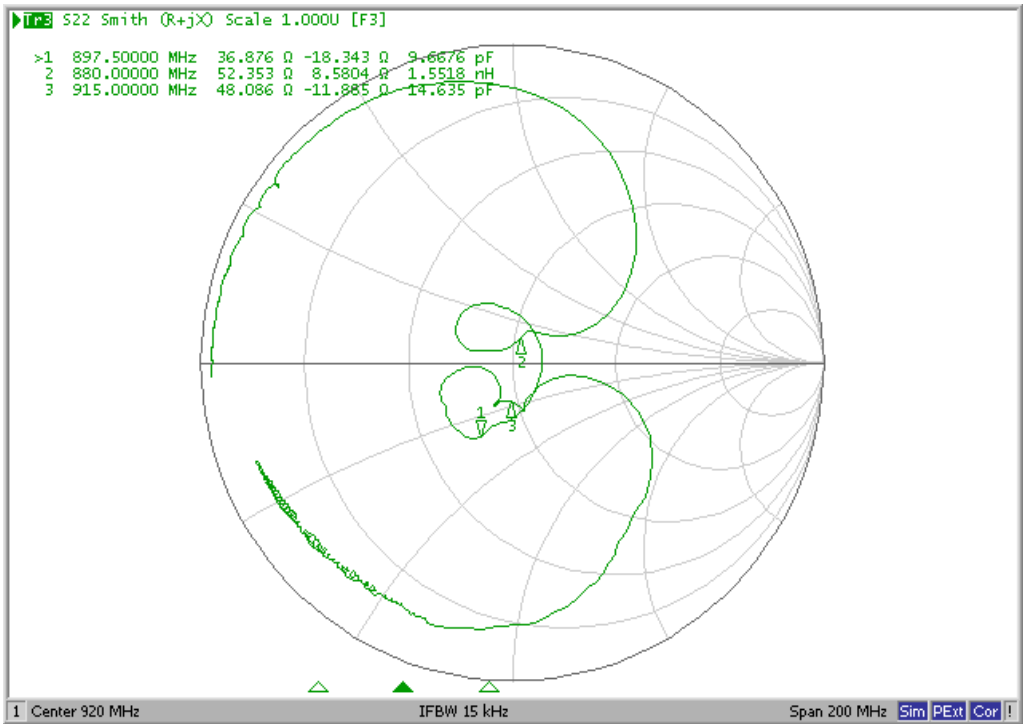
Isolation



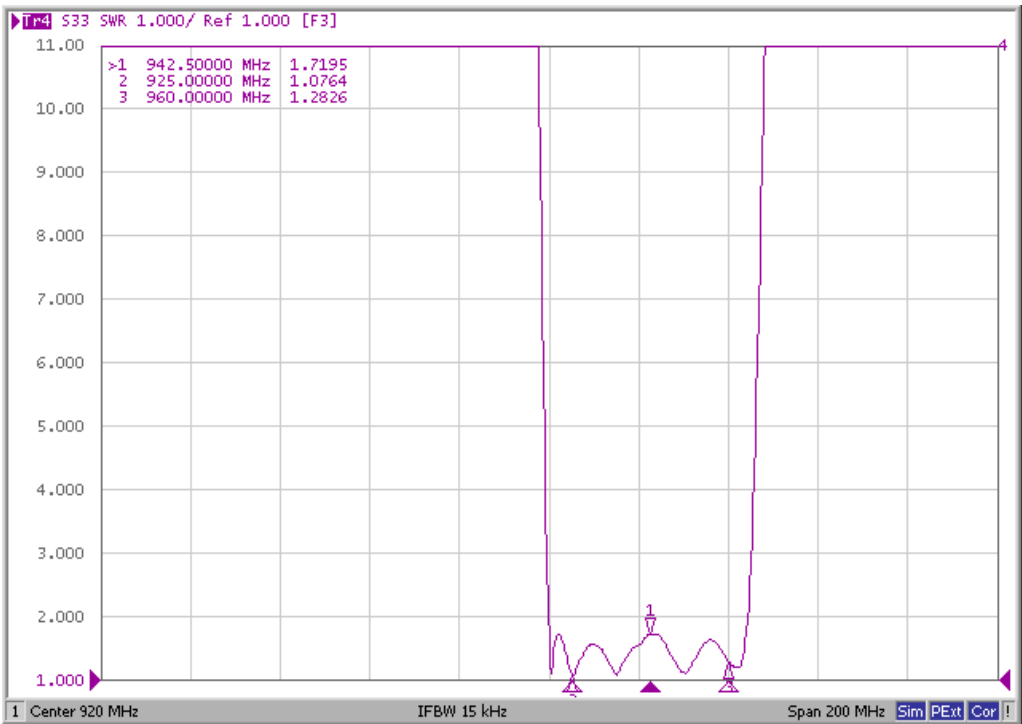
VSWR (Tx Port)



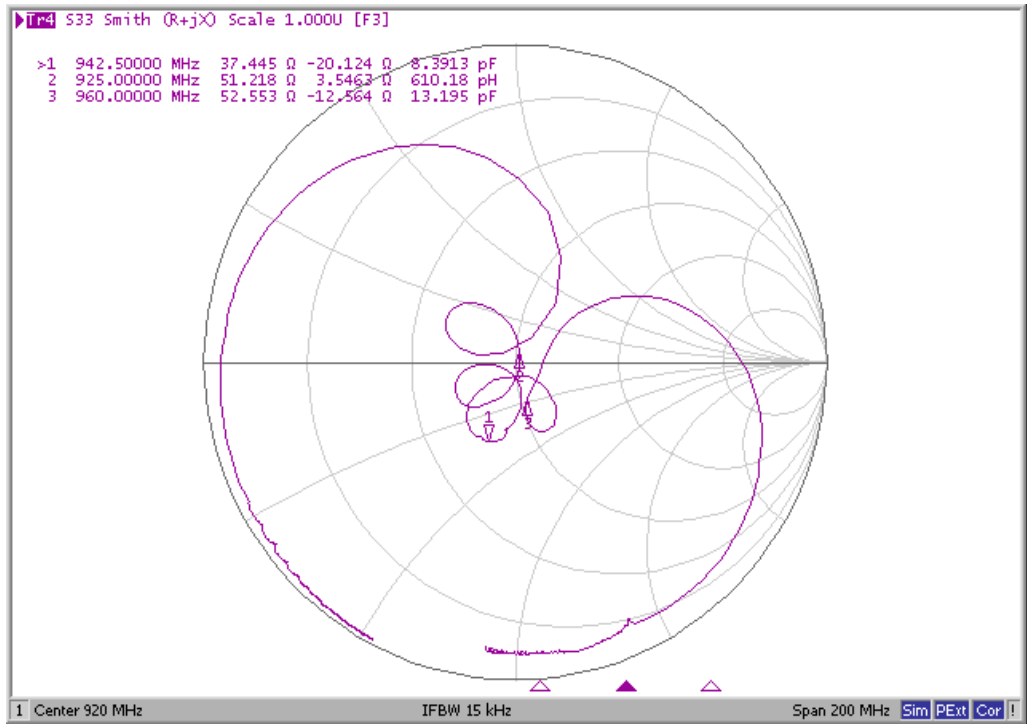
Smith Chart (Tx Port)



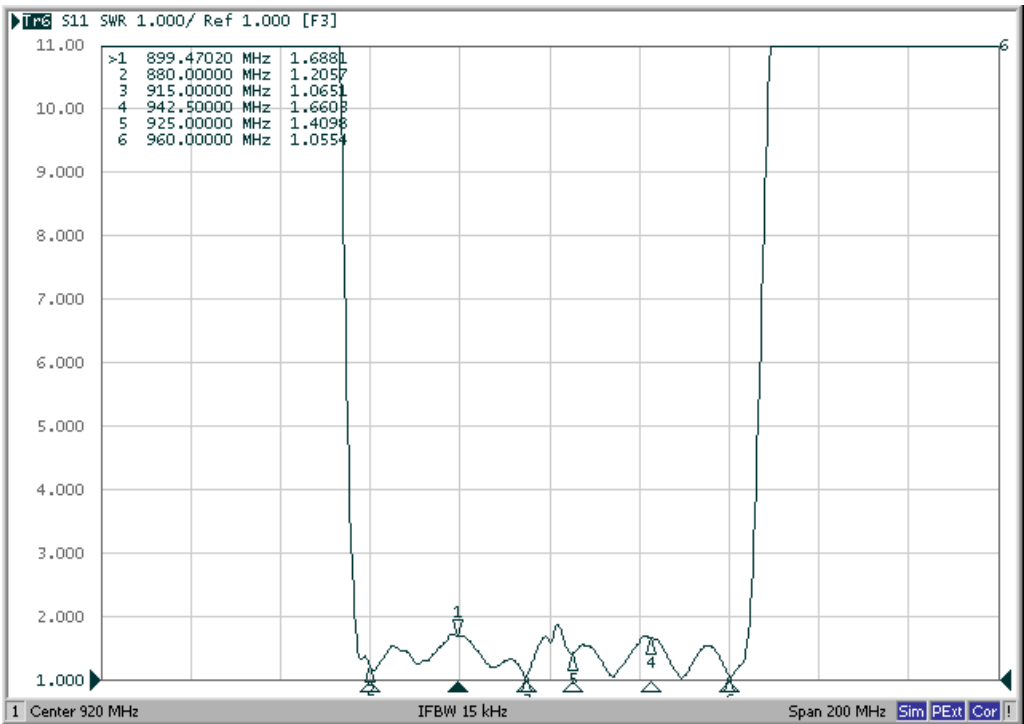
VSWR (Rx Port)



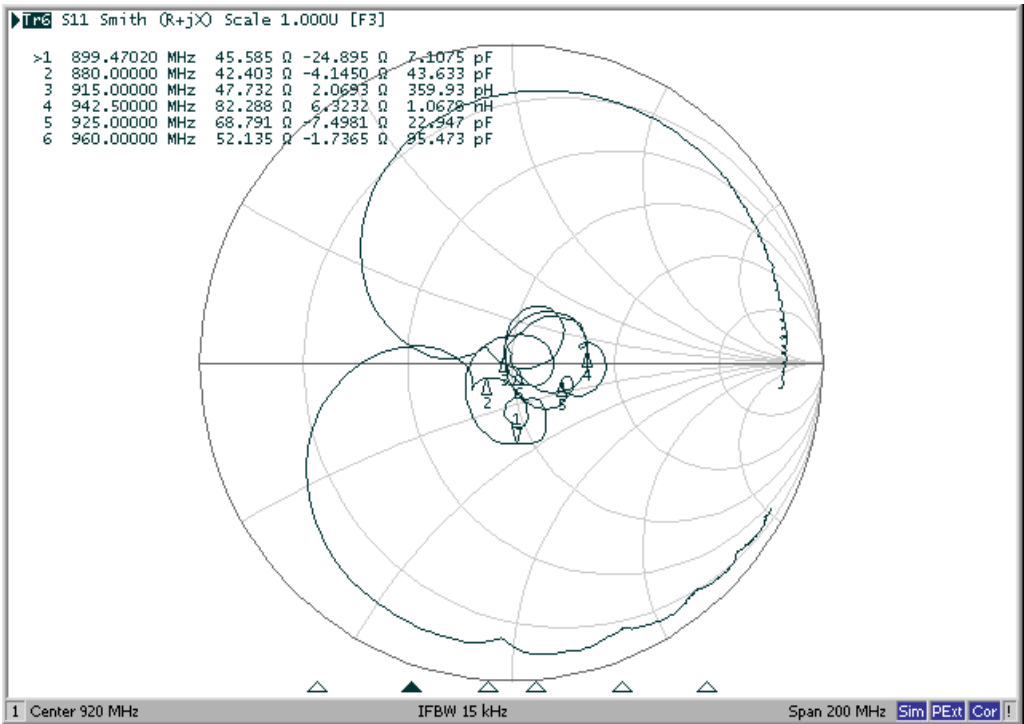
Smith Chart (Rx Port)



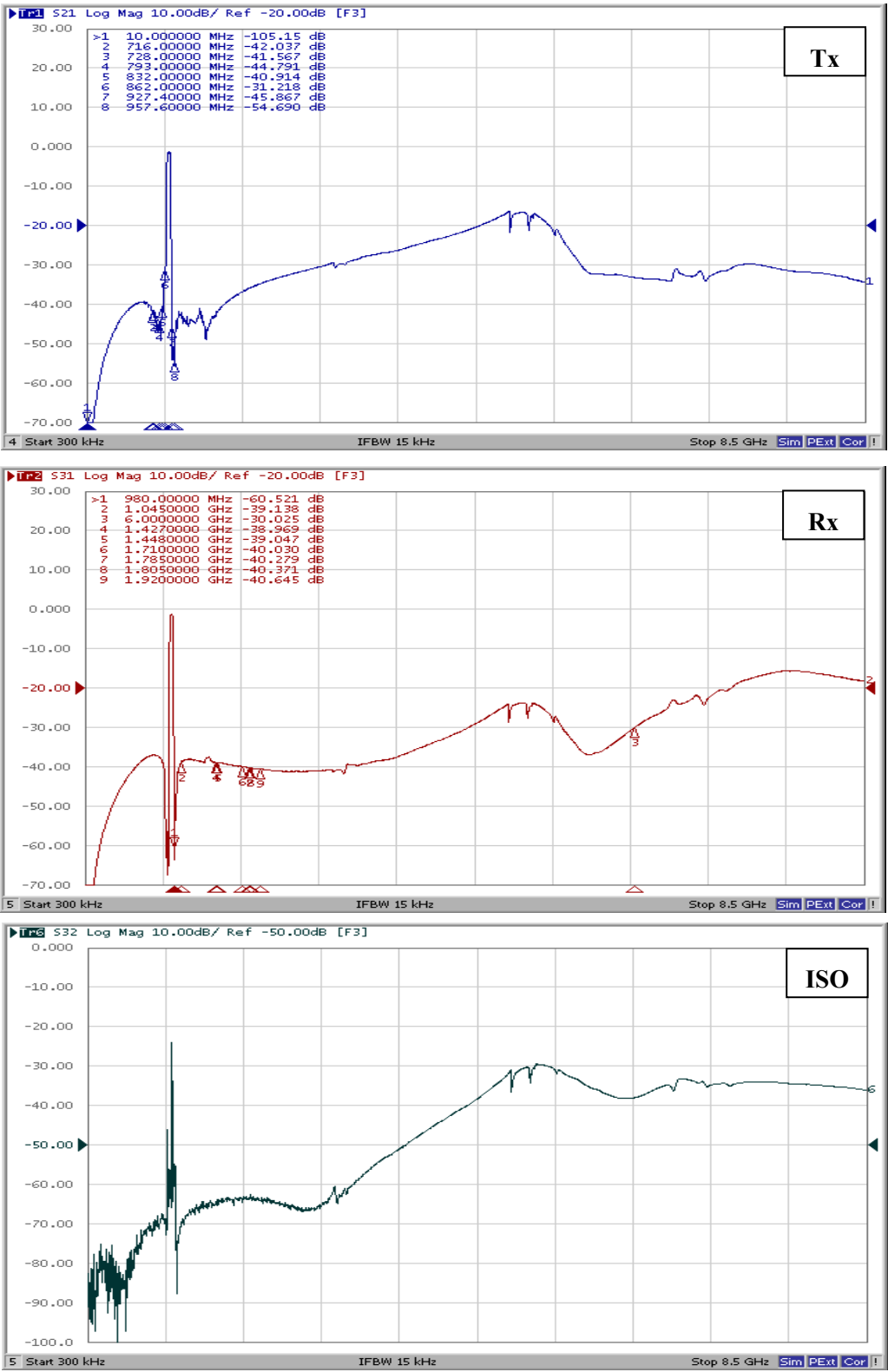
VSWR (ANT Port)



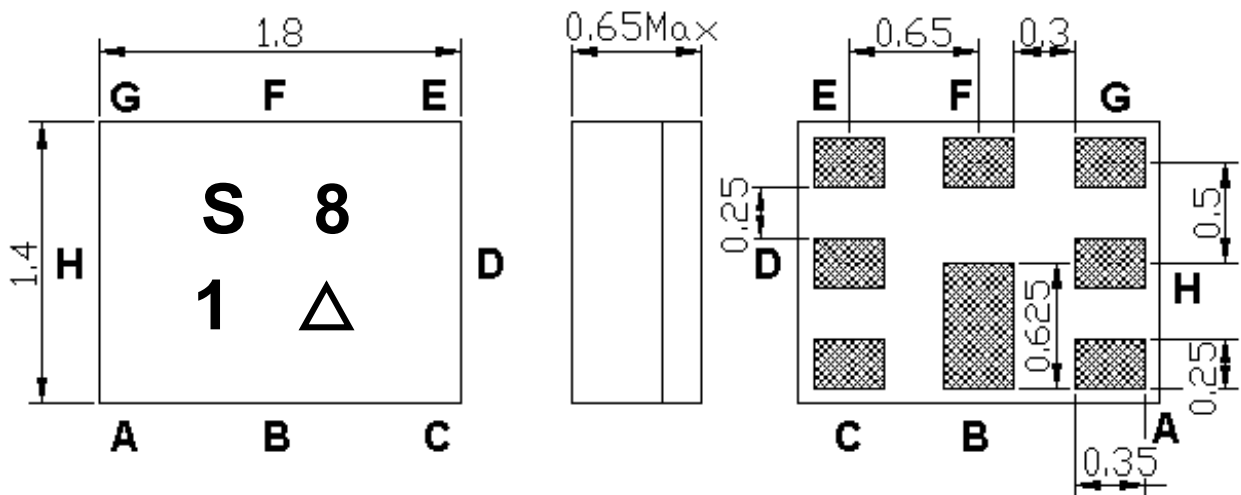
Smith Chart (ANT Port)



Wide Span



OUTLINE DRAWING:



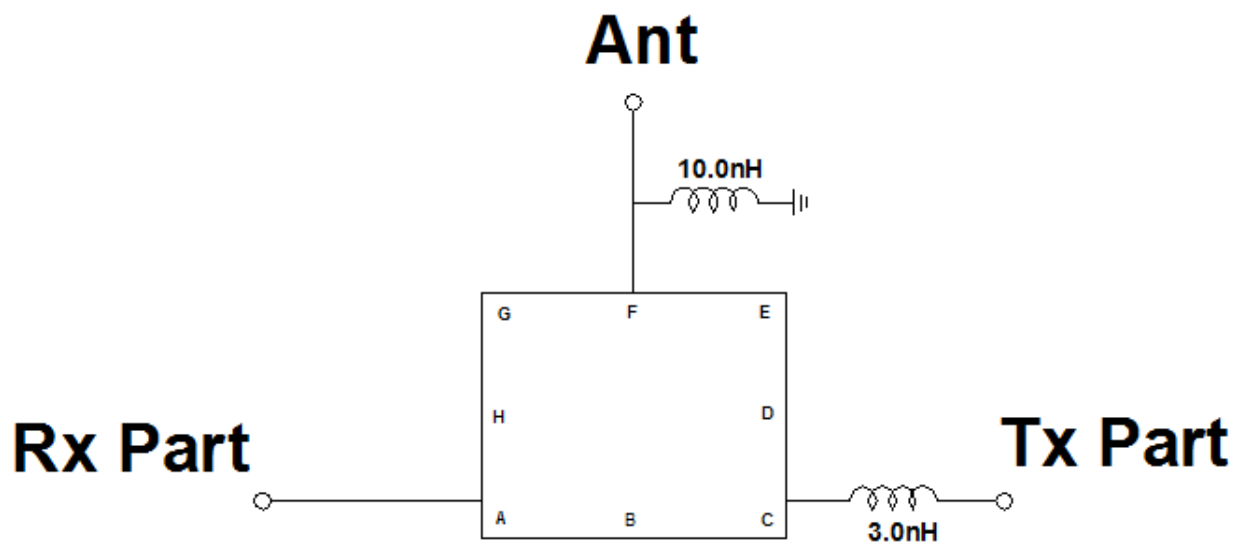
Marking Descriptions	
S	Marking name
8	Band Class
1	Series Number
△	Date Code(Year+Month)

Pin Description	
B,D,E,G,H	Ground
F	Ant
C	Tx (897.5MHz)
A	Rx (942.5MHz)

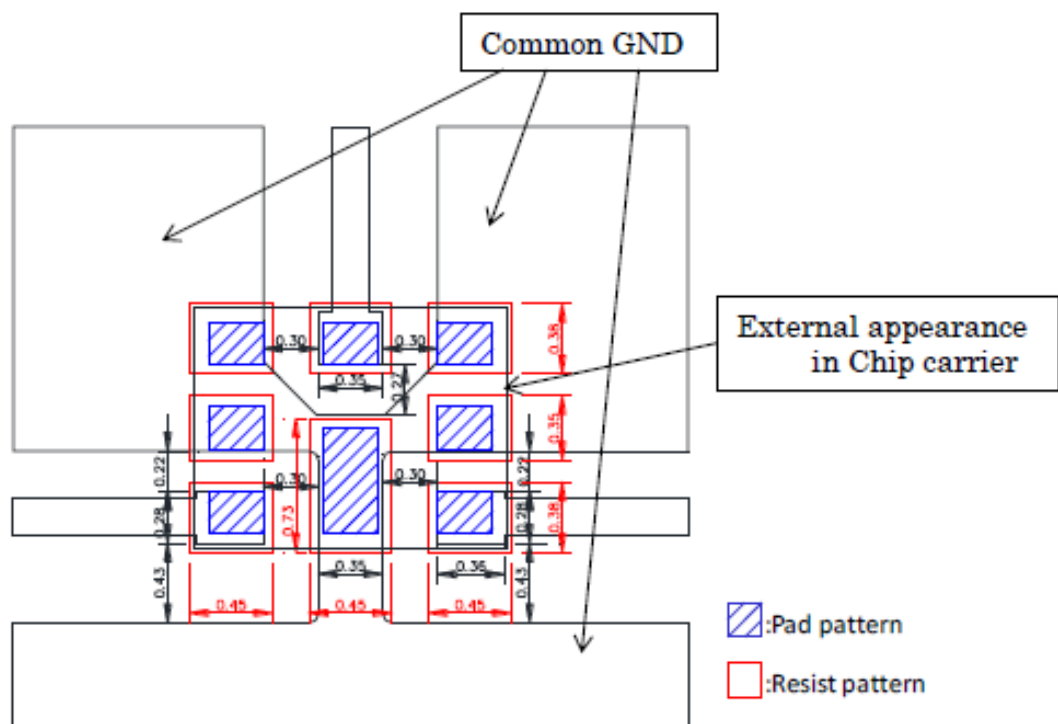
Date Code (year+month)

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

Evaluation Circuit



FOOTPRINT:



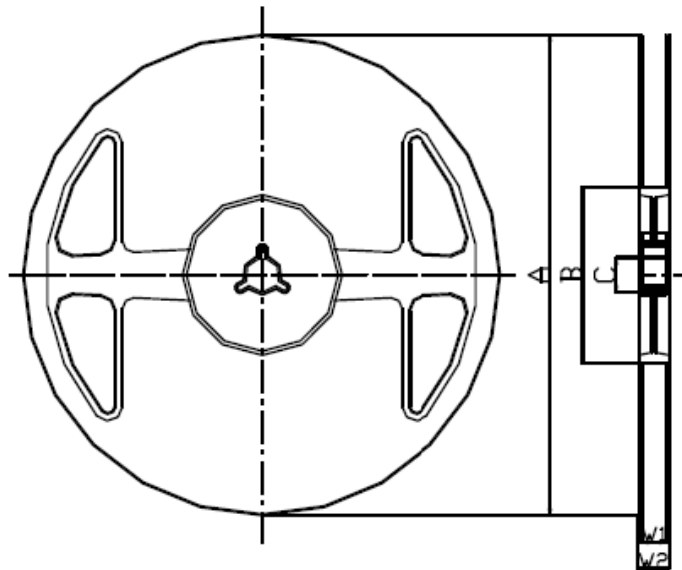
PACKING:

REEL DIMENSION

Reel Count:

7" = 3000

13" = 10,000



Materials of Reel

Material : Polystyrene + Carbon

Characteristics : Conforms to EIAJ-ET-7200A

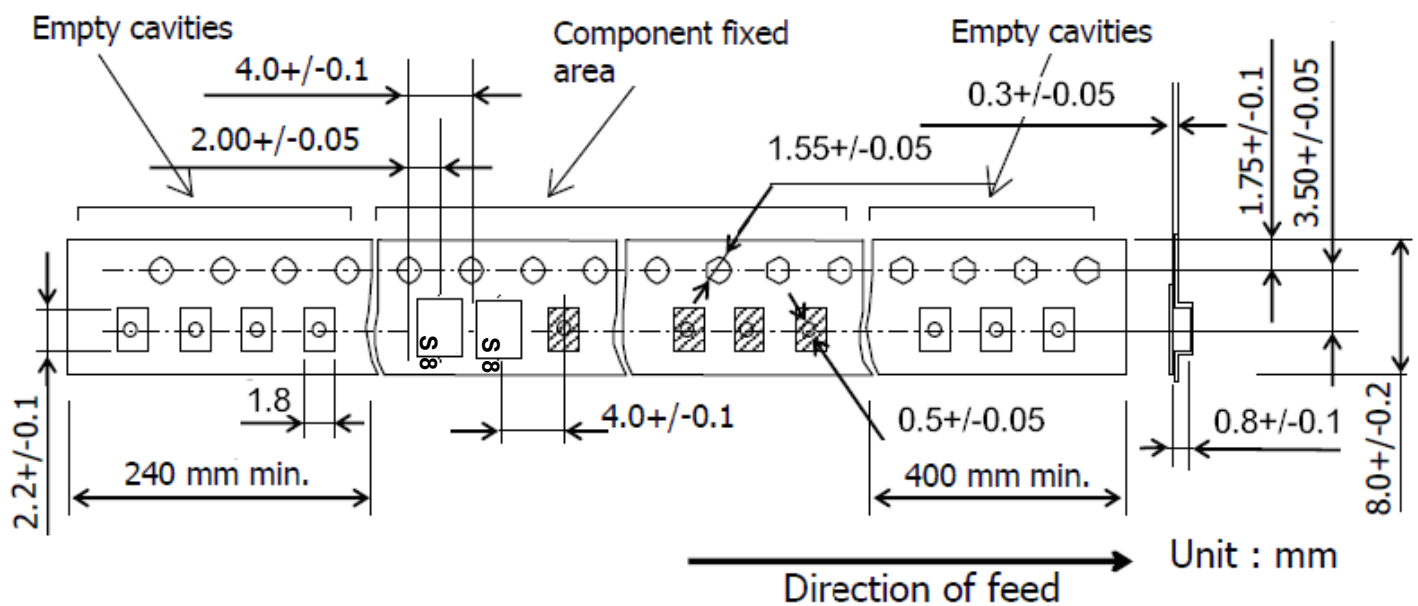
Color : Black

Surface resistance (reference value) : $10^9 \Omega/\text{sq}$ Max.

Unit : mm

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

TAPE DIMENSION



RECOMMENDED REFLOW PROFILE :

1. Preheating shall be fixed at 150~180°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.

