

# SAW Diplexer 1222.5/1582.5 MHz (BW 53/47 MHz) SMD 1.5x1.1 mm

MODEL NO.:TE0150A

REV. NO.:1.0

## A. MAXIMUM RATING:

1. Input Power Level: 15 dBm
2. DC Voltage : 0 V
3. Operating Temperature: -30 °C to +85 °C
4. Storage Temperature: -40 °C to +85 °C
5. Moisture Sensitive Level: MSL 3

RoHS Compliant

Lead-free soldering

Electrostatic Sensitive Device (ESD)

## B. ELECTRICAL CHARACTERISTICS:

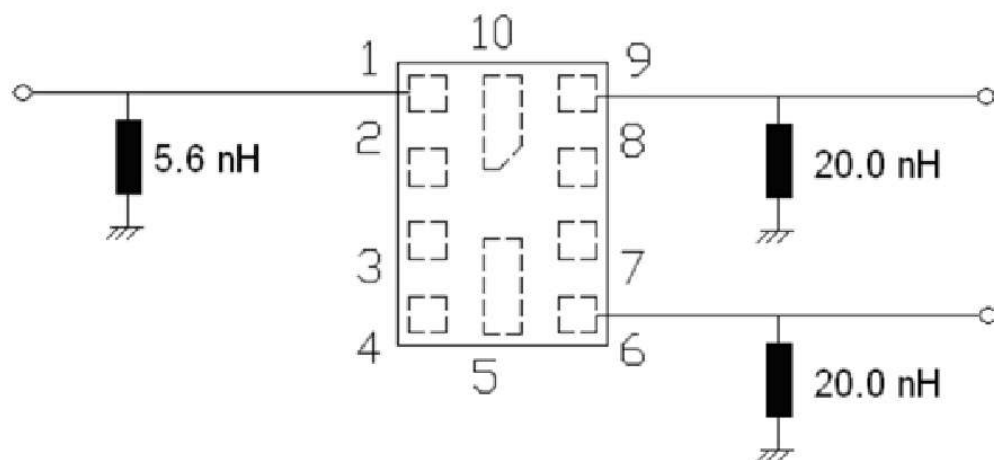
Terminating source impedance (single) :  $Z_s = 50 \Omega$   
Terminating load impedance (single) :  $Z_L = 50 \Omega$

Item (L2 Band to Antenna)	Unit	Min.	Typ.	Max.
Center frequency	MHz	-	1222.5	-
Insertion Loss (1196 ~ 1249 MHz)	dB	-	2.0	3.0
Amplitude Ripple (1196 ~ 1249 MHz)	dB	-	0.8	1.8
<b>Attenuation</b> (reference level from 0 dB)				
880 ~ 920 MHz	dB	40	43	-
1565 ~ 1606 MHz (L1 Band)	dB	30	34	-
1710 ~ 1850 MHz	dB	25	31	-
1850 ~ 1920 MHz	dB	25	30	-
1920 ~ 1980 MHz	dB	25	30	-
Temperature Coefficient of Frequency	ppm/K	-	-36	-

<b>Item</b> (L1 Band to Antenna)	Unit	Min.	Typ.	Max.
<b>Center frequency</b>	MHz	-	1582.5	-
<b>Insertion Loss</b> (1559 ~ 1606 MHz)	dB	-	2.6	3.5
<b>Amplitude Ripple</b> (1559 ~ 1606 MHz)	dB	-	0.7	1.8
<b>Attenuation</b> (reference level from 0 dB)				
10 ~ 920 MHz	dB	40	43	-
1196 ~ 1249 MHz (L2 Band)	dB	40	43	-
1427 ~ 1453 MHz	dB	35	40	-
1453 ~ 1501 MHz	dB	20	26	-
1501 ~ 1525 MHz	dB	20	25	-
1710 ~ 1785 MHz	dB	30	35	-
1850 ~ 1980 MHz	dB	35	41	-
<b>Temperature Coefficient of Frequency</b>	ppm/K	-	-36	-

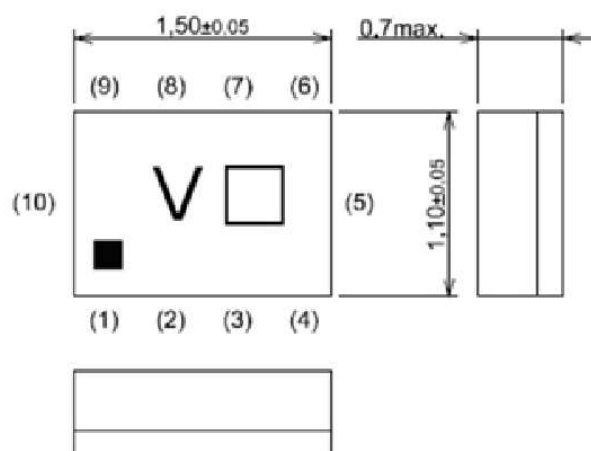
<b>Item</b> (Isolation)	Unit	Min.	Typ.	Max.
<b>Attenuation</b> (reference level from 0 dB)				
1196 ~ 1249 MHz (L2 Band)	dB	40	44	-
1565 ~ 1606 MHz (L1 Band)	dB	40	43	-
<b>Temperature Coefficient of Frequency</b>	ppm/K	-	-36	-

**C. TEST CIRCUIT:**

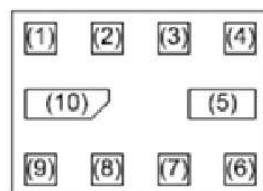


Pin #	Function
(1)	Antenna
(2)	Ground
(3)	Ground
(4)	Ground
(5)	Ground
(6)	L1 Band
(7)	Ground
(8)	Ground
(9)	L2 Band
(10)	Ground

**D. OUTLINE DRAWING:**



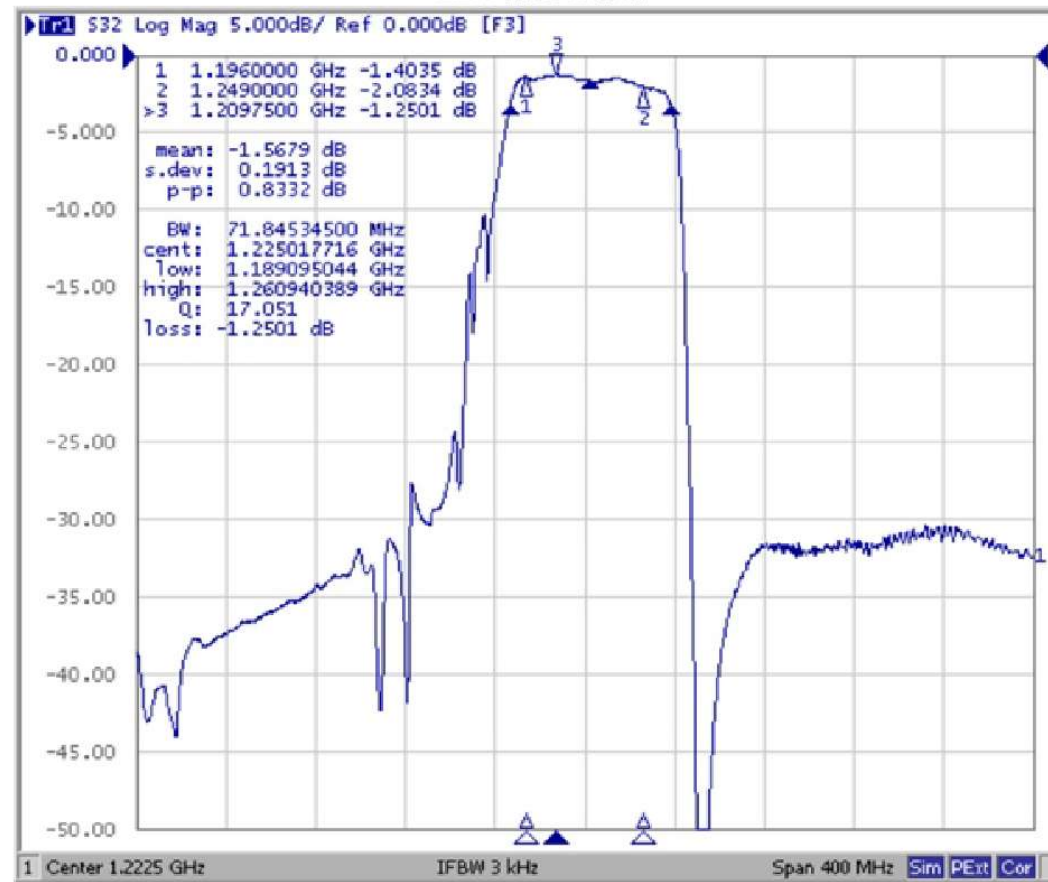
Pin #	Function
(1)	Antenna
(2)	Ground
(3)	Ground
(4)	Ground
(5)	Ground
(6)	L1 Band
(7)	Ground
(8)	Ground
(9)	L2 Band
(10)	Ground



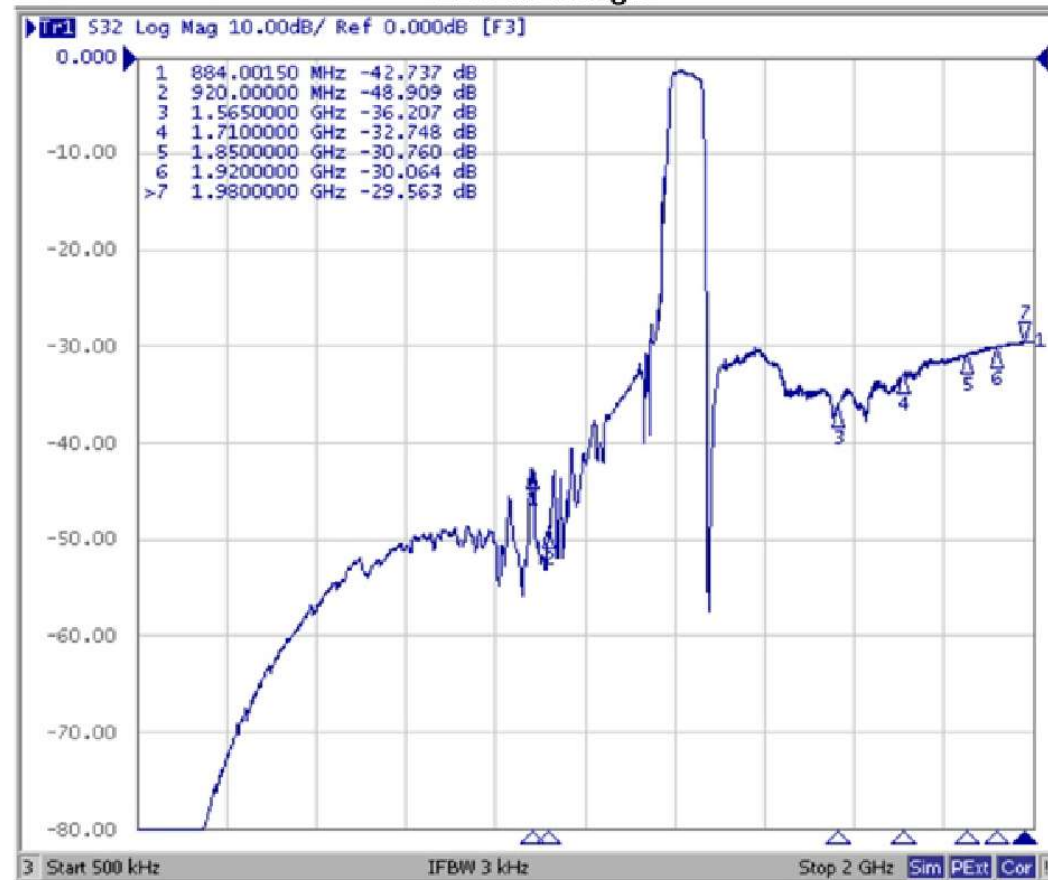
Year/Month	1	2	3	4	5	6	7	8	9	10	11	12
2017	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>J</u>	<u>K</u>	<u>L</u>	<u>M</u>
2018	<u>N</u>	<u>P</u>	<u>Q</u>	<u>R</u>	<u>S</u>	<u>T</u>	<u>U</u>	<u>V</u>	<u>W</u>	<u>X</u>	<u>Y</u>	<u>Z</u>
2019	<u>a</u>	<u>b</u>	<u>c</u>	<u>d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

## E. Frequency Characteristics:

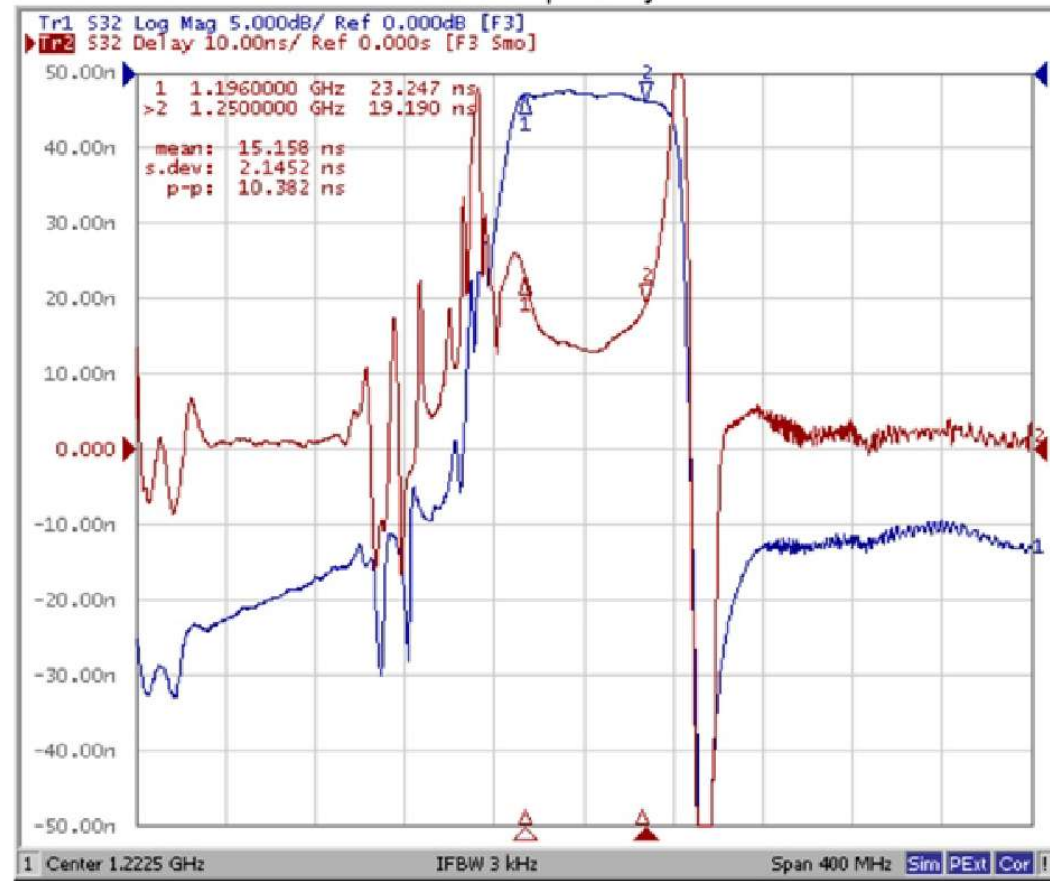
### L2 Pass Band



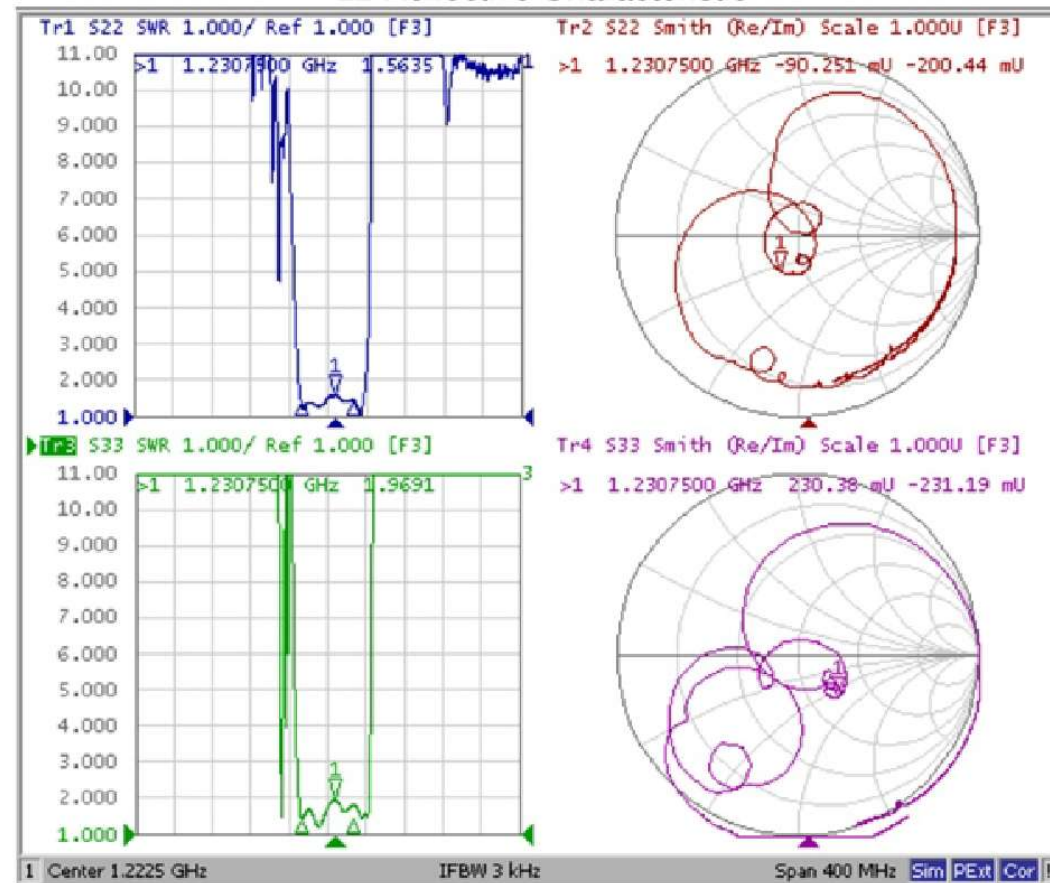
### L2 Full Range



### L2 Group Delay

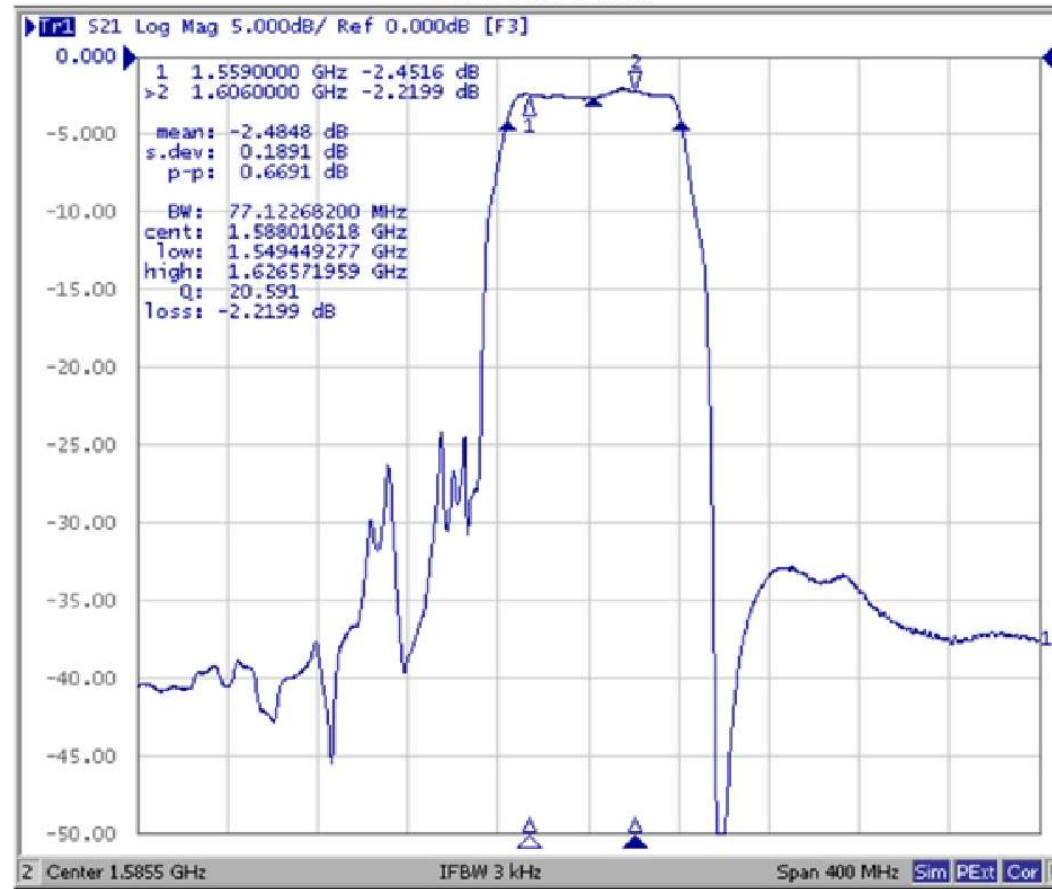


### L2 Reflective Characteristic

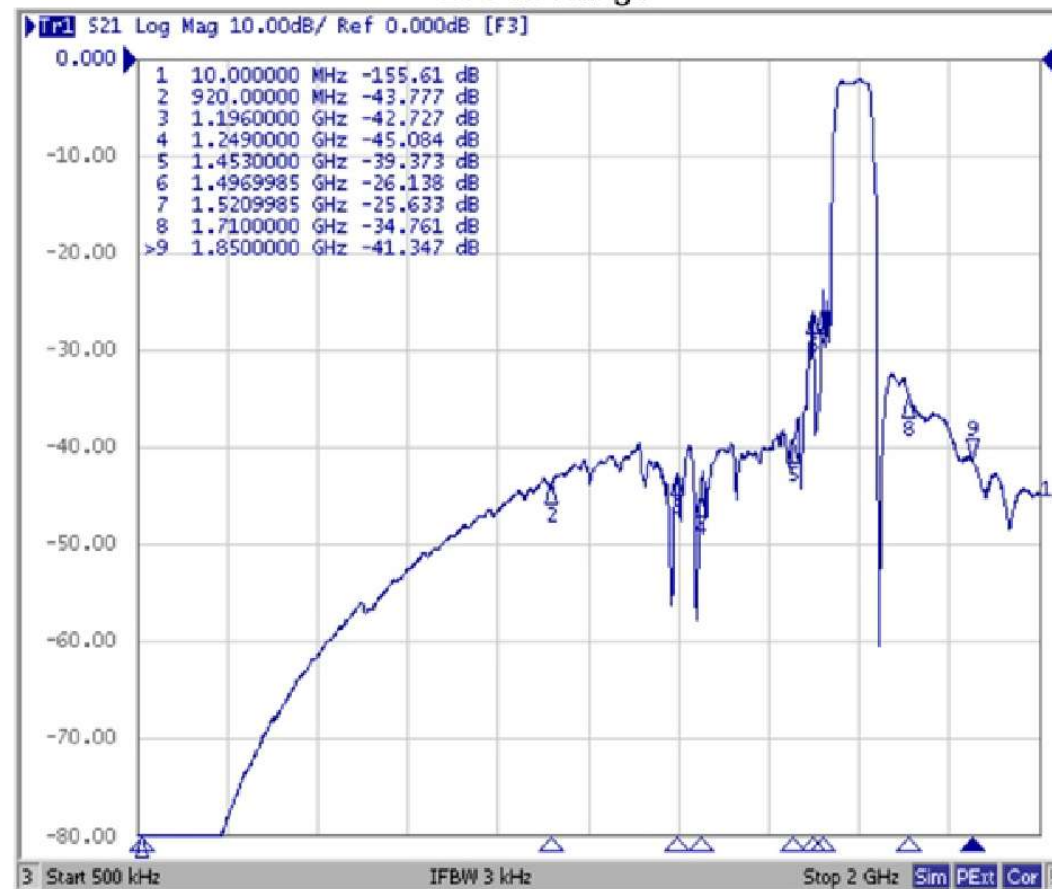




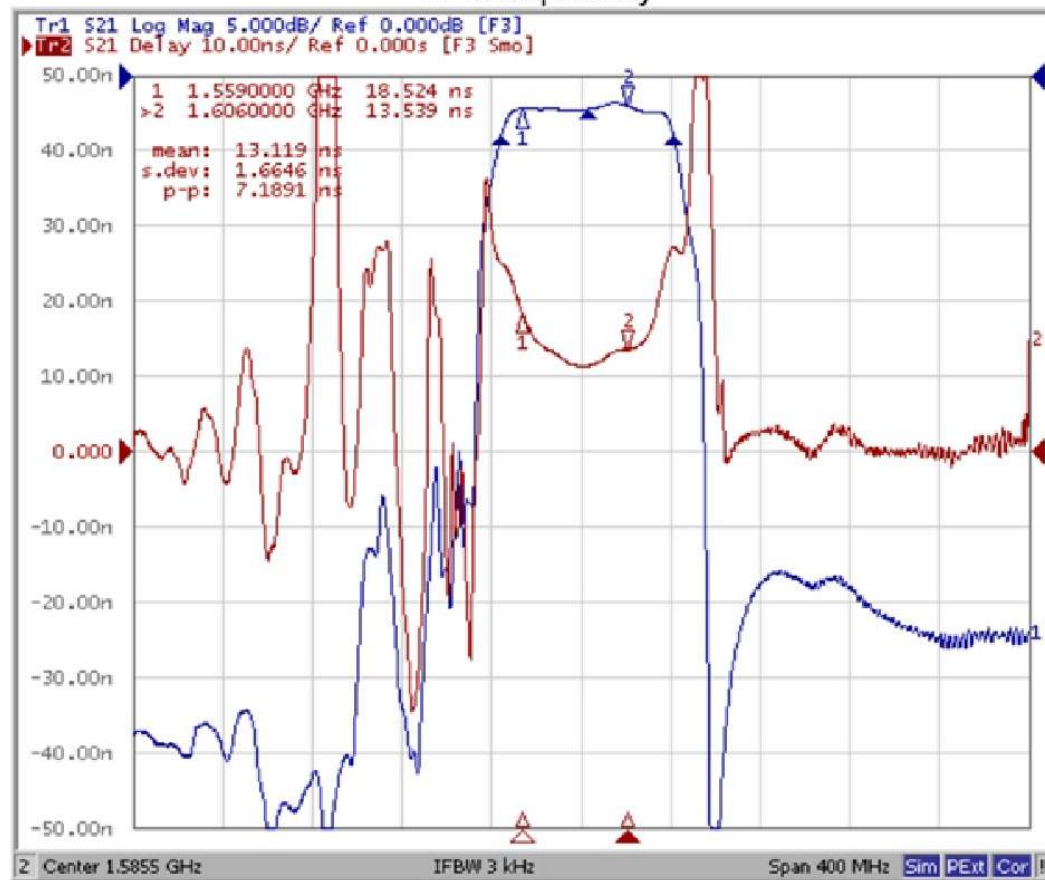
### L1 Pass Band



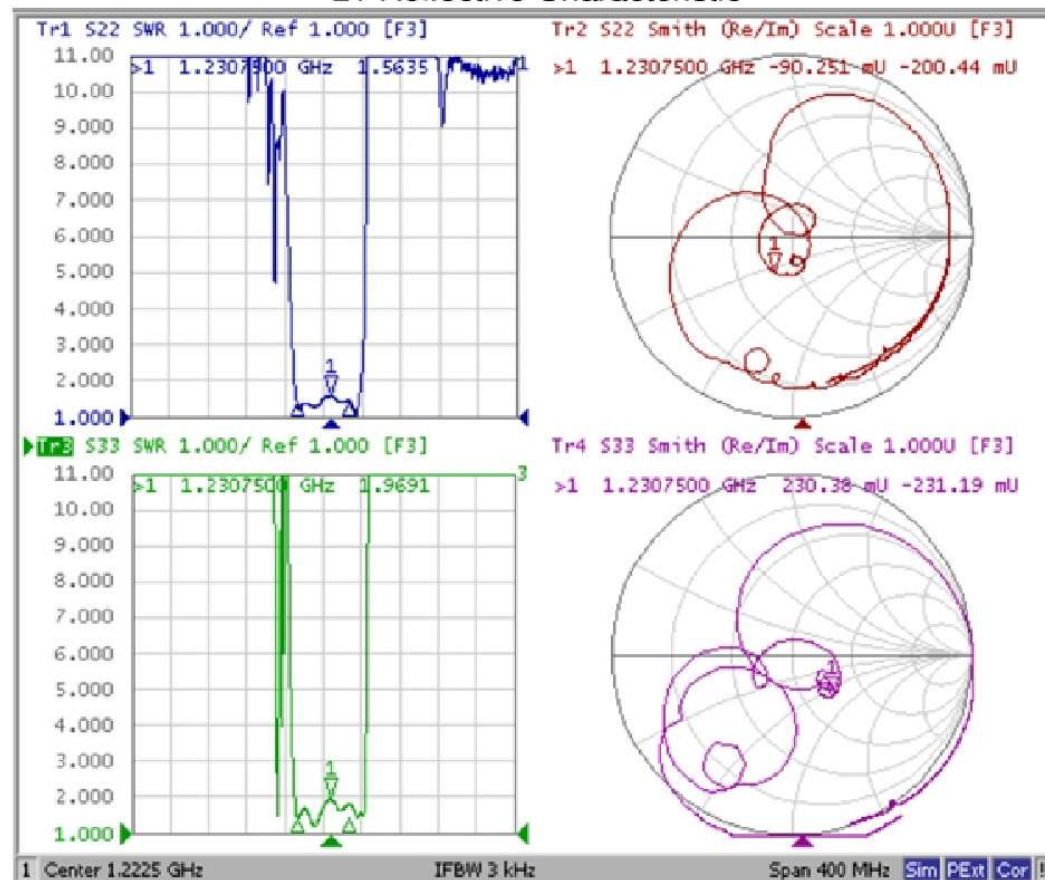
### L1 Full Range



### L1 Group Delay



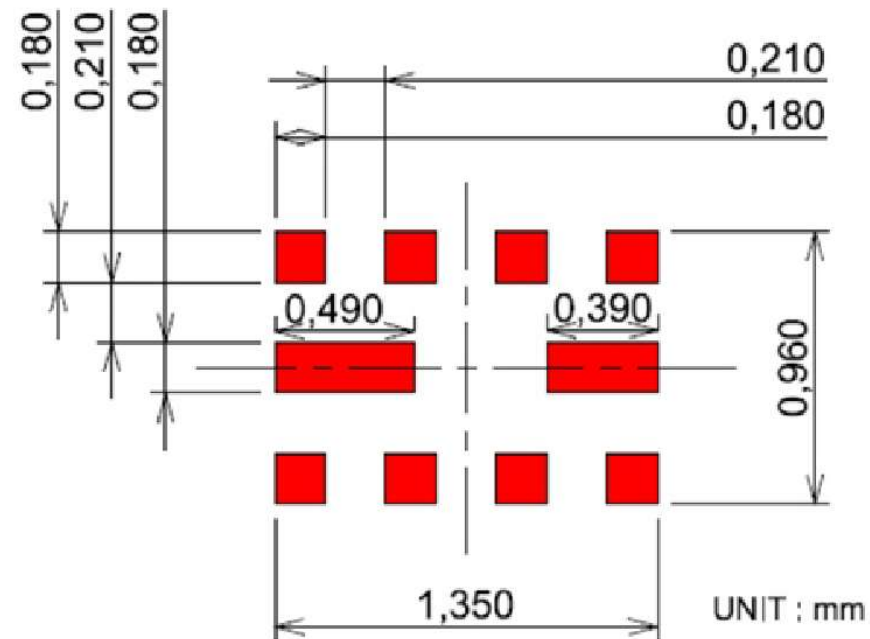
### L1 Reflective Characteristic



### Isolation



### F. PCB FOOTPRINT:

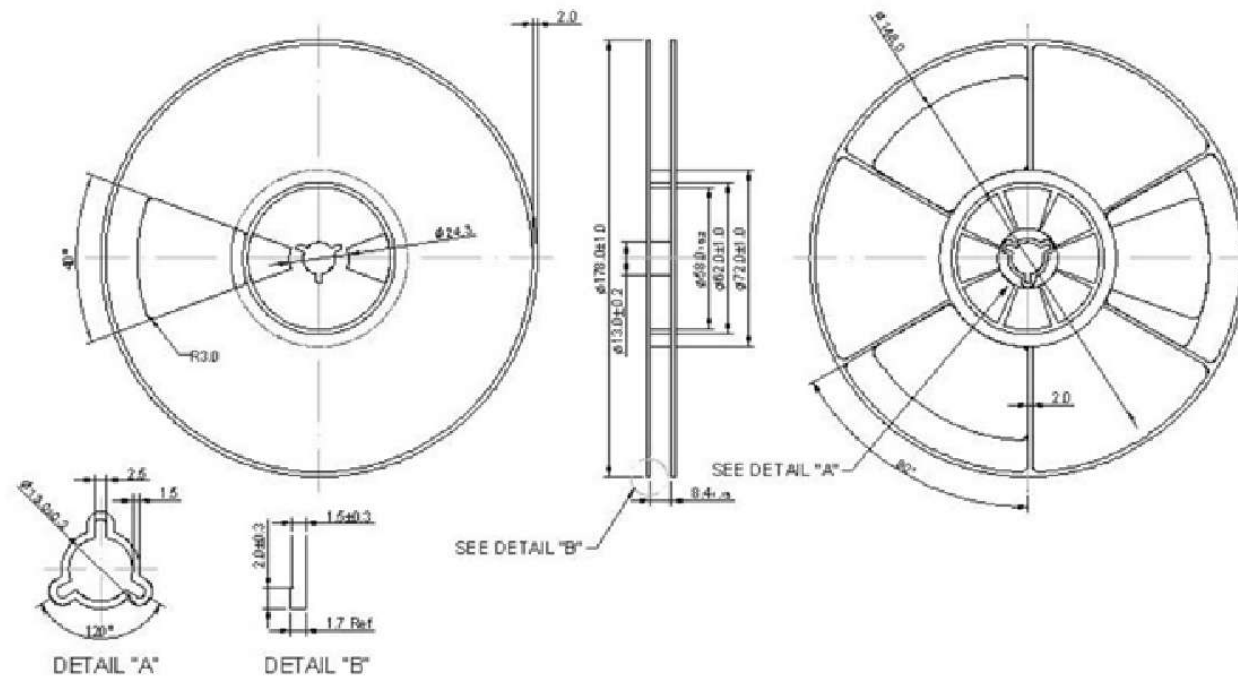




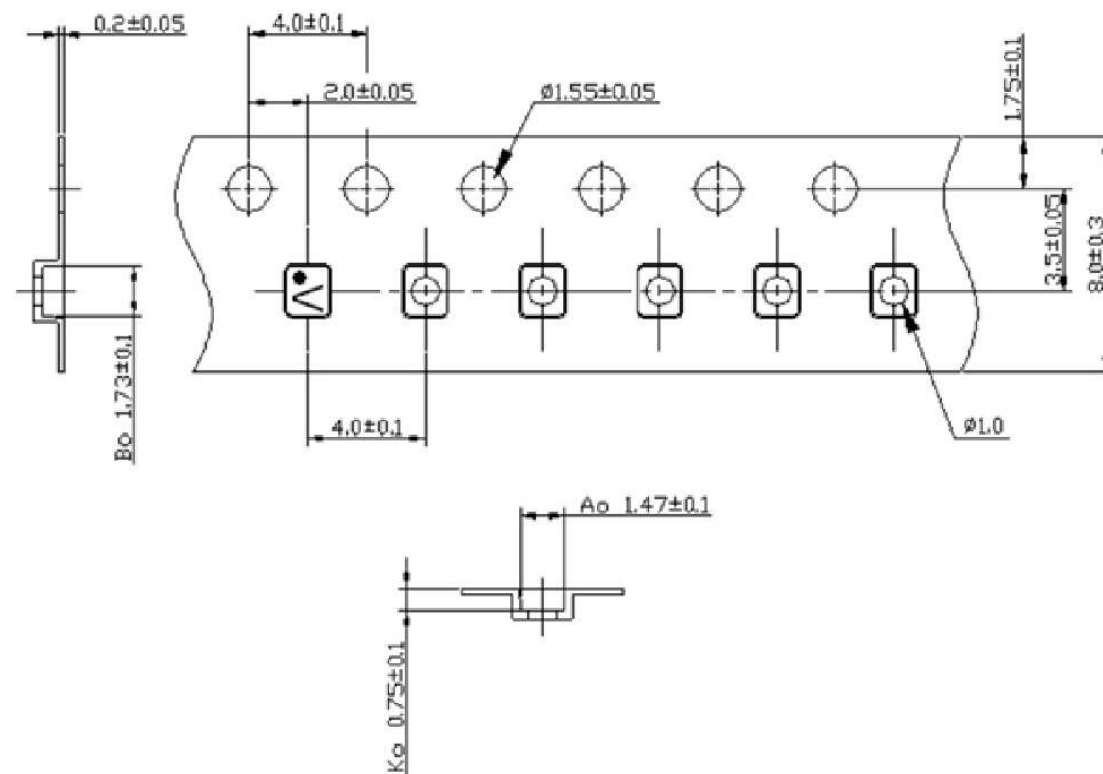
## G. PACKING:

### 1. REEL DIMENSION

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



### 2. TAPE DIMENSION



## H. RECOMMENDED REFLOW PROFILE :

1. Preheating shall be fixed at  $150\sim 180^{\circ}\text{C}$  for  $60\sim 90$  seconds.
2. Ascending time to preheating temperature  $150^{\circ}\text{C}$  shall be 30 seconds min.
3. Heating shall be fixed at  $220^{\circ}\text{C}$  for  $50\sim 80$  seconds and at  $260^{\circ}\text{C} +0/-5^{\circ}\text{C}$  peak ( $20\sim 40\text{sec}$ ).
4. Time: 2 times.

