2.4GHz 1.1x0.9 SAW Filter: SBP1109R2400S201

Features

SMD, high reliability, ultra Impact…

Part number

SBP	1109	R	2400	S2	01
(1)	(2)	(3)	(4)	(5)	(6)

(1) Product code	SAW-BPF
(2) Size Code	1.1x0.9mm
(3) Packing	Tape and reel
(4) Frequency	2.4GHz
(5) Series	S2
(6) Type	01

Electrical Specification

Items	Frequency(MHz)	Specification			Unit
		Min.	Typ.*	Max.	
Insertion Loss	2401~2483 MHz	-	1.4	2.4	dB
Ripple	2401~2483 MHz	-	0.7	2.4	dB
VSWR	2401~2483 MHz	-	1.5	2.2	dB
Attenuation	600~859 MHz	25	30	-	dB
	859~960 MHz	25	29	-	dB
	960~1559 MHz	20	25	-	dB
	1559~1606 MHz	21	26	-	dB
	1710~1785MHz	21	26	-	dB
	1805~1880MHz	21	26	-	dB
	1930~1990MHz	21	26	-	dB
	2110~2200MHz	22	27	-	dB
	2300~2350MHz	35	40	-	dB
	2350~2370MHz	8	36	-	dB
	2530~2570MHz	20	37	-	dB
	2570~2690MHz	25	30	-	dB
	4800~5000MHz	27	33	-	dB
	7200~7500MHz	35	46	-	dB

The specification is defined on EVB.

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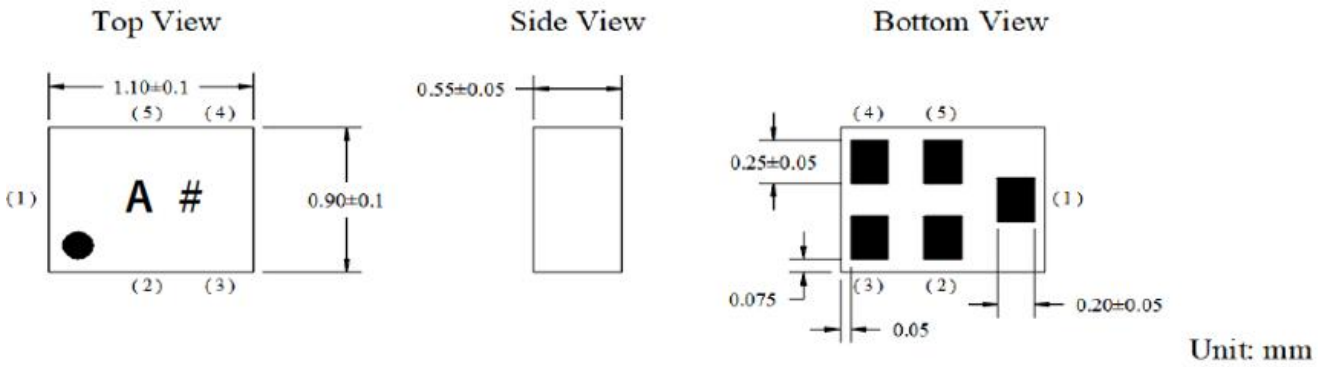
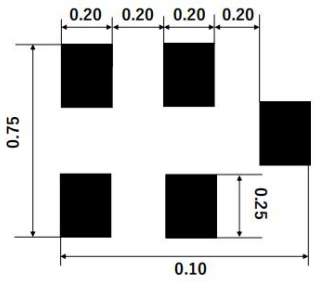
Dimension and Terminal Configuration



Land Pattern

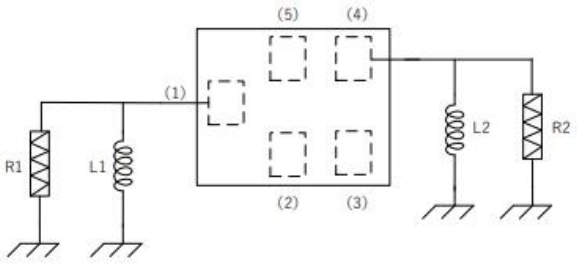


No.	Terminal Name
1	Input
2	Ground
3	Ground
4	Output
5	Ground

ELECTRICAL SPECIFICATION

Items	Conditions
Operation temperature rang	-30℃ ~ +85℃
Storage temperature rang	-40℃ ~ +85℃
ESD voltage	CDM : 500V HBM : 250V
DC Voltage	5V
Max Input Power	25dBm 5000h
Moisture Sensitivity Level	MSL 3

Test Circuit



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Frequency Response

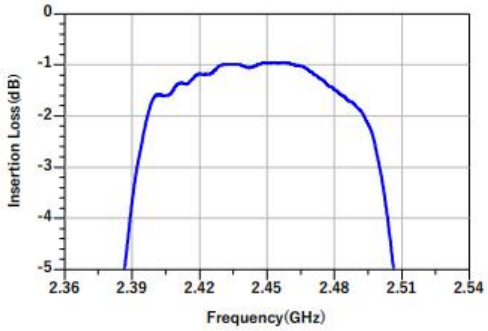


Figure 1: Passband 2.401~2.483 GHz

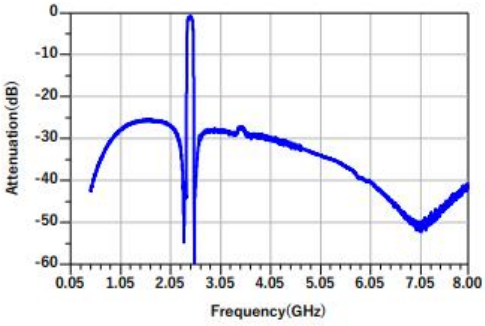


Figure 2: Wideband 0.5~8.0 GHz

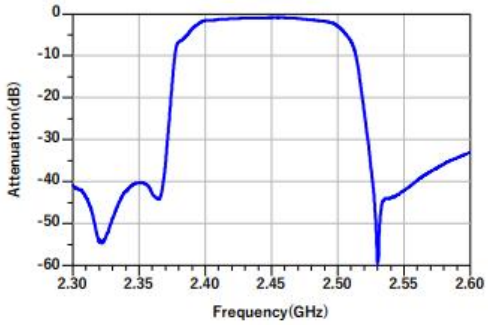


Figure 3: Narrowband 2.3~2.6 GHz

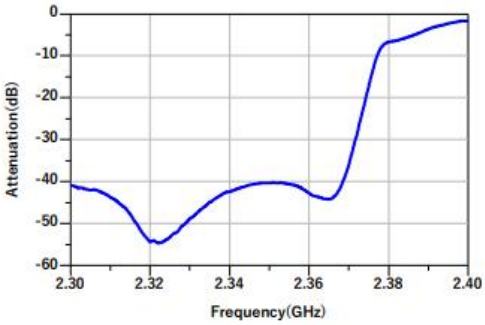


Figure 4: Attenuation 2.3~2.4 GHz

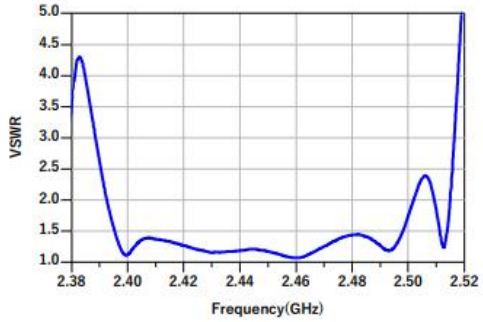


Figure 5: TX Port VSWR

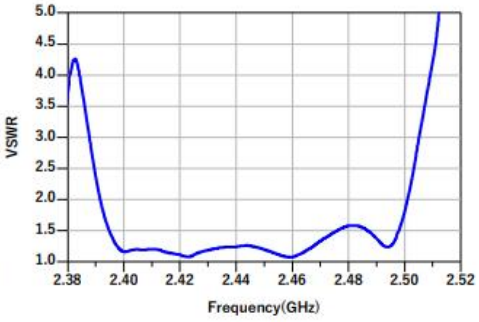


Figure 6: ANT Port VSWR

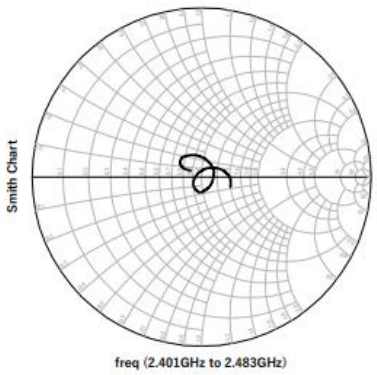


Figure 7: TX Port Impedance

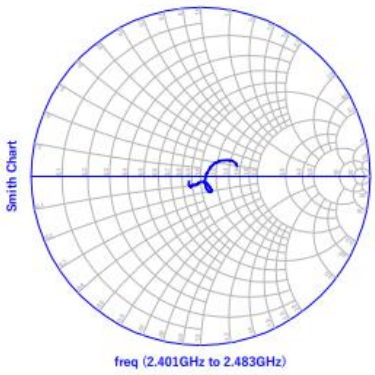


Figure 8: ANT Port Impedance

ENVIRONMENTAL CHARACTERISTICS

1. High temperature exposure

Subject the device to +85℃ for 16 hours. Then release the filter into the room conditions for 24 hours prior to the measurement. It shall fulfill the specifications in 5.

2. Low temperature exposure

Subject the device to -40℃ for 16 hours. Then release the device into the room conditions for 24 hours prior to the measurement. It shall fulfill the specifications in 5.

3 .Temperature cycling

Subject the device to a low temperature of -40℃ for 30 minutes. Following by a high temperature of +85℃ for 30 Minutes. Then release the device into the room conditions for 24 hours prior to the measurement. It shall meet the specifications in 5.

4 .Resistance to solder heat

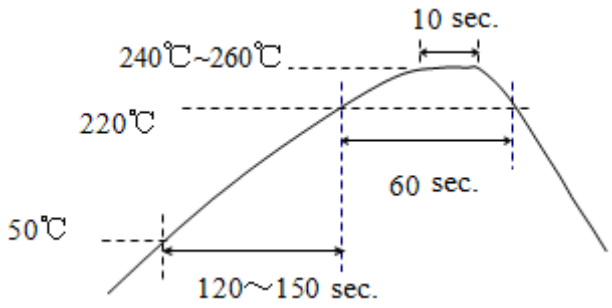
1、immerge the solder bath at 260℃ for 10 sec.

2、the iron at 370℃ for 3 sec

5. Solderability

Submerge the device terminals into the solder bath at 245℃ ±5℃ for 5s, More than 95% area of the soldering pad must be covered with new solder. It shall meet the specifications in 5.

6 .Reflow soldering



The specimen shall be passed through the reflow furnace with the condition shown in the above profile for 1 time.

The specimen shall be stored at standard atmospheric conditions for 1h, after which the measurement shall be made. Test board shall be 1.6 mm thick. Base material shall be glass fabric base epoxy resin.

7 .Mechanical shock

Drop the device randomly onto the concrete floor from the height of 1m 3 times. the device shall fulfill the specifications in 5.

8 .Vibration

Subject the device to the vibration for 1 hour each in x,y and z axes with the amplitude of 1.5 mm at 10 to 55 Hz. The device shall fulfill the specifications in 5.

REMARK

1. Static voltage

Static voltage between signal load & ground may cause deterioration &destruction of the component. Please avoid static voltage.

2. Ultrasonic cleaning

Ultrasonic vibration may cause deterioration & destruction of the component. Please avoid ultrasonic cleaning

3. Soldering

Only pad component may be solded. Please avoid soldering another part of component.

Packing

1. Dimensions

(1) Carrier Tape: Figure 1 (2)

Reel: Figure 2

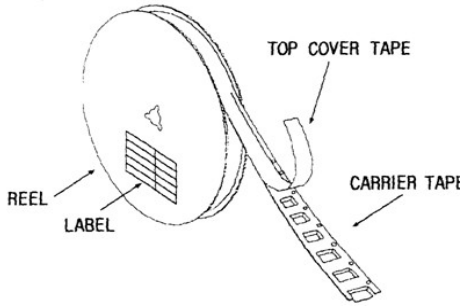
(3) The product shall be packed properly not to be damaged during transportation and storage.

2. Reeling Quantity

5000 pcs/reel φ 178mm

3. Taping Structure

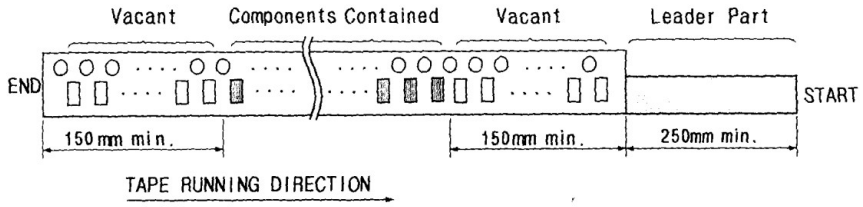
(1) The tape shall be wound around the reel in the direction shown below.



(2) Label

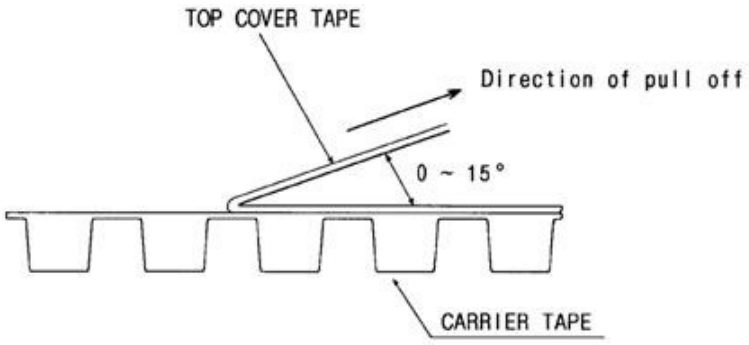
Device Name	
Marking	
User Product Name	
Quantity	
Lot No.	

(3) Leader part and vacant position specifications.



TAPE SPECIFICATIONS

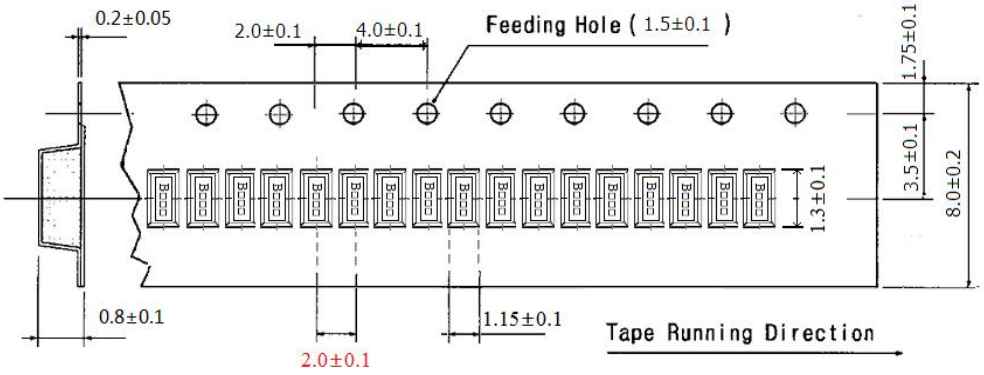
1. Tensile Strength of Carrier Tape: 4.4N/mm width
2. Top Cover Tape Adhesion (See the below figure) (1)
   pull off angle: 0~15º
   (2) speed: 300mm/min. (3)
   force: 20~70g



Taping Specifications

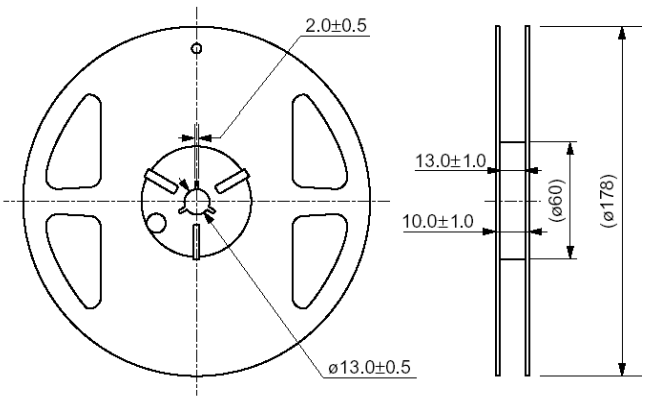
Reel and Taping Specification

Reel Specification



Prior to the size of 4.0±0.1, after encryption,
modified to 2.0±0.1.

Tapping Specification



ø178 Reel Dimension (in mm)

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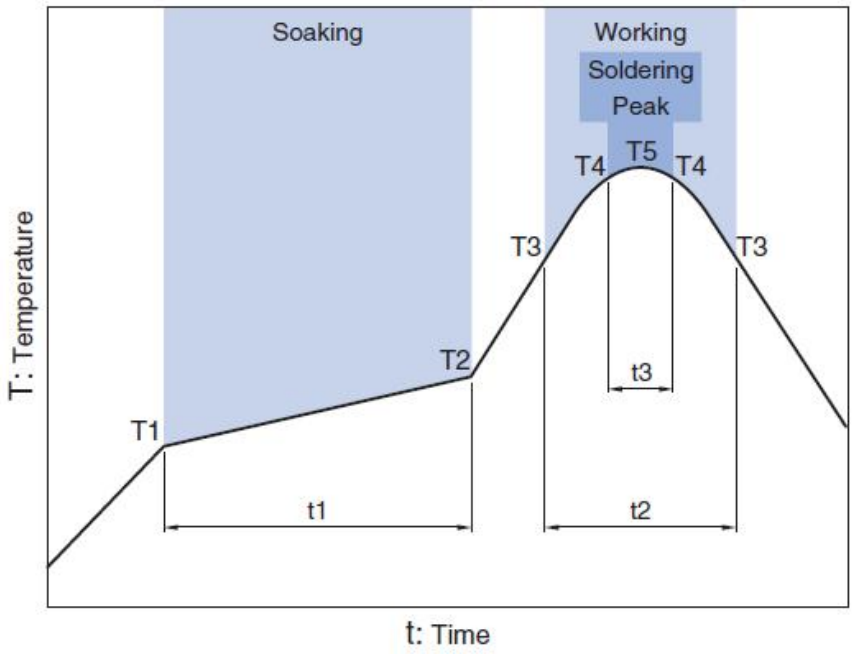
Recommended Reflow Profile

Pb free solder



Soaking			Working		Soldering		Peak
Temp.		Time	Temp.	Time	Temp.	Time	Temp.
T1	T2	t1	T3	t2	T4	t3	T5
150°C	180°C	60 to 120sec	230°C	more than 30sec	247 to 253°C	within 10sec	260°C Max.

Revision History

Version	Date	Description
Ver.01	Dec.2024	New issue.