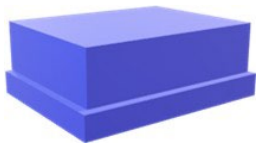
RFMi
A BRAND OF AKOUSTIS

RoHS compliant

Automotive grade product

SF2516LA

2442 MHz SAW Filter



SM1109-5H

Maximum Rating:

- Input Power Level : 25dBm (2402.5~2481.5MHz) (Ta=+50deg C,5000h)
- DC Voltage : 5V
- Operating Temperature: -40°C to +105°C
- Operable Temperature: -40°C to +125°C
- Storage Temperature: -55°C to +125°C
- Complies with Directive 2002/95/EC
- Moisture Sensitivity Level: 1
- AEC-Q200 Qualified

Electrical Characteristics:

Terminating source impedance : Zs = 50 // 8.2nH Ω(Single-ended)
Terminating load impedance : ZL = 50 // 6.2nH Ω(Single-ended)

Item		Unit	Min.	Typ.	Max.	Note
Center Frequency	**Fc**	MHz	-	2442		-
Insertion Loss (2402.5~2421.5MHz)	**IL**	dB(*1)(*2)	-	1.1	3.3	CH1
Insertion Loss (2407.5~2471.5MHz)	**IL**	dB(*1)(*2)		1.0	1.9	CH2 to 11
Insertion Loss (2457.5~2476.5MHz)	**IL**	dB(*1)(*2)		1.1	2.3	CH12
Insertion Loss (2462.5~2481.5MHz)	**IL**	dB(*1)(*2)		1.2	3.0	CH13
Insertion Loss (2402.5~2481.5MHz)	**IL**	dB(*1)(*2)	-	1.2	2.7	+25°C
Amplitude Ripple (2402.5~2481.5MHz)		dB	-	0.8	2.6	Any 19 MHz
Input VSWR (2402.5~2481.5MHz)				1.3	2.9	
Output VSWR (2402.5~2481.5MHz)				1.2	2.9	
Attenuation (reference level from 0 dB)						

699 ~ 960 MHz	dB	33	37	-	-
1425 ~ 2170 MHz	dB	25	28	-	-
2300 ~ 2370 MHz	dB(*3)	28	37	-	
2370 ~ 2375 MHz	dB(*3)	10	35	-	
2375 ~ 2380 MHz	dB(*3)	3	22	-	
2500 ~ 2505 MHz	dB(*3)	2	22	-	-30 to+85°C-
	dB(*3)	9	22	-	+25°C
2505 ~ 2510 MHz	dB(*3)	5	35	-	-
2510 ~ 2570 MHz	dB(*3)	12	34	-	
2570 ~ 2690 MHz	dB	30	33	-	
2690 ~ 7500 MHz	dB	27	32	-	
4900 ~ 5805 MHz	dB	35	41	-	
7200 ~ 7500 MHz	dB	30	39	-	

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

(*2) Integrated Insertion Loss over 19MHz CH BW.

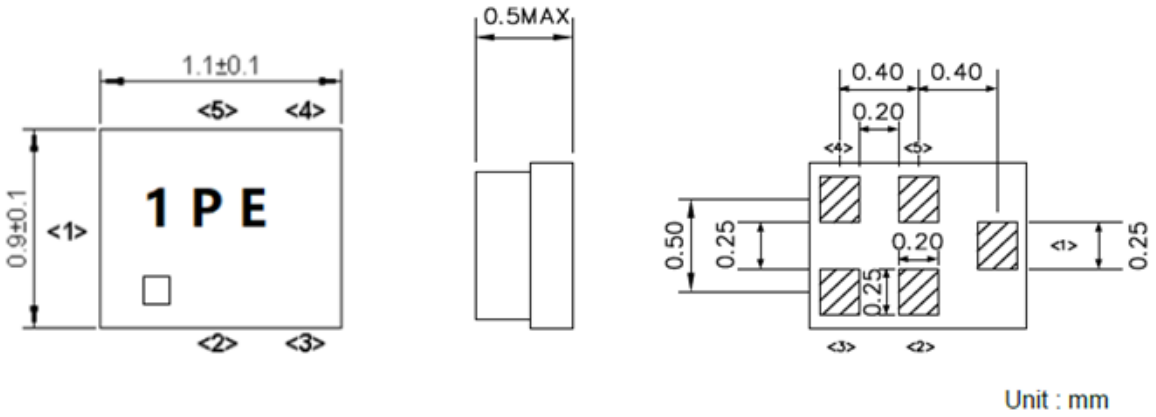
(*3) Integrated attenuation over 5MHz CH BW.

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.

OUTLINE DRAWING:



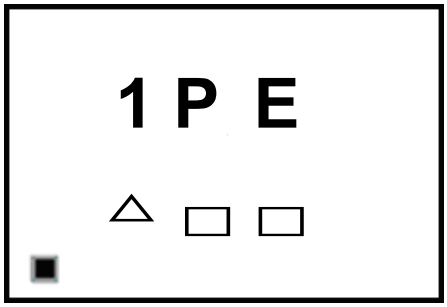
Not Specified Tolerance : +/-0.1 mm

Pin assignment

Pin No.	Pin name	Description
1	In	Input
2	GND	Ground
3	GND	Ground
4	Out	Output
5	GND	Ground

Figure 1. Dimensions and Pin assignment

Top View (Mass Production)



Marking name : 1 PE

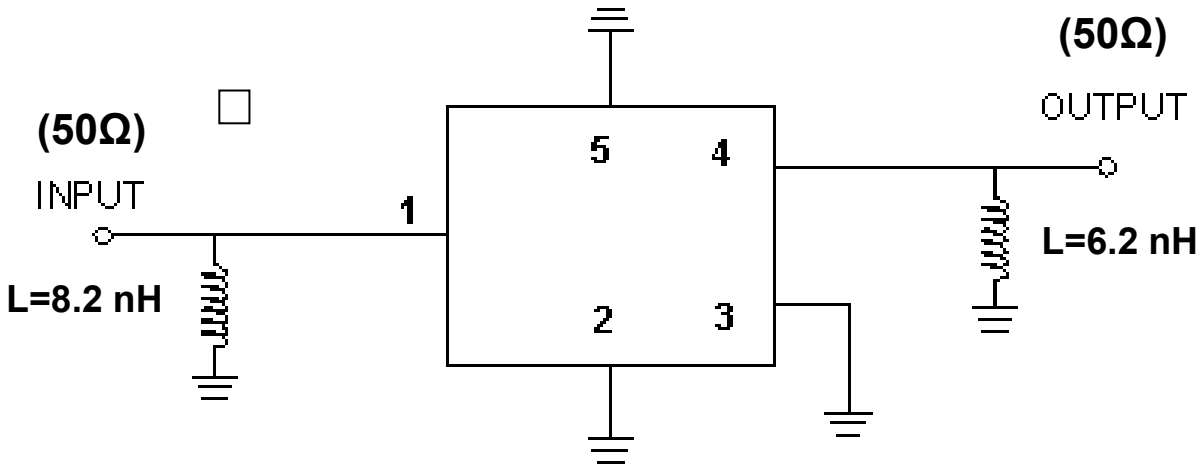
△ : Date Code

□ □ : Lot No. (Indicated by 0~9 or A to Z and a to z, except I, O, i, o and l)

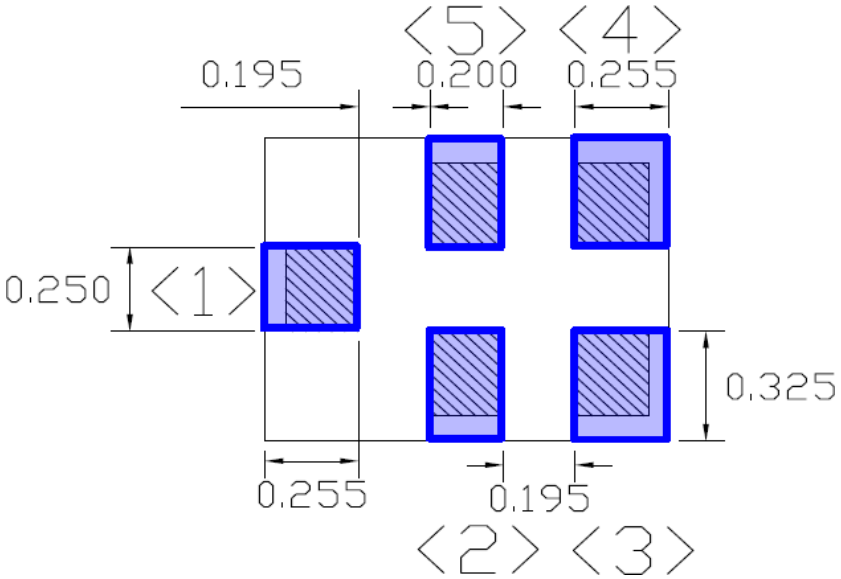
Date Code. Follow below table. (4-year cycle)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019 / 2023	a	b	c	d	e	f	g	h	j	k	l	m
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	V	W	X	Y	Z

MEASUREMENT CIRCUIT:

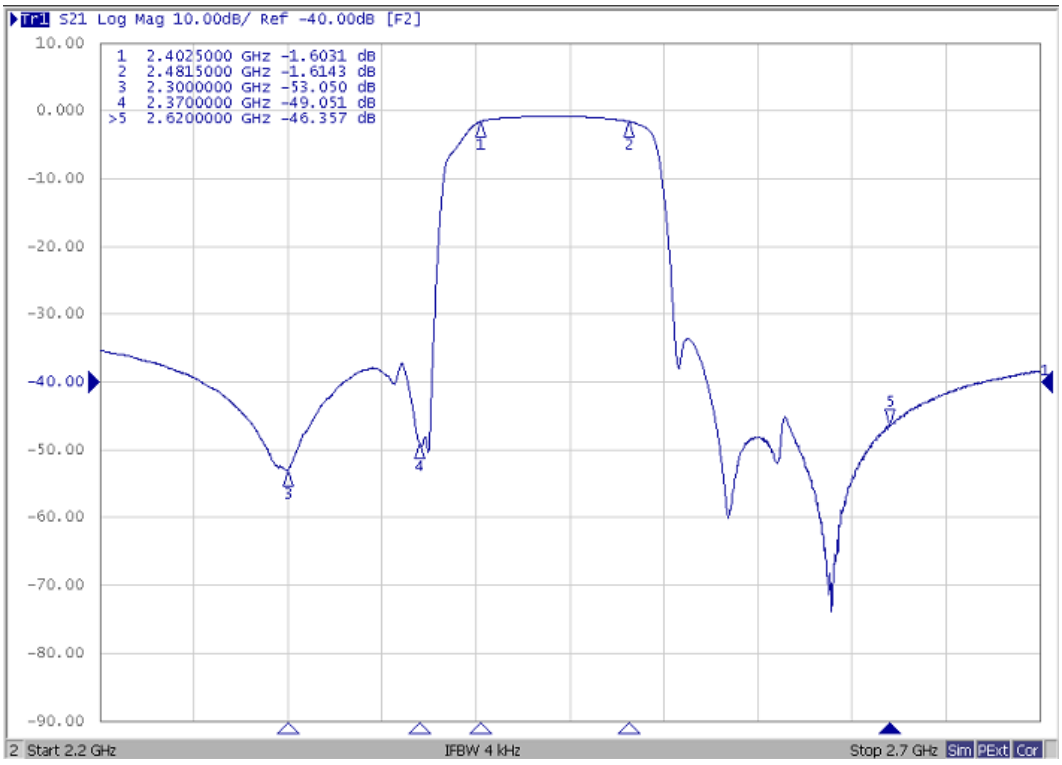


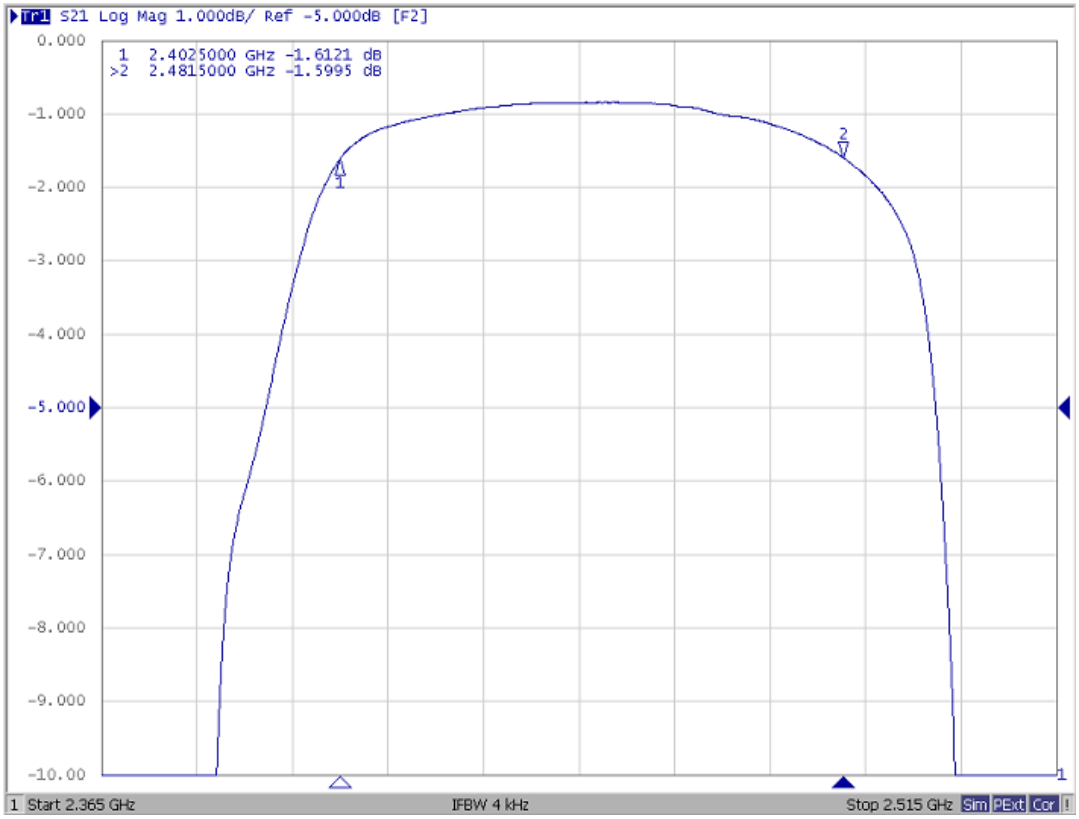
PCB FOOTPRNT:



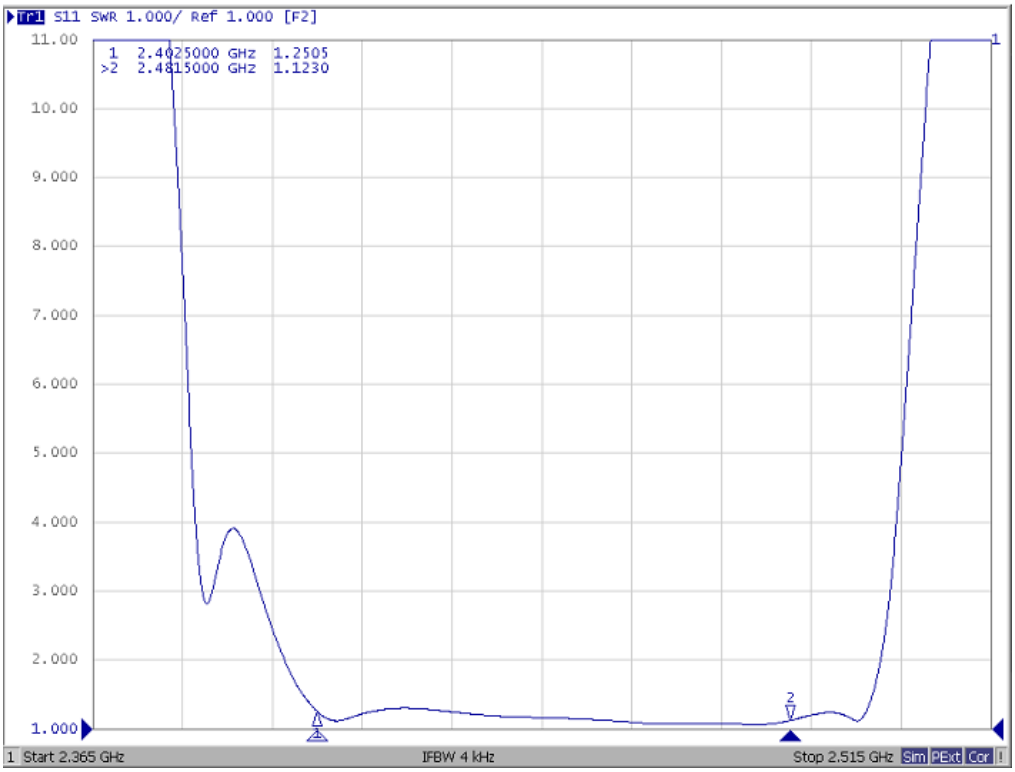
FREQUENCY CHARACTERISTICS:

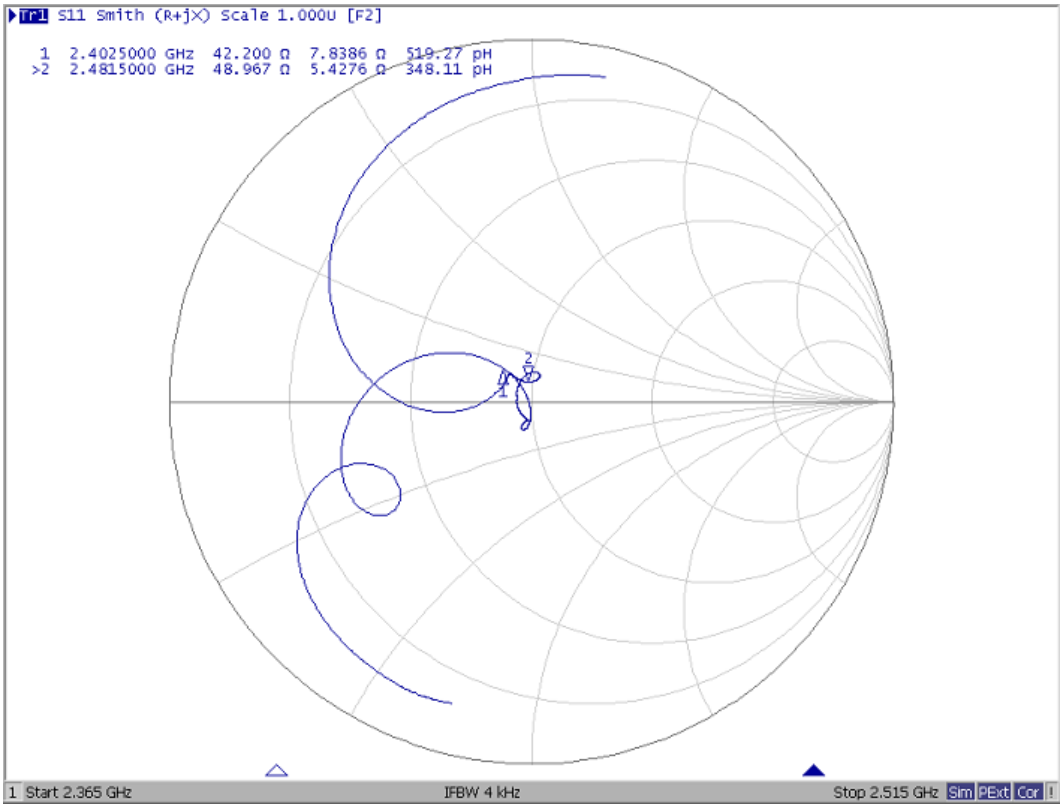
Passband



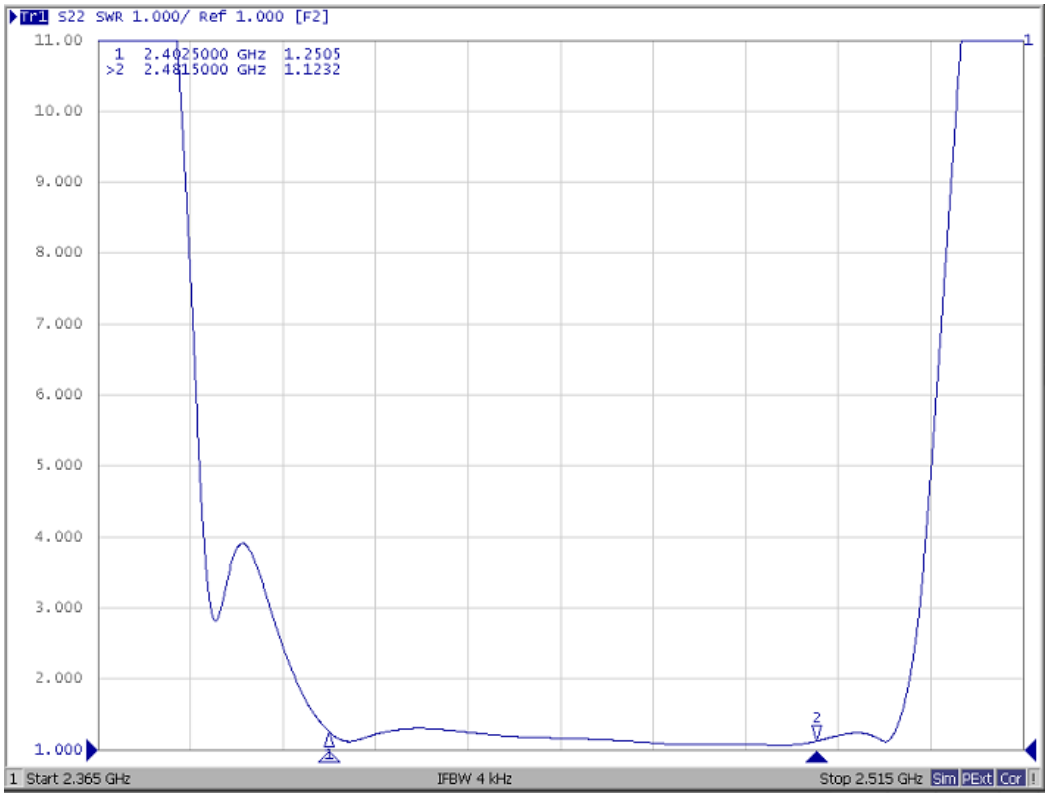


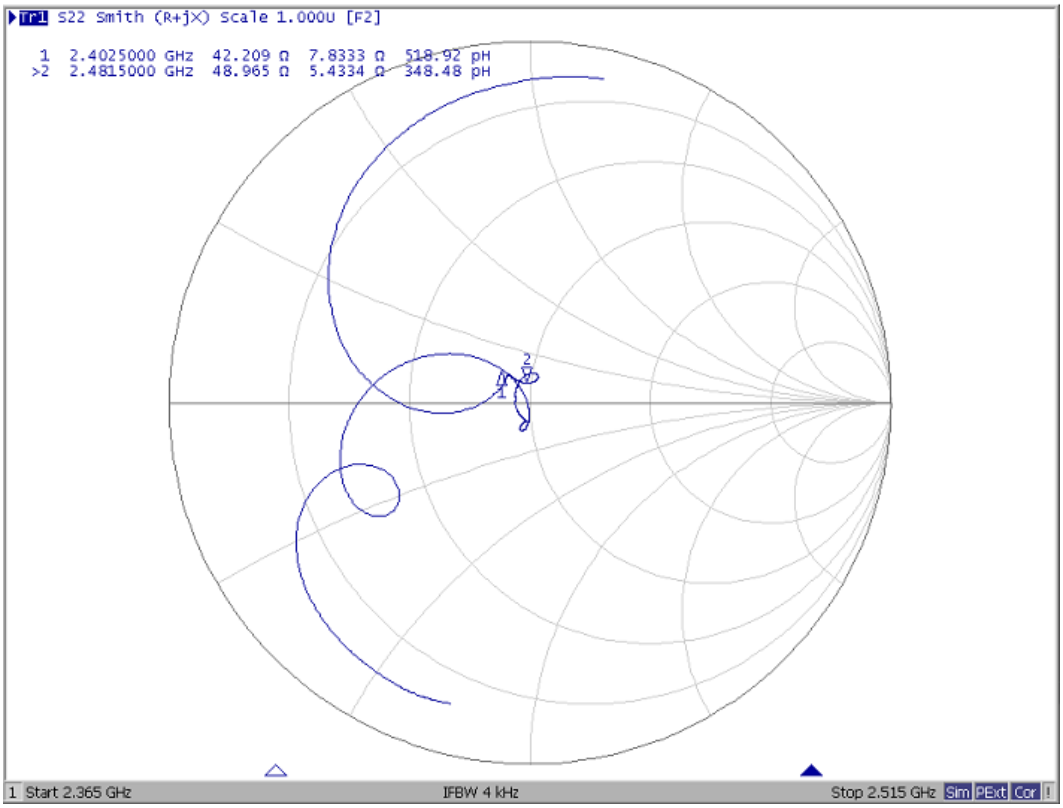
Input Port


Tr1 S11 SWR 1.000/ Ref 1.000 [F2]
1 2.4025000 GHz 1.2505
>2 2.4815000 GHz 1.1230
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Start 2.365 GHz
IFBW 4 kHz
Stop 2.515 GHz
Sim PExt Cor

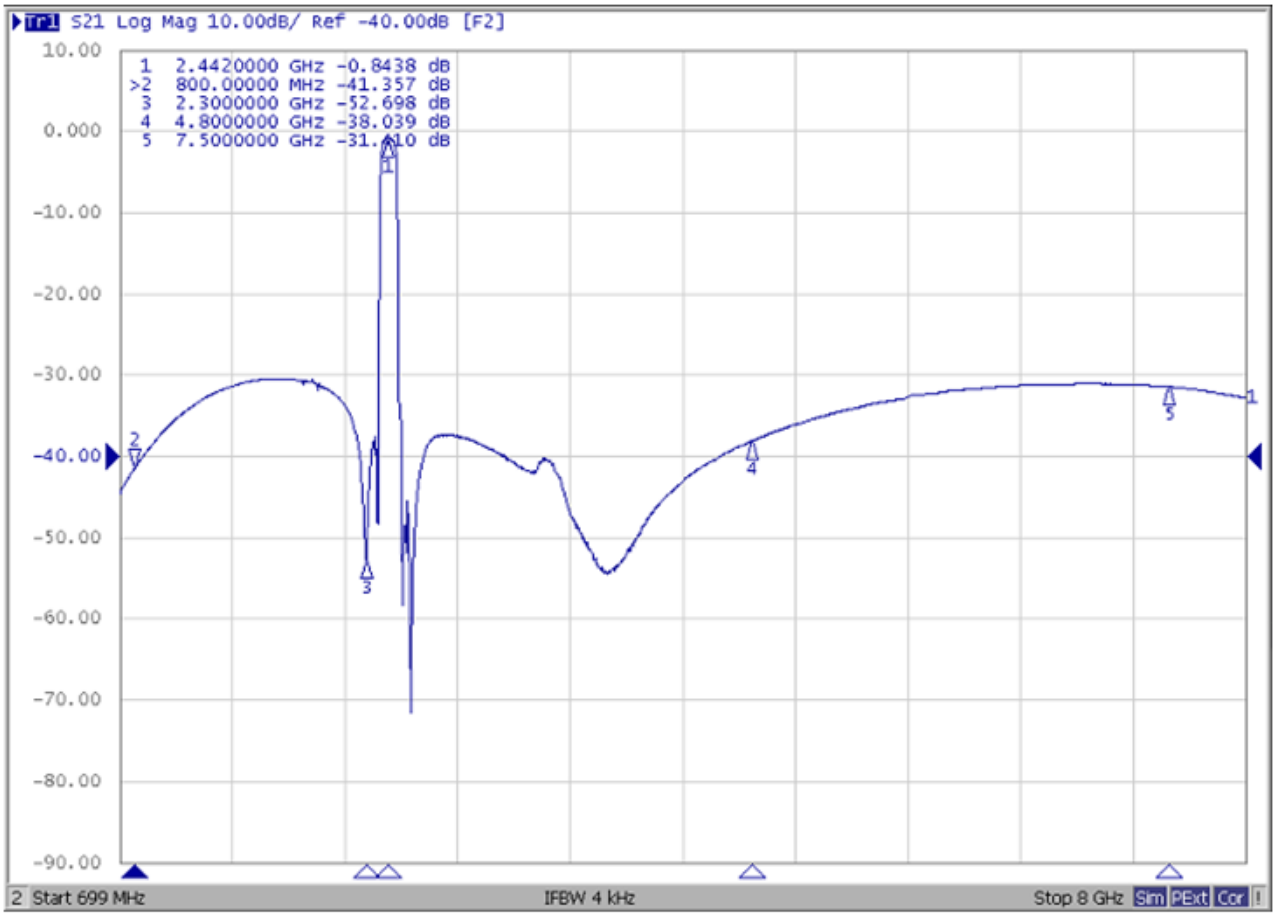

Tr1 S11 Smith (R+jX) Scale 1.000U [F2]
1 2.4025000 GHz 42.200 Ω 7.8386 Ω 519.27 pH
>2 2.4815000 GHz 48.967 Ω 5.4276 Ω 348.11 pH
1 Start 2.365 GHz
IFBW 4 kHz
Stop 2.515 GHz
Sim PExt Cor

Output Port


Tr1 S22 SWR 1.000/ Ref 1.000 [F2]
1 2.4025000 GHz 1.2505
>2 2.4815000 GHz 1.1232
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Start 2.365 GHz
IFBW 4 kHz
Stop 2.515 GHz
Sim PExt Cor


Tr1 S22 Smith (R+jX) Scale 1.000U [F2]
1 2.4025000 GHz 42.209 Ω 7.8333 Ω 518.92 pH
>2 2.4815000 GHz 48.965 Ω 5.4334 Ω 348.48 pH
1 Start 2.365 GHz
IFBW 4 kHz
Stop 2.515 GHz
Sim PExt Cor

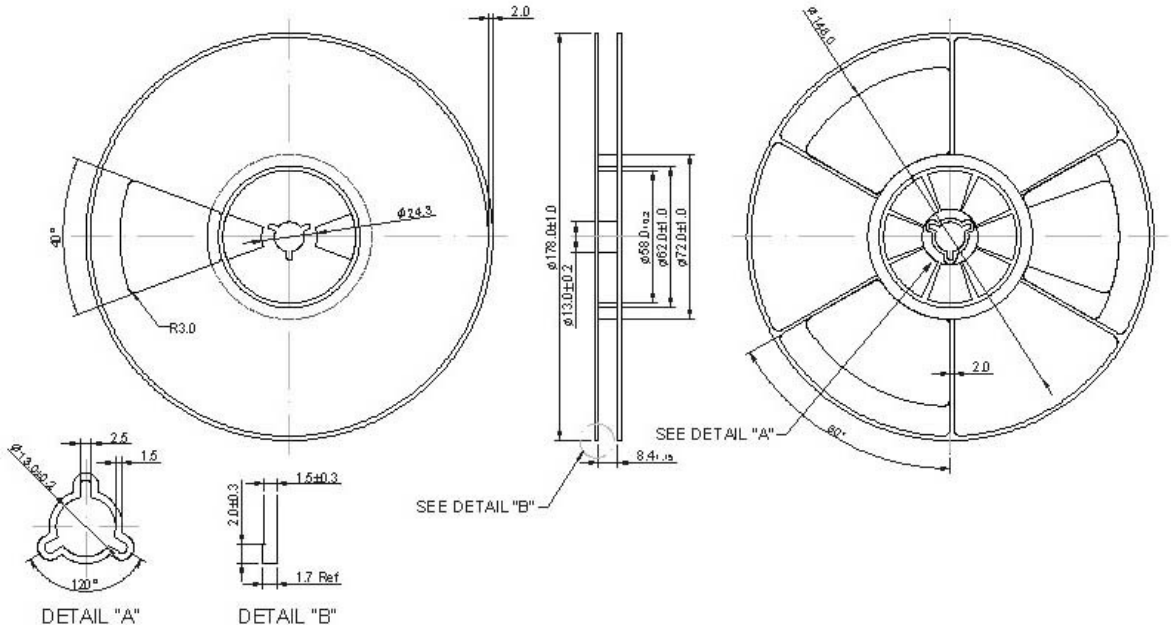
Wide


Tr1 S21 Log Mag 10.00dB/ Ref -40.00dB [F2]
1 2.4420000 GHz -0.8438 dB
>2 800.00000 MHz -41.357 dB
3 2.3000000 GHz -52.698 dB
4 4.8000000 GHz -38.039 dB
5 7.5000000 GHz -31.410 dB
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
-60.00
-70.00
-80.00
-90.00
2 Start 699 MHz
IFBW 4 kHz
Stop 8 GHz
Sim
PExt
Cor

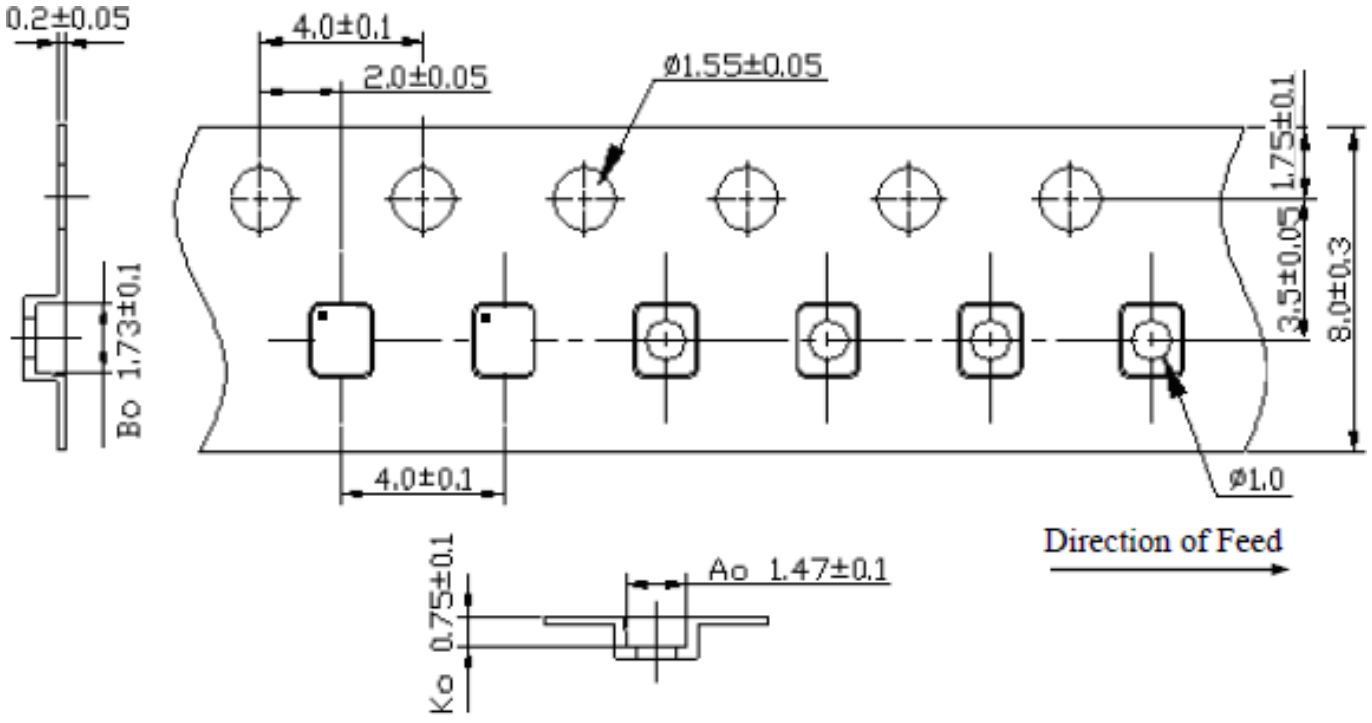
Reel Dimension

Reel Count:
7" = 2000
13" = 10,000

Tape and Reel Standard per ANSI/EIA-481



Tape Dimension



Recommended Reflow Profile

1. Preheating shall be fixed at 150~180ºC for 60~90 seconds.
2. Ascending time to preheating temperature 150ºC shall be 30 seconds min.
3. Heating shall be fixed at 220ºC for 50~80 seconds and at 260ºC +0/-5ºC peak (10 seconds).
4. Time: 5 times maximum.