

# 1176.5 MHz SMD SAW Filter

ABSTS5A2-210M011M

Request Samples



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1.1 x 0.9 x 0.5 mm  
RoHS/RoHS II Compliant  
MSL Level = 2a

## Features

- Low Insertion Loss
- High out of Band Attenuation
- Compact Package Size

## Applications

- RF Filter for Front End GPS L5 Applications
- Navigational and Positioning Applications
- GPS Receivers

## Electrical Specifications

Parameters		Specifications		
		Min	Typ	Max
Nominal Center Frequency (Fc) (MHz)			1176.5	
Insertion Loss (1164 ~ 1189 MHz) (dB)			1.8	2.4
Amplitude Ripple (1164 ~ 1189 MHz) (dB <sub>p-p</sub> )			0.5	1.3
VSWR (1164 ~ 1189 MHz)			1.8	2.1
Group Delay Deviation (1164 ~ 1189 MHz) (ns)			7	13
Temperature Coefficient (ppm/K)			-36	
Attenuation (dB)	100 ~ 814 MHz	53	63	
	814 ~ 849 MHz	53	62	
	849 ~ 980 MHz	51	57	
	980 ~ 1010 MHz	51	56	
	1010 ~ 1100 MHz	50	54	
	1100 ~ 1130 MHz	40	46	
	1250 ~ 1427 MHz	25	50	
	1427 ~ 1463 MHz	45	50	
	1710 ~ 2025 MHz	40	45	
	2300 ~ 2690 MHz	38	42	
	2690 ~ 3000 MHz	37	42	
3000 ~ 6000 MHz	17	22		
Terminating Source & Load Impedance (Ω)			50	
Input Power Level (dBm)			13 (2000h)	
DC Voltage (V)			3	

## Mechanical Specifications

Parameters	Specifications
Filter Dimension	1.1 x 0.9 x 0.5mm
Mounting Type	SMD Mount



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ABRACON IS  
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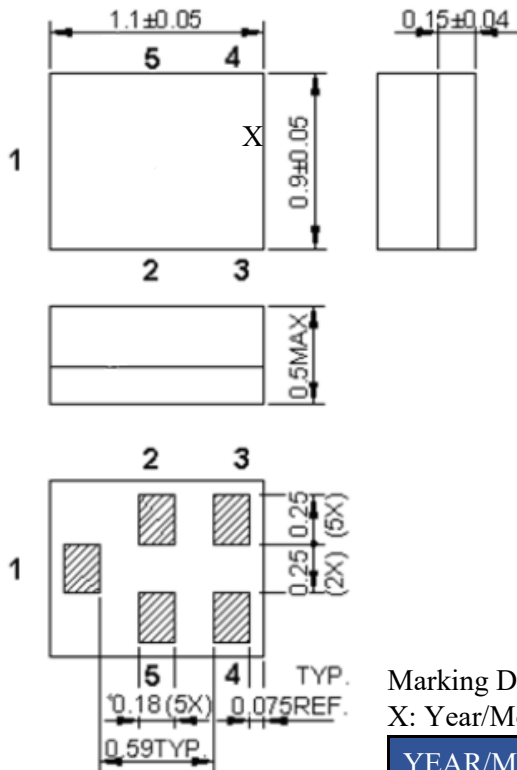


1.1 x 0.9 x 0.5 mm  
RoHS/RoHS II Compliant  
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## Environmental Specifications

Parameters	Specifications
Operating Temperature Range	-20°C to +85°C
Storage Temperature Range	40°C to +85°C
RoHS/ RoHS II Compliant	Yes
MSL level	2a
ESD	50V (MM), 100V (HBM)

## Package Dimensions



All tolerances are +/-0.05 mm unless otherwise specified  
Coplanarity: 0.1mm max  
1 to 5: Pin numbers  
Unit: mm

Pin No.	Symbol	Function
1	IN	Input
2	GND	Ground
3	GND	Ground
4	OUT	Output
5	GND	Ground

### Marking Description:

X: Year/Month Code (Follow the table)

YEAR/Month	1	2	3	4	5	6	7	8	9	10	11	12
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>j</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>

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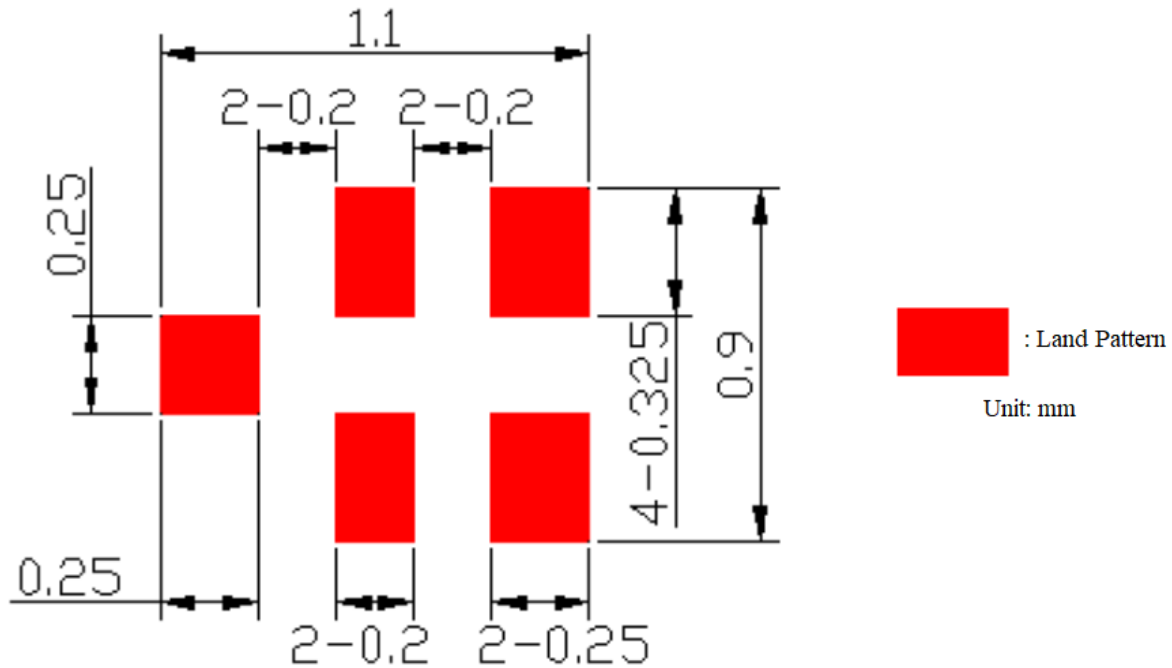


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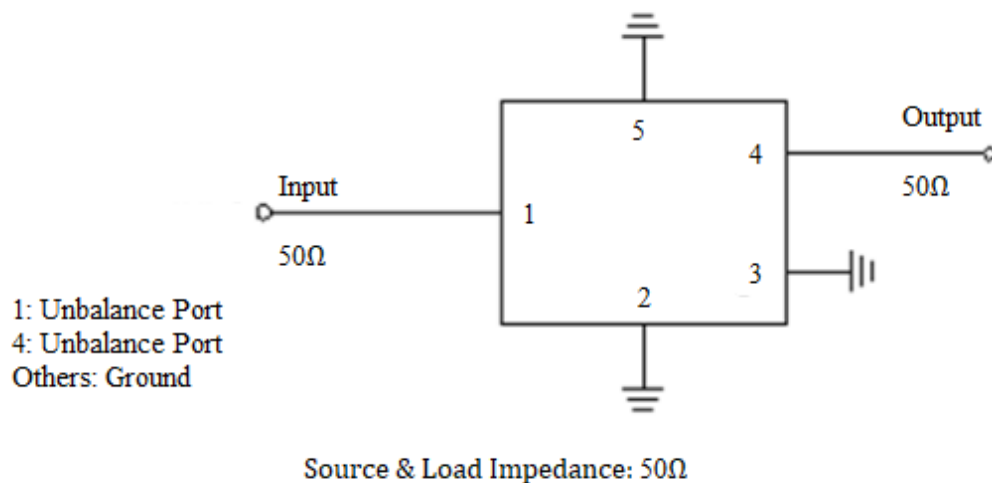


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## PCB Footprint



## Measurement Circuit



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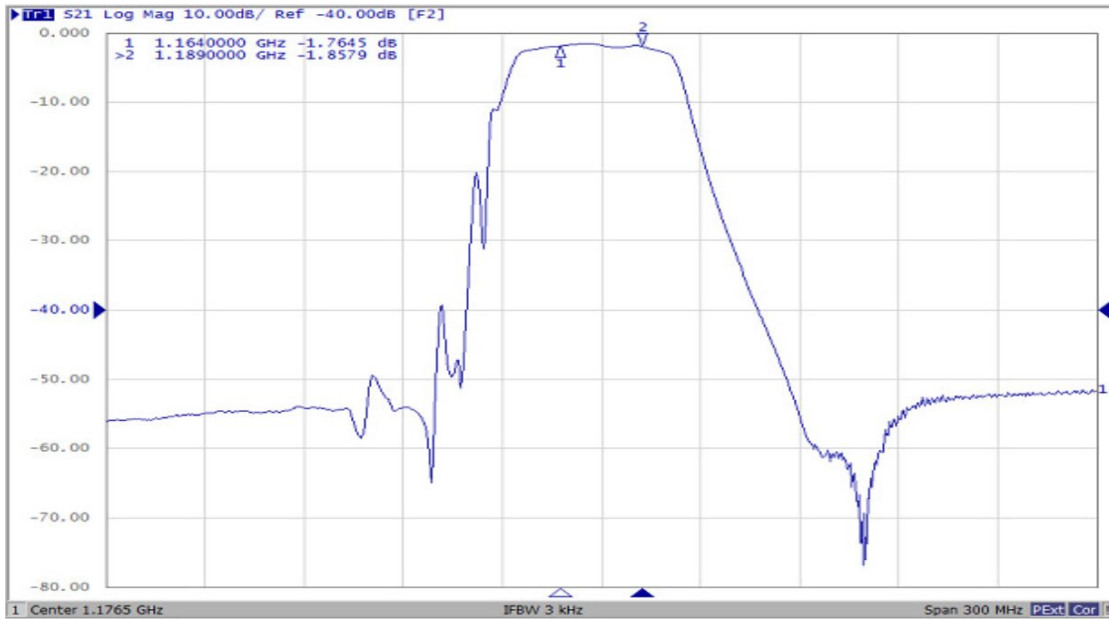
Check Inventory



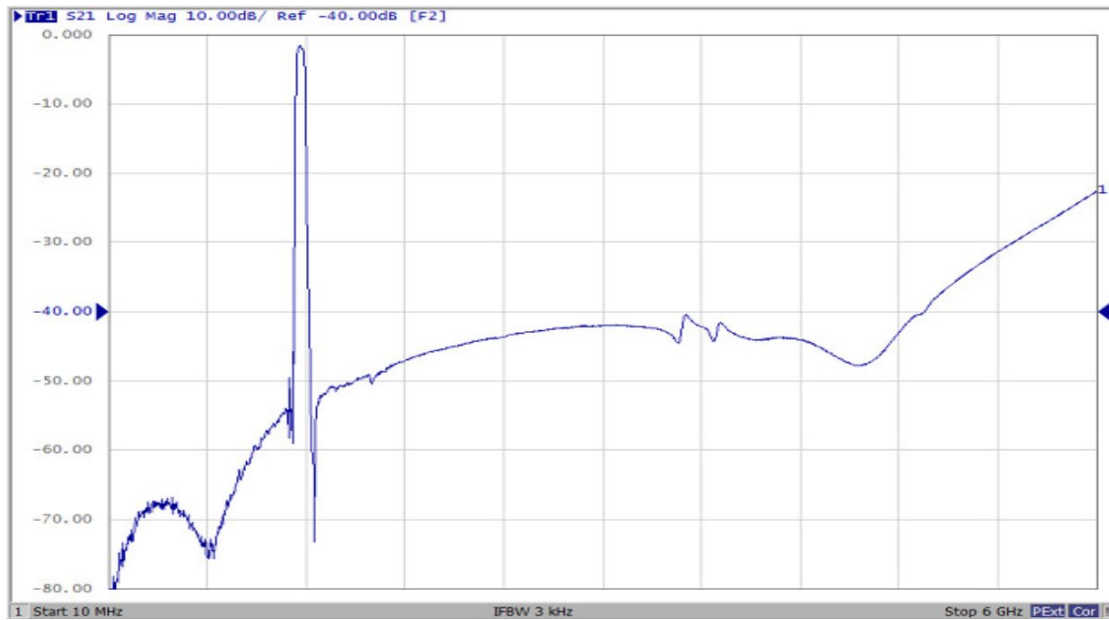
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## Transmission Characteristics

S21 (Narrowband)



S21 (Broadband)



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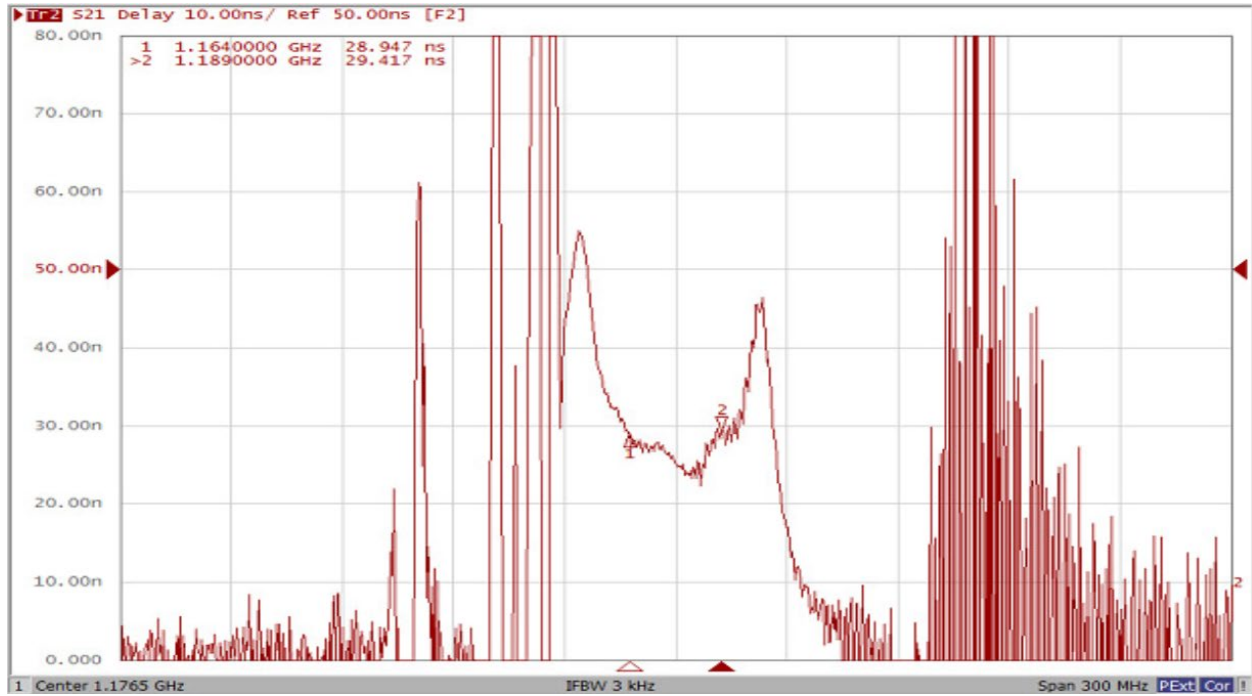


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S21 (Narrowband Delay)



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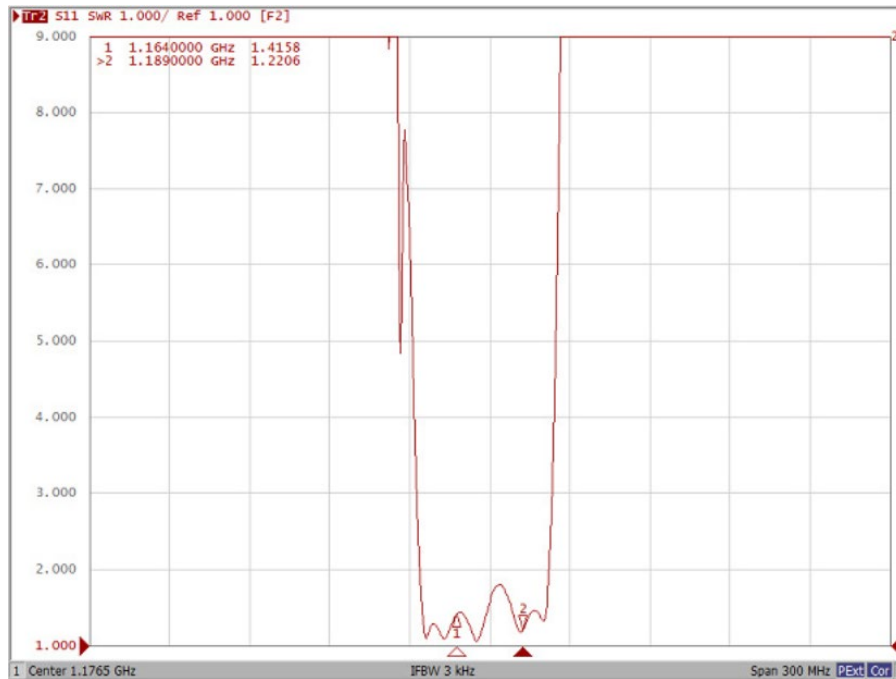
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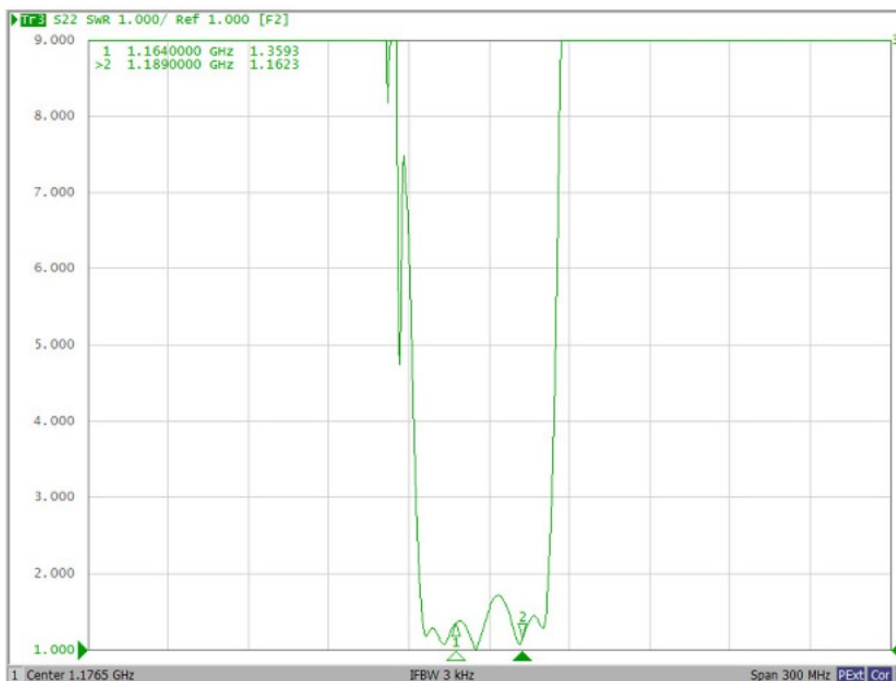
1.1 x 0.9 x 0.5 mm  
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## VSWR Graphs

S11 (Narrowband)



S22 (Narrowband)



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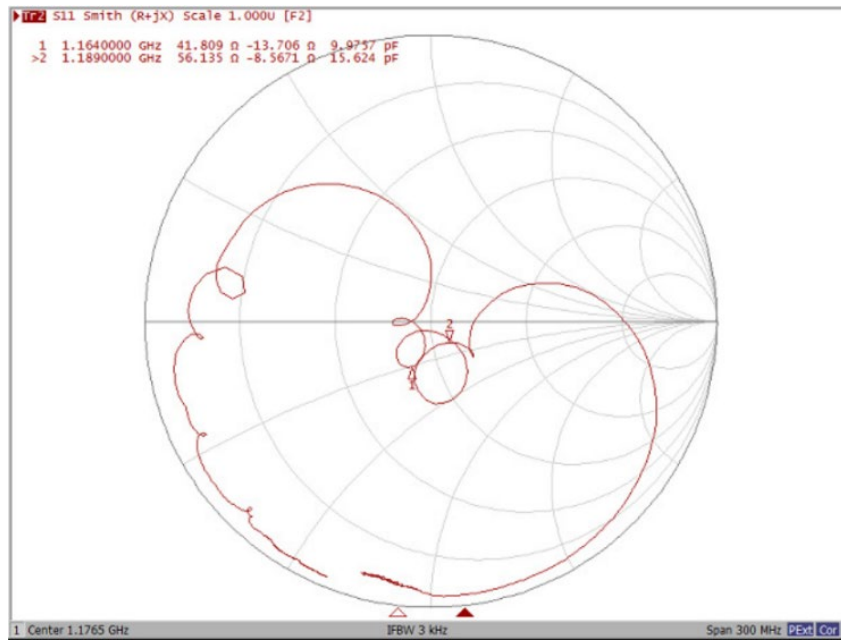
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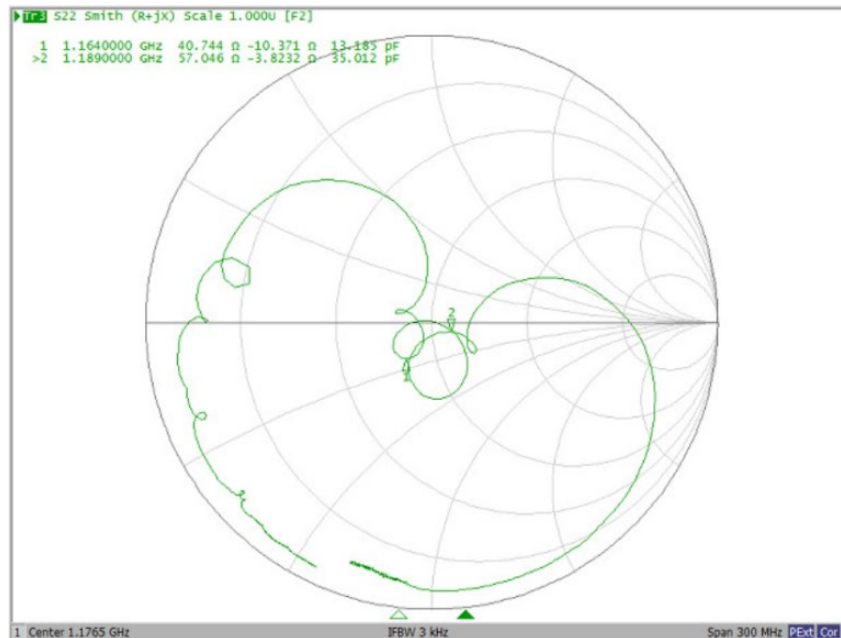
1.1 x 0.9 x 0.5 mm  
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## Smith Charts

### S11 (Narrowband)



### S22 (Narrowband)



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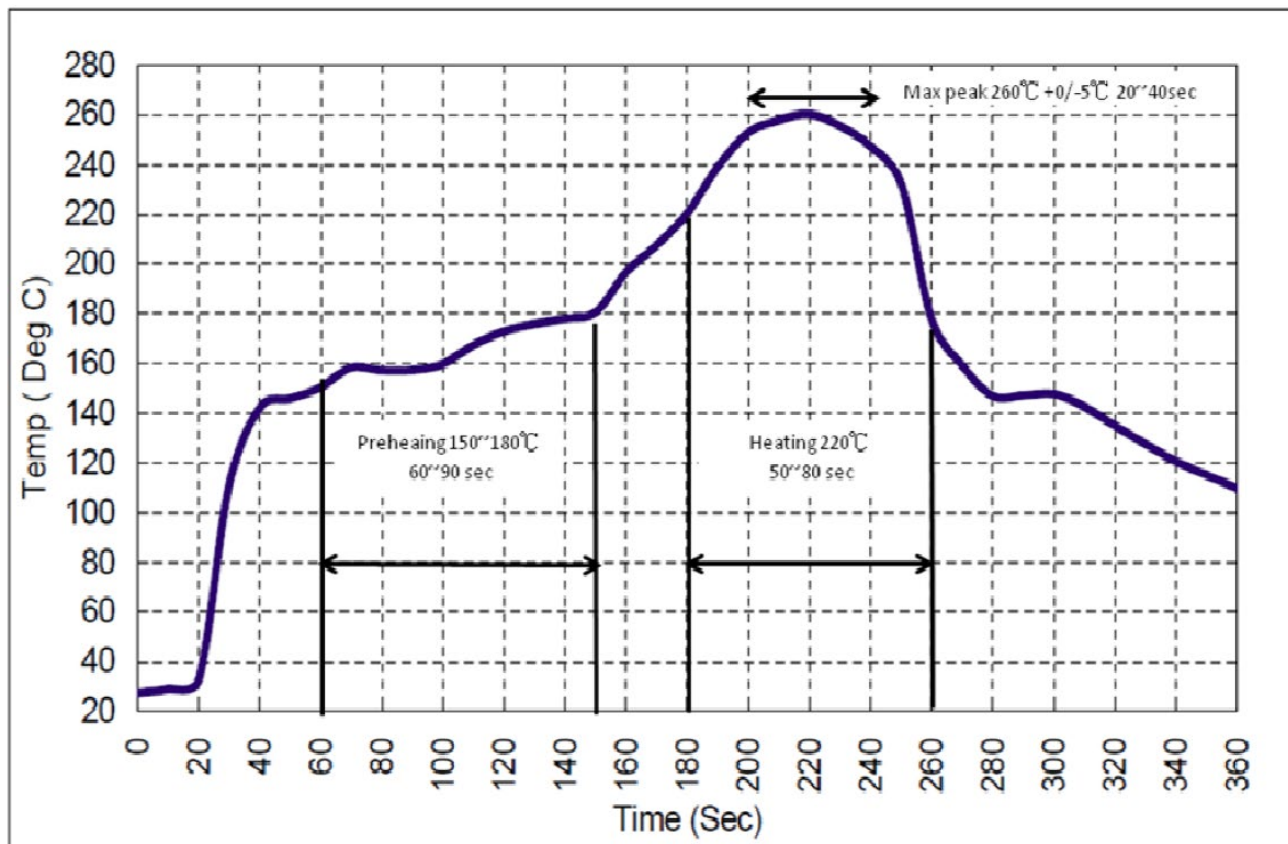
Check Inventory



1.1 x 0.9 x 0.5 mm  
RoHS/RoHS II Compliant  
MSL Level = 2a

## Recommended Reflow Profile

1. Preheating shall be fixed at 150°C~180°C for 60-90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds minimum.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 245~260°C peak (min 10 sec.)
4. Time :2 times





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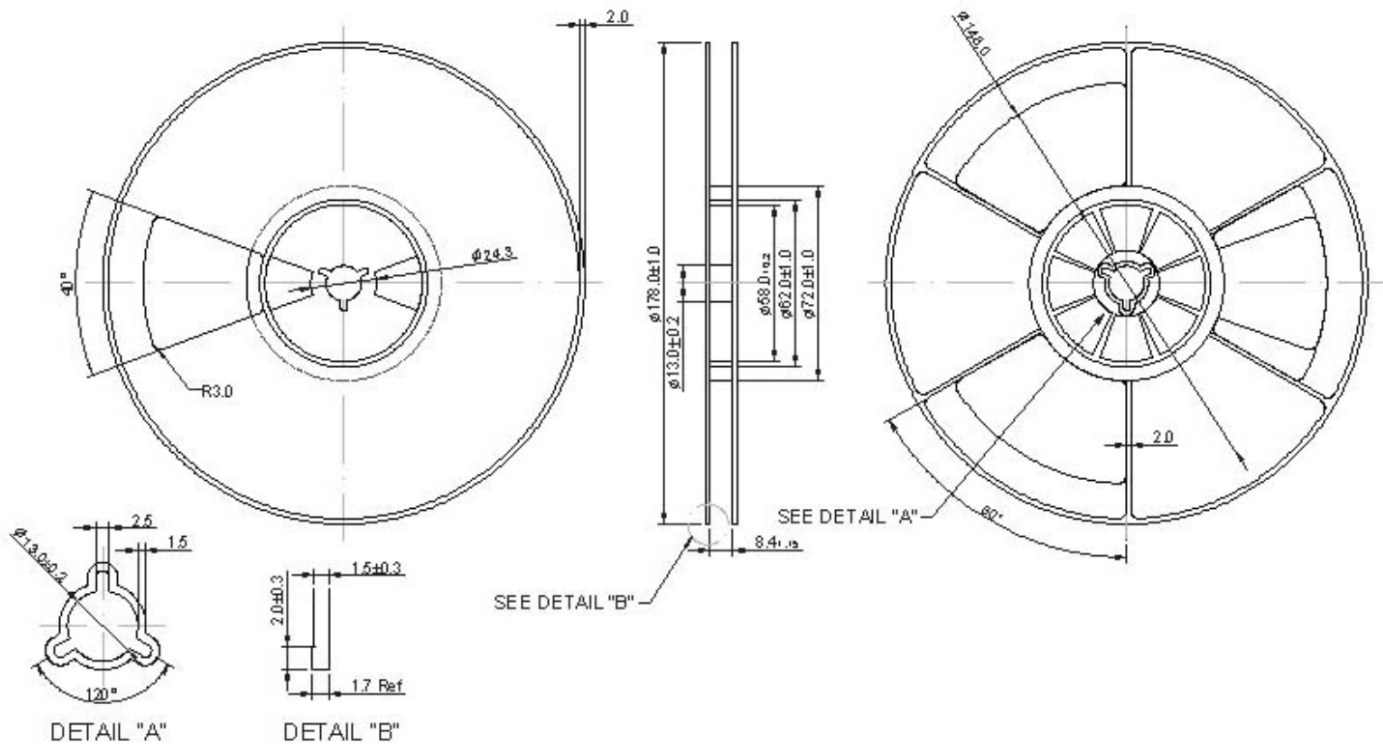


1.1 x 0.9 x 0.5 mm  
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## Packaging

Packaging Type: Reel and Tape  
Pieces per Reel: 5k

### Reel Dimension



Unit: mm

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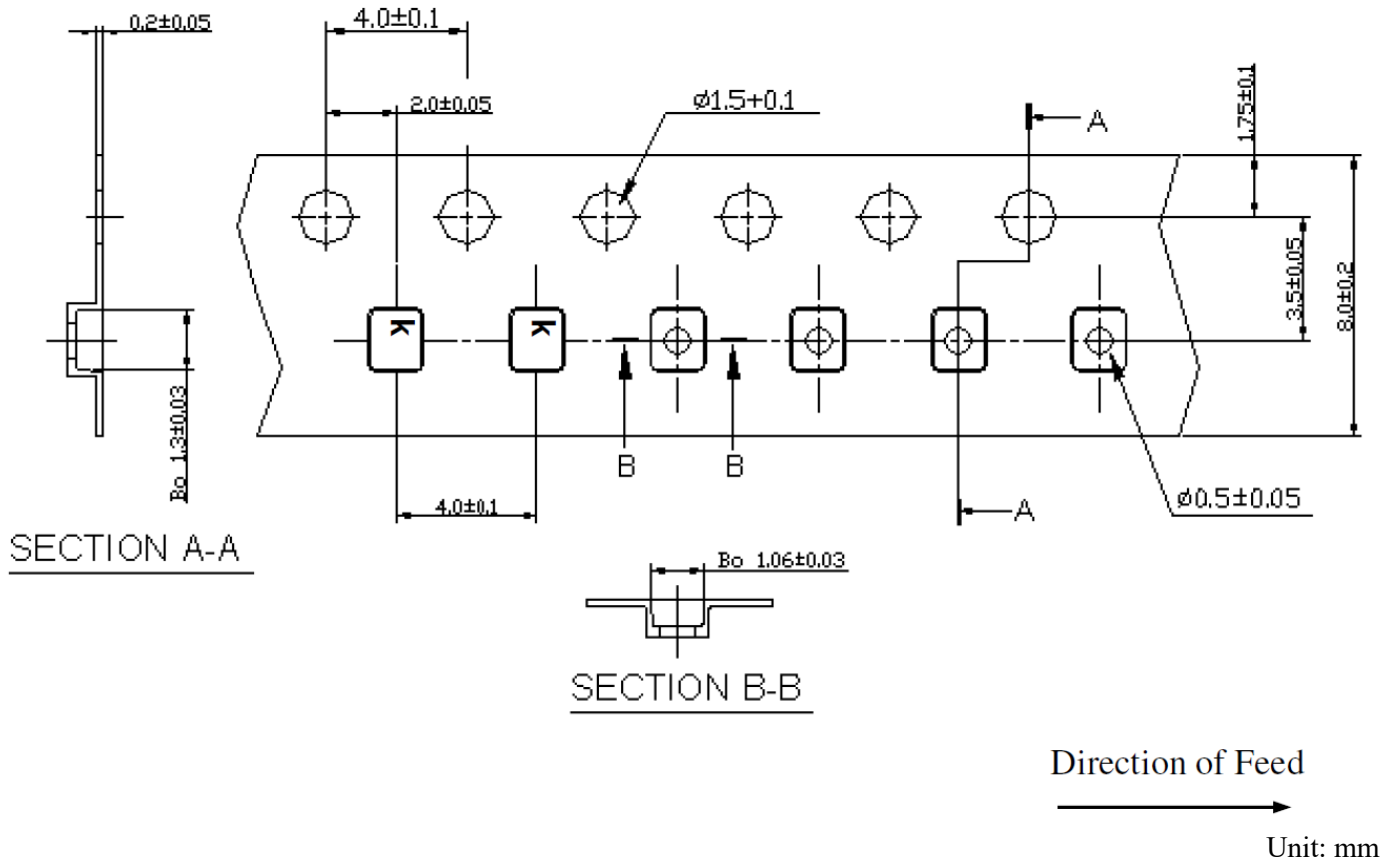


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Tape Dimension



Direction of Feed



Unit: mm

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