

# 1223 MHz SMD SAW Filter

ABSTS5A2-22NM024M

Request Samples



Check Inventory



1.1 x 0.9 x 0.5 mm  
RoHS/RoHS II Compliant  
MSL Level = 3

## Features

- Low Insertion Loss
- Usable bandwidth of 52MHz
- Compact Package Size

## Applications

- RF Filter for front end GPS L2 band applications
- Navigational and Positioning applications
- GPS Receivers.

## Electrical Specifications

Parameters		Specifications		
		Min	Typ	Max
Nominal Center Frequency (Fc) (MHz)			1223	
Insertion Loss (dB) (1197 ~ 1249 MHz)	At -40°C to +85°C		1.8	2.6
	At -40°C to +105°C		1.8	2.8
Group Delay ripple (nsec)	1197 ~ 1217 MHz		5.0	7
	1217 ~ 1237 MHz		4.5	7
	1242 ~ 1249 MHz		3.0	7
	1197 ~ 1249 MHz (each 2 MHz BW)		2	5
Attenuation (dB) (reference level from 0 dB)	880 ~ 920 MHz	35	38	
	1710 ~ 1850 MHz	40	42	
	1850 ~ 1920 MHz	40	42	
	1920 ~ 1980 MHz	38	41	
	2400 ~ 2500 MHz	30	34	
Terminating Source & Load Impedance ( $\Omega$ )			50	
Maximum Input Power (dBm)				10
DC Voltage (V)				0

## Mechanical Specifications

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

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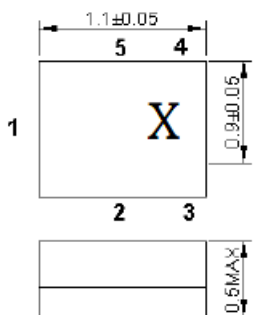


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**RoHS/RoHS II Compliant**  
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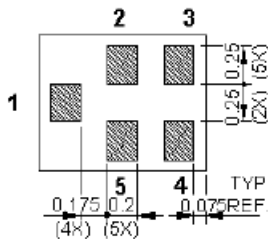
## Environmental Specifications

Parameters	Specifications
Operating Temperature Range	-40°C ~ +105°C
Storage Temperature Range	-40°C ~ +105°C
MSL level	3
ESD	100V (MM), 200V (HBM)

## Package Dimensions



All tolerances are  $\pm 0.05$  mm unless otherwise specified  
 Coplanarity : 0.1 mm max.  
 1 to 5 : Pin No.  
 Unit : mm



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

## Marking Description

X: Date Code (Year + Month)

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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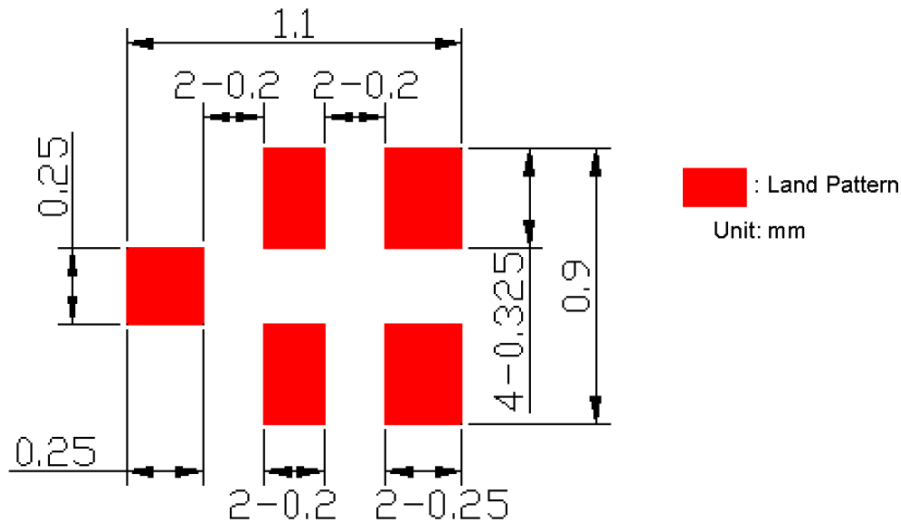


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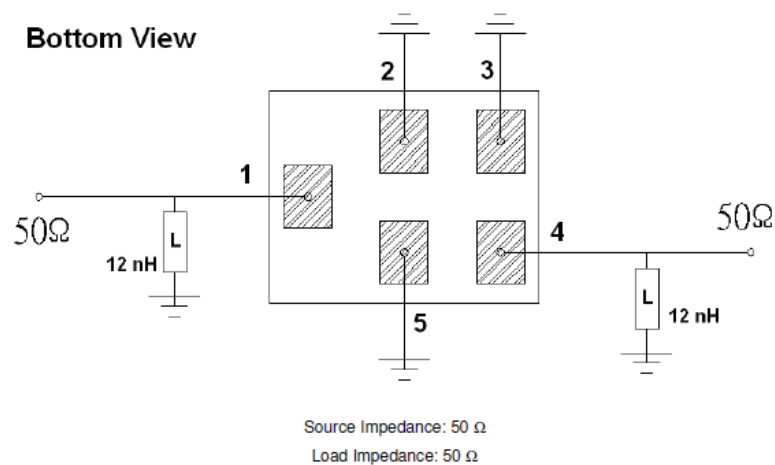


1.1 x 0.9 x 0.5 mm  
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## PCB Footprint



## Measurement Circuit



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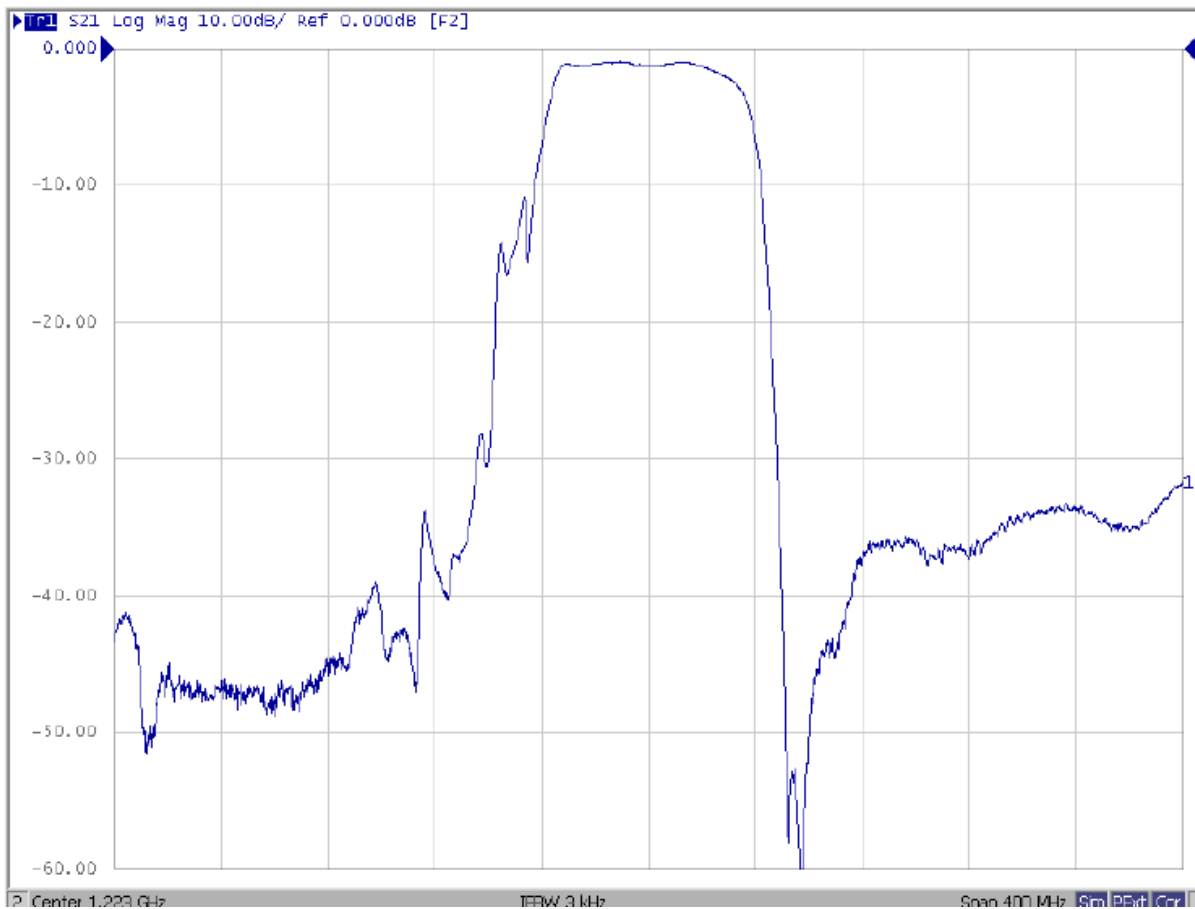
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## Transmission Characteristics

S21 Response (Span 400 MHz)



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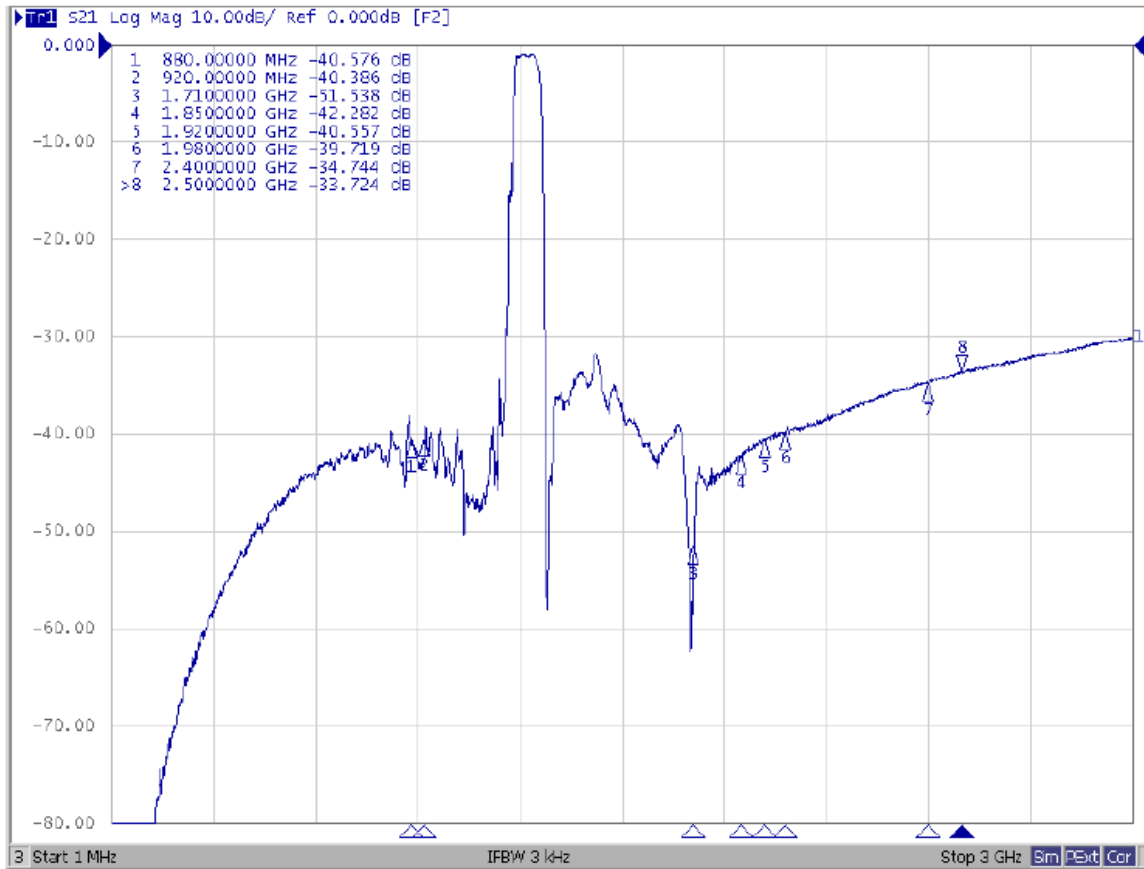


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## S21 Response (2500 MHz)



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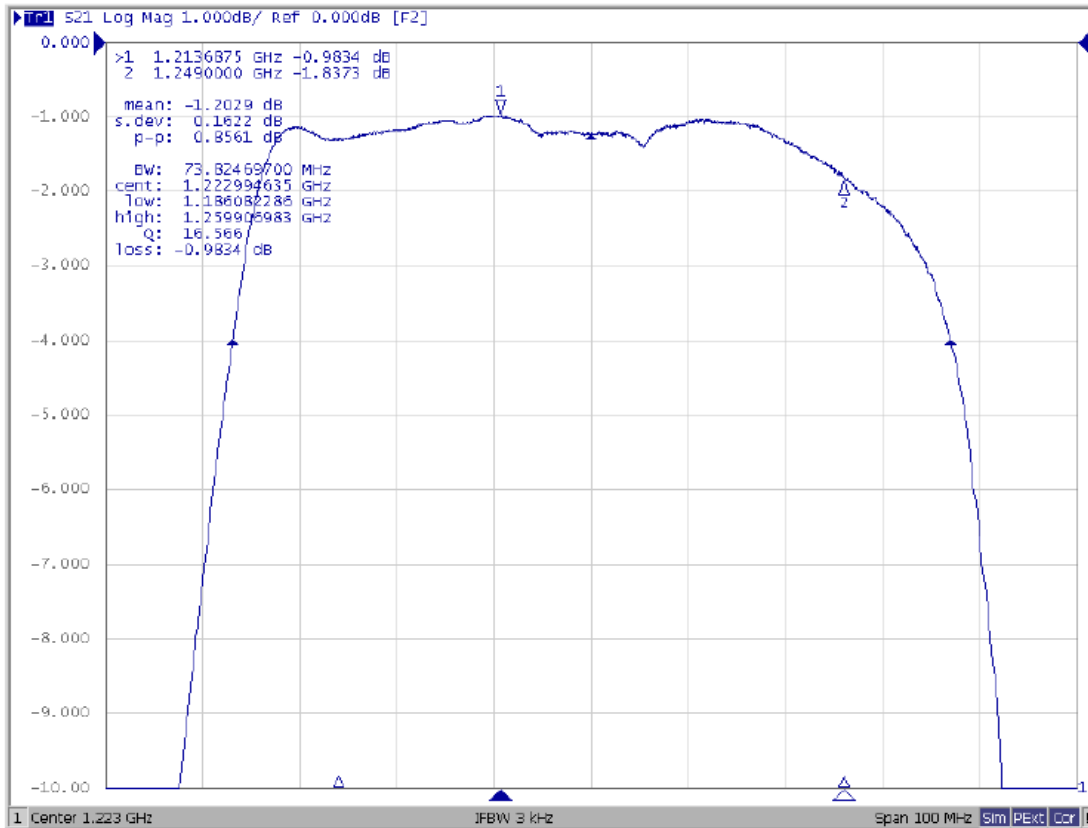


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Ripple (Span 100 MHz)



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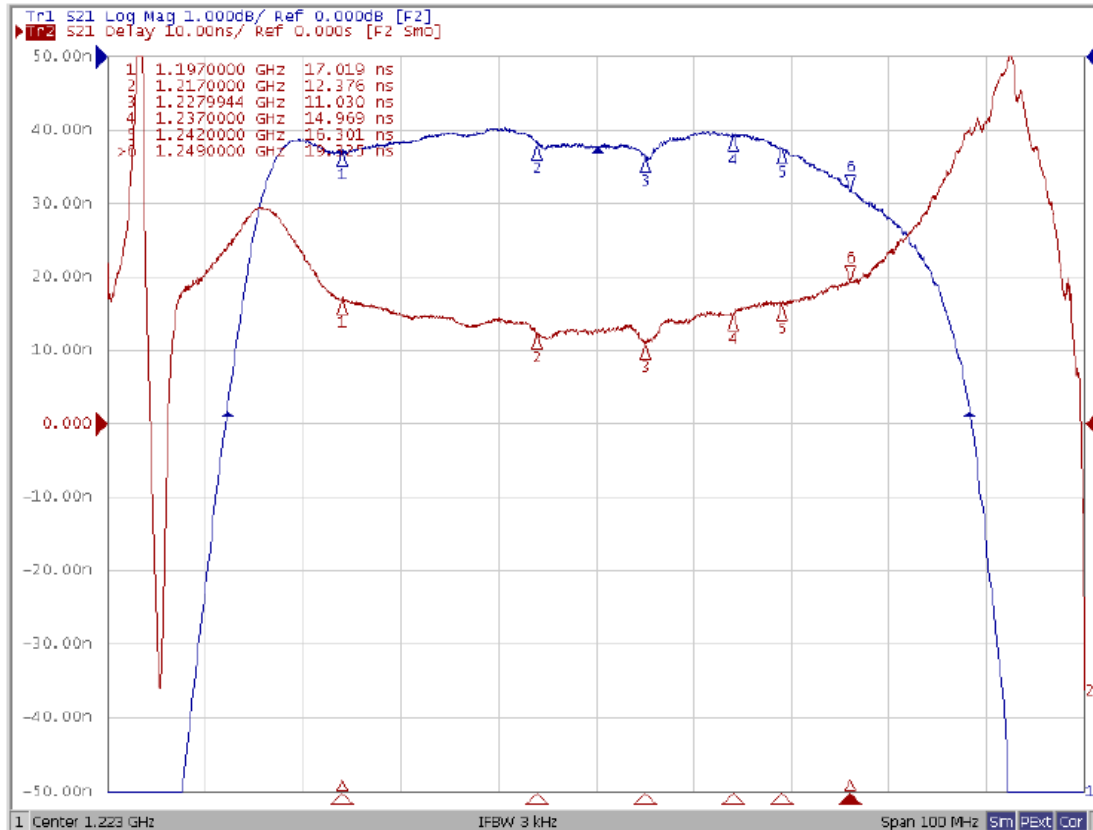


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## Group Delay



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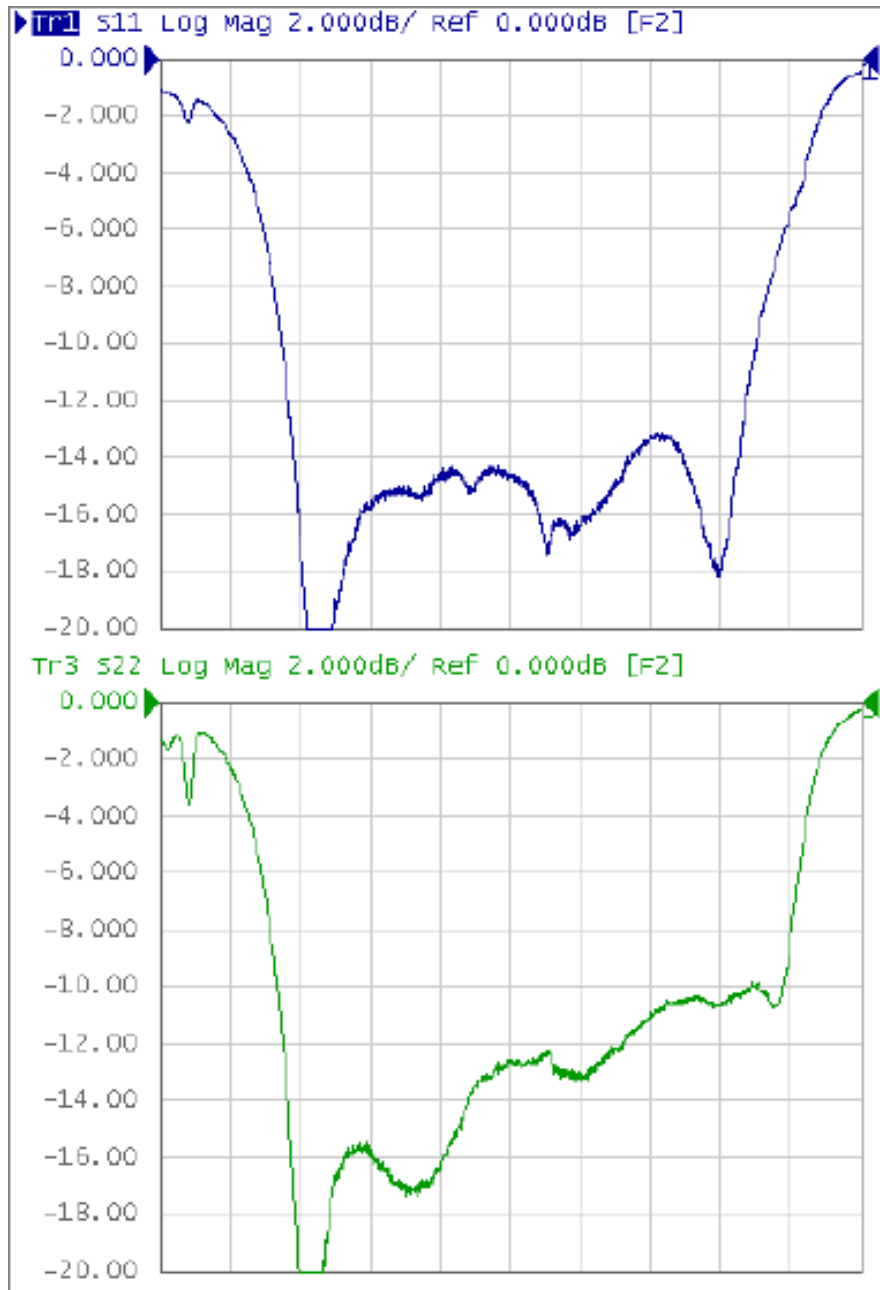
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## Reflection Characteristics

S11 & S22





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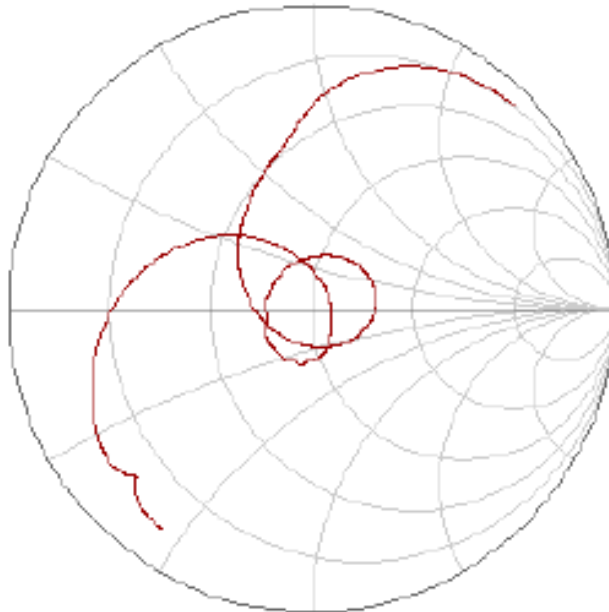
Check Inventory



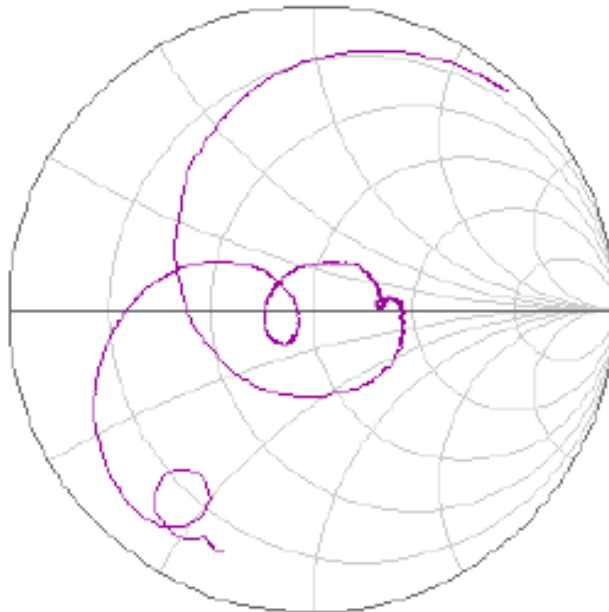
1.1 x 0.9 x 0.5 mm  
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S11 & S22 Smith Chart

tr2 s11 smith (Re/Im) scale 1.000U [F2 smc]



tr4 s22 smith (Re/Im) scale 1.000U [F2]



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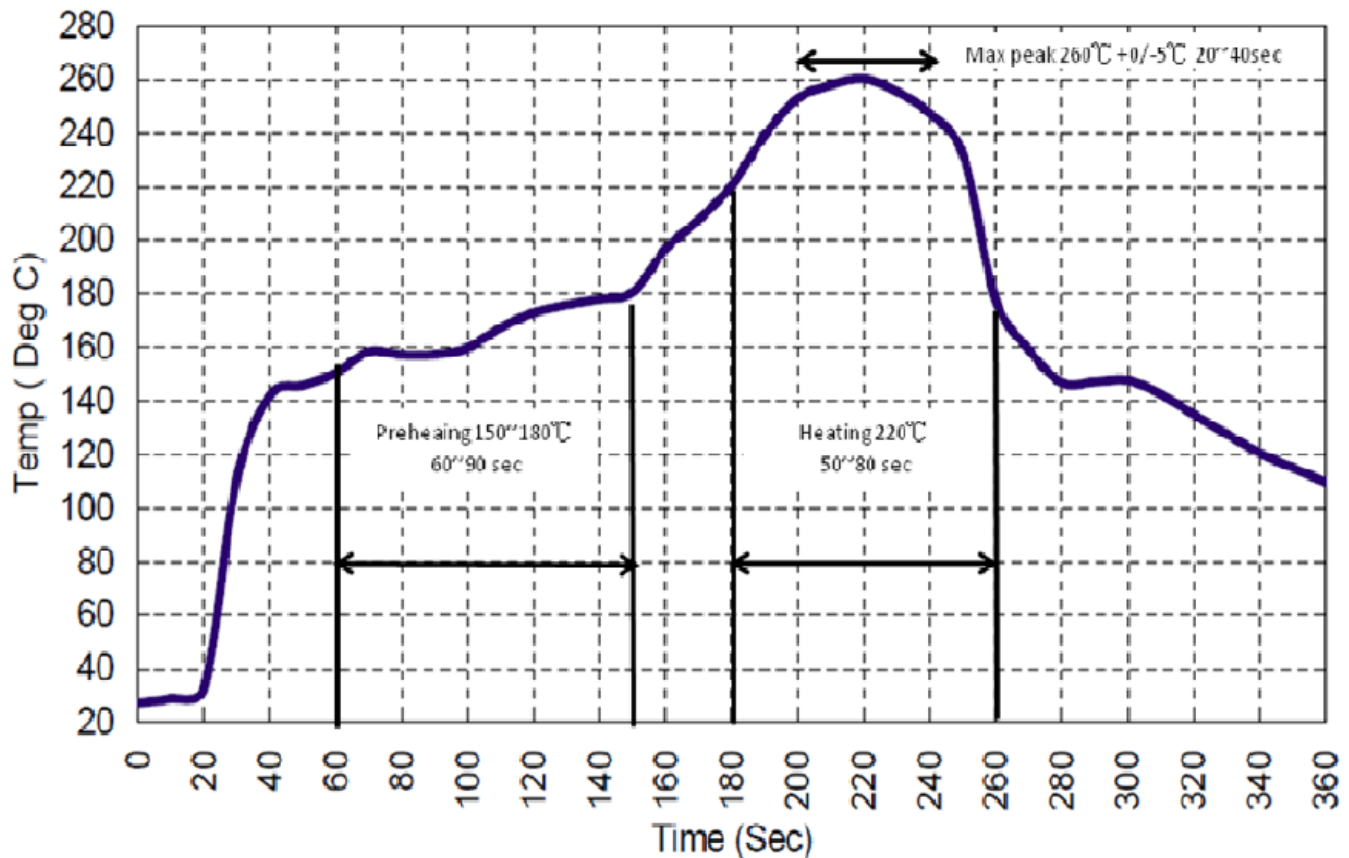
Check Inventory



1.1 x 0.9 x 0.5 mm  
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MSL Level = 3

## 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 minimum.
3. Heating shall be fixed at 220°C for 50~80seconds and at 260°C+0/-5°C peak (20~40sec)
4. Time: 2 times



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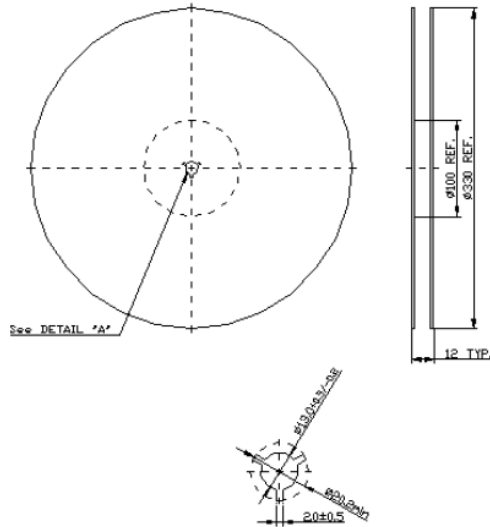
Check Inventory



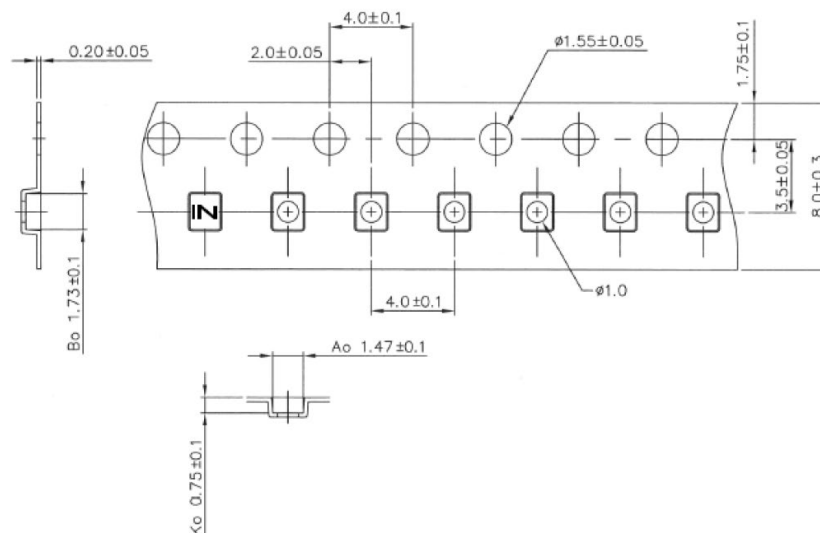
1.1 x 0.9 x 0.5 mm  
RoHS/RoHS II Compliant  
MSL Level = 3

## Packaging

1. Reel Dimension:  
Number of pieces/ reel: 5k



2. Tape Dimension



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