Acoustic Chip Technology
Shengxin

DATASHEET

of BAW Devices

BAW Duplexer

Part Number : SXDB003HABSC25

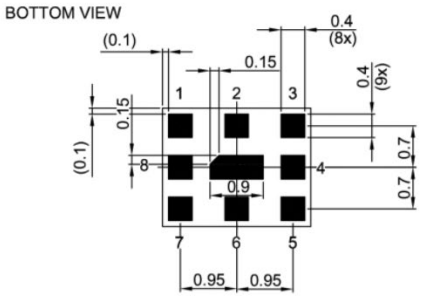
Band 3, Duplexer

- Package Dimensions
- Testing Environment
- Electrical Characteristics
- Frequency Characteristics
- Remark and Packing
- Description

Revision Record

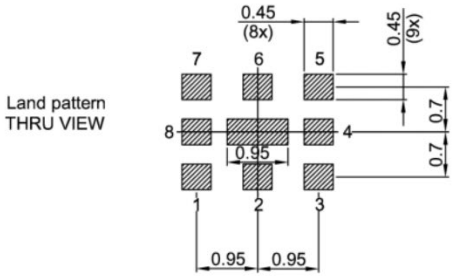
Revision Number	Date	Description
SXDB003HABSC25_Rev0.1	2023-04-13	Preliminary Version
SXDB003HABSC25_Rev0.2	2023-06-14	Rev0.2

Dimension & Features



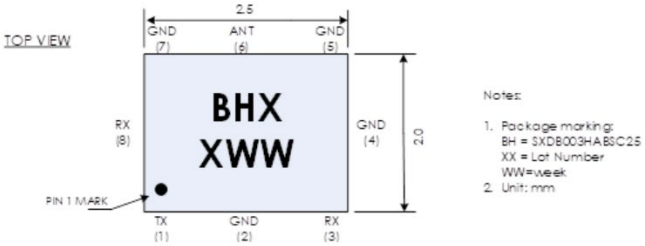
- Package size 2.5mm*2.0mm*0.6mm
- Rx = Uplink = 1710-1785 MHz
- Tx = Downlink = 1805-1880 MHz
- MSL3

Pin Configuration



- 1 Tx
- 3 RX
- 6 ANT
- 2,4,5,7,8,9 Ground

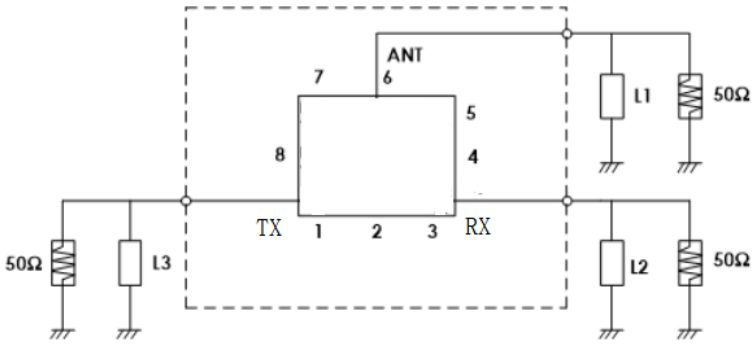
Marking



- BH： SXDB003HABSC25
- XX： Lot Number
- WW： Week

  (Please refer to the last page
  for the information of Date Code.)

Measurement Circuit



Parameter Name	Value
L1	3.6nH
L2	15nH
L3	8.2nH

Maximum Ratings

Characteristics		Ratings	Unit
Operable Temperature Range	T	-30 to +85	℃
Storage Temperature Range	T_{stg}	-40 to +85	℃
RF Input Power(Pin1,Pin3)	-	31.5	dBm

Characteristics

Tx to Ant		Specifications			
Item	Frequency Range [MHz]	Characteristics			
		min.	typ.[2]	max.	Unit
Insertion Loss	1805 - 1880	-	1.5	3.0	dB
	1840 - 1870	-	1.3	1.6	dB
Ripple Deviation	1805 - 1880	-	1.1	2.0	dB
	1840 - 1870	-	0.3	0.6	dB
Absolute Attenuation	500 - 1710	35	49	-	dB
	1710 - 1785	50	59	-	dB
	1900 - 1910	7	26	-	dB
	1910 - 1950	50	60	-	dB
	1950 - 1980	43	48	-	dB
	1980 - 2400	40	45	-	dB
	2400 - 2500	45	50	-	dB
	2500 - 3680	45	53	-	dB
	3680 - 3740	45	48	-	dB
	3740 - 5150	30	45	-	dB
	5150 - 5725	25	33	-	dB
R.L. of RX Port	1805 - 1880	10	15	-	dB
R.L. of ANT Port In RX band	1805 - 1880	10	15	-	dB

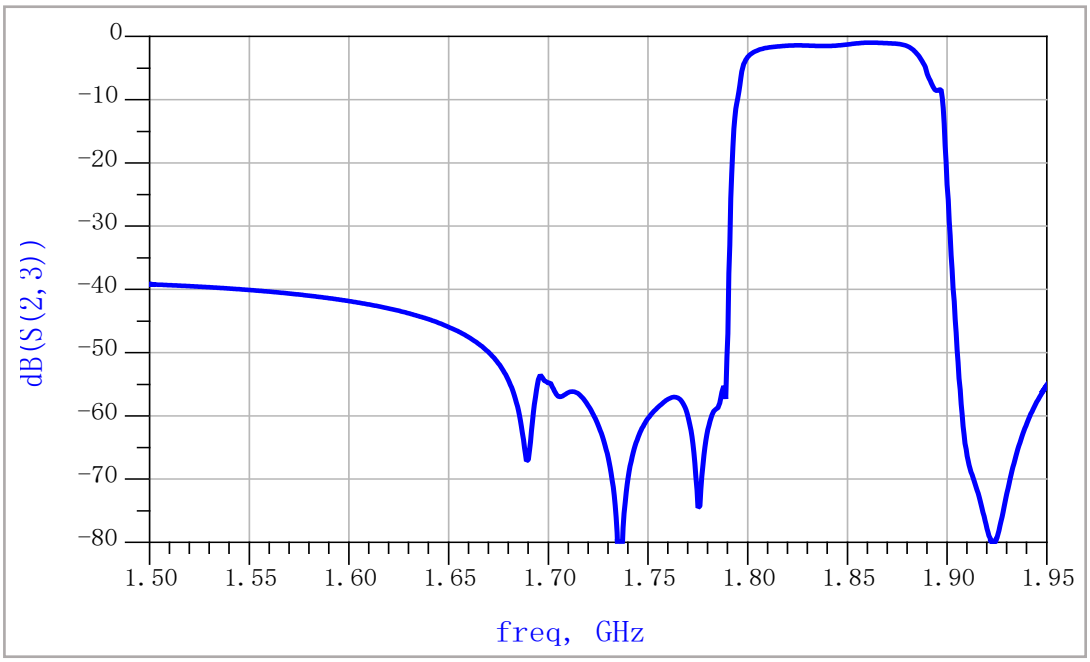
Ant to Rx		Specifications			
Item	Frequency Range [MHz]	Characteristics			
		min.	typ.[2]	max.	Unit
Insertion Loss	1710 - 1780	-	1.4	2.3	dB
	1780 - 1785	-	1.8	3.0	dB
	1745 - 1775	-	1.2	1.5	dB
Ripple Deviation	1710 - 1785	-	1.0	2.0	dB
	1745 - 1775	-	0.5	1.0	dB
Absolute Attenuation	500 – 1500	36	45	-	dB
	1500 – 1660	40	48	-	dB
	1660 – 1690	25	40	-	dB
	1805 – 1880	43	58	-	dB
	1880 - 2400	43	50	-	dB
	2400 - 2500	40	45	-	dB
	2500 - 3490	38	42	-	dB
	3490 - 4000	40	43	-	dB
R.L. of TX Port	1710 - 1785	10	18	-	dB
R.L. of Ant Port In TX band	1710 - 1785	10	18	-	dB

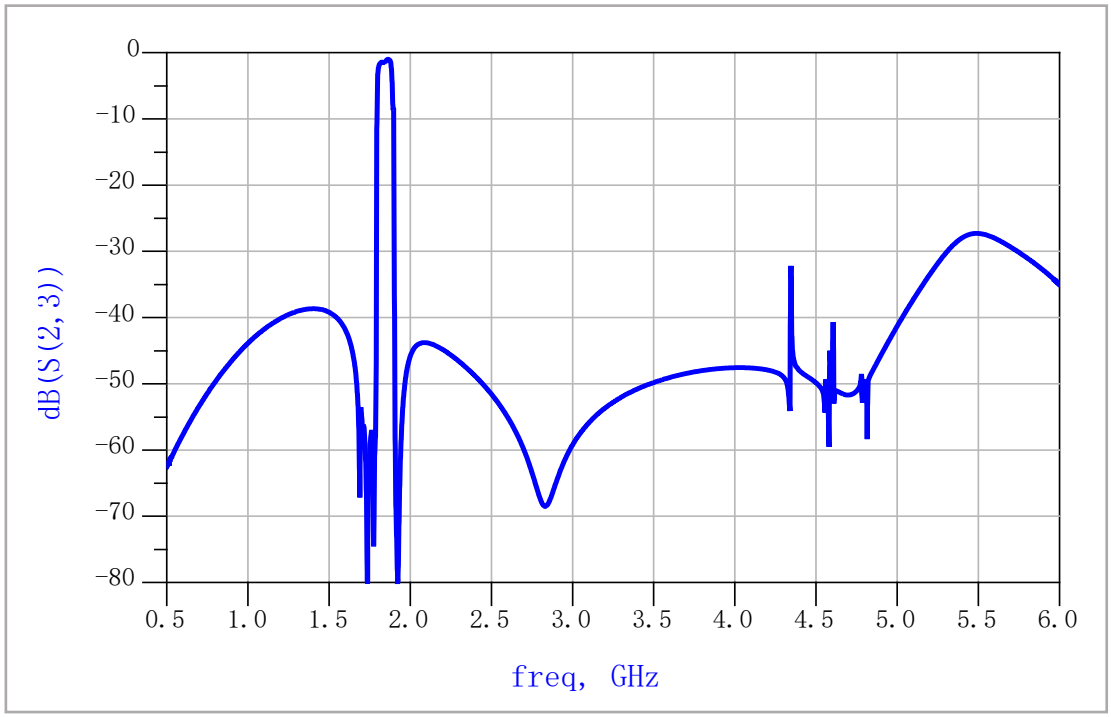
Tx to Rx		Specifications			
Item	Frequency Range [MHz]	Characteristics			
		min.	typ.[2]	max.	Unit
RX Band isolation	1710 - 1785	53	59	-	dB
TX Band isolation	1805 - 1880	53	61	-	dB

1. **Attention**: under the condition with matching network
2. Typical value at 25±2deg.C

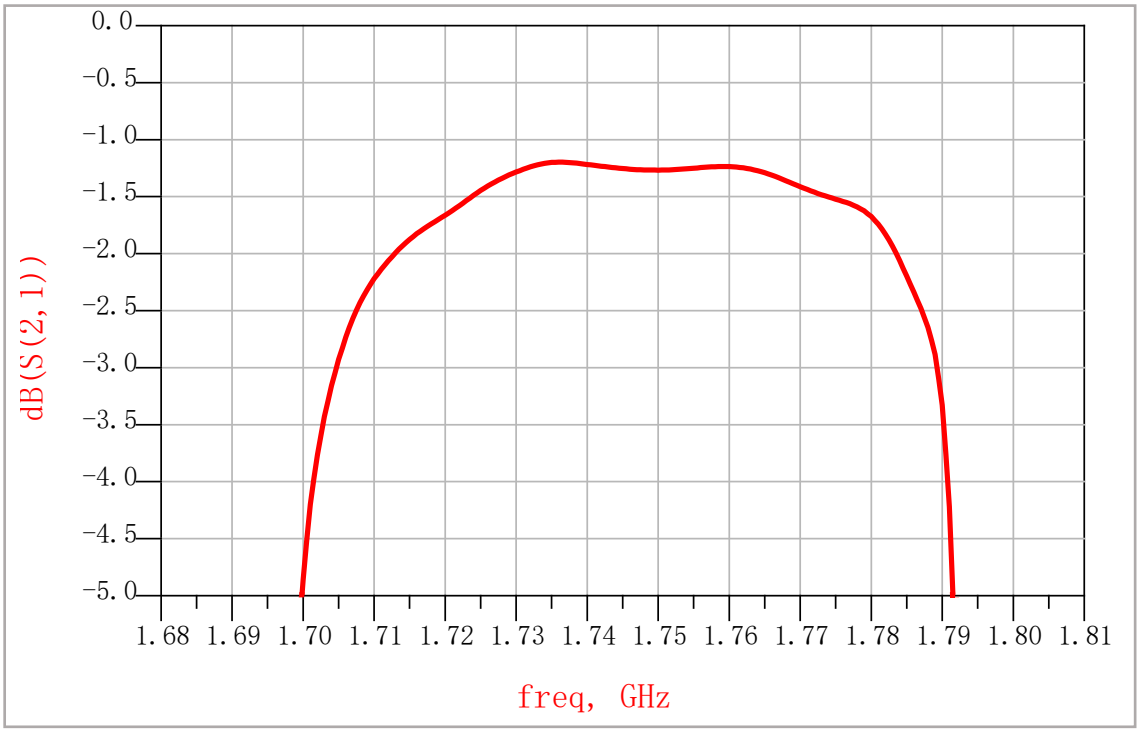
Frequency Characteristics

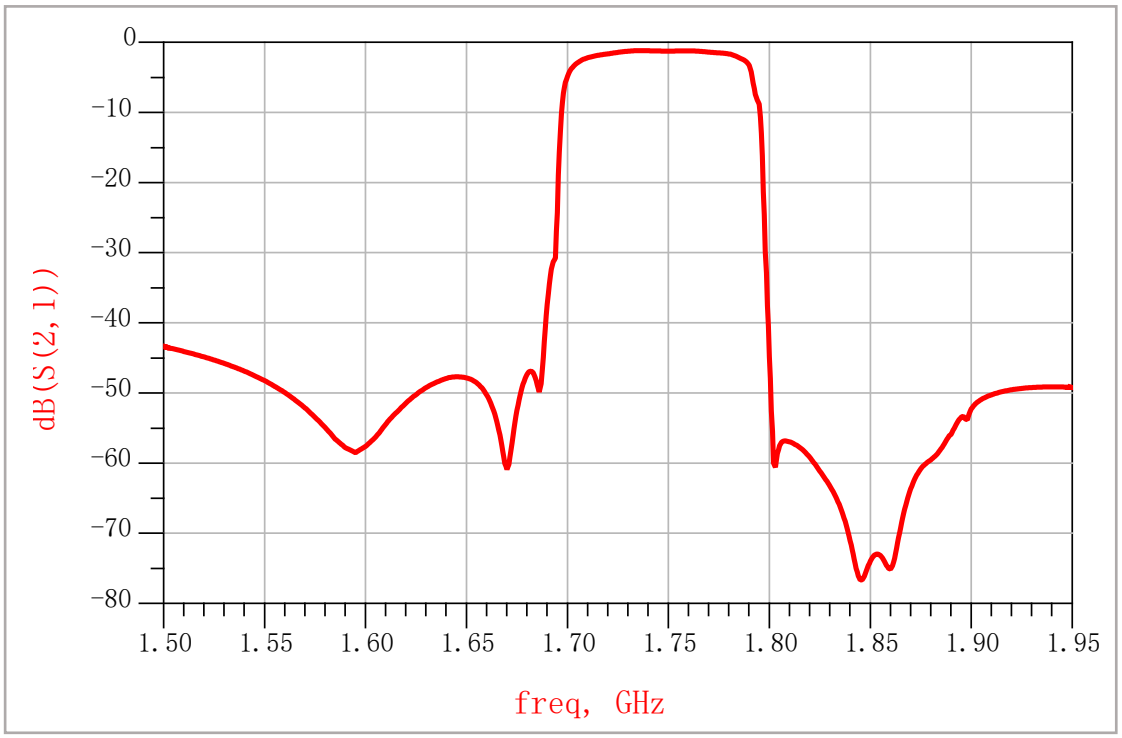
Tx



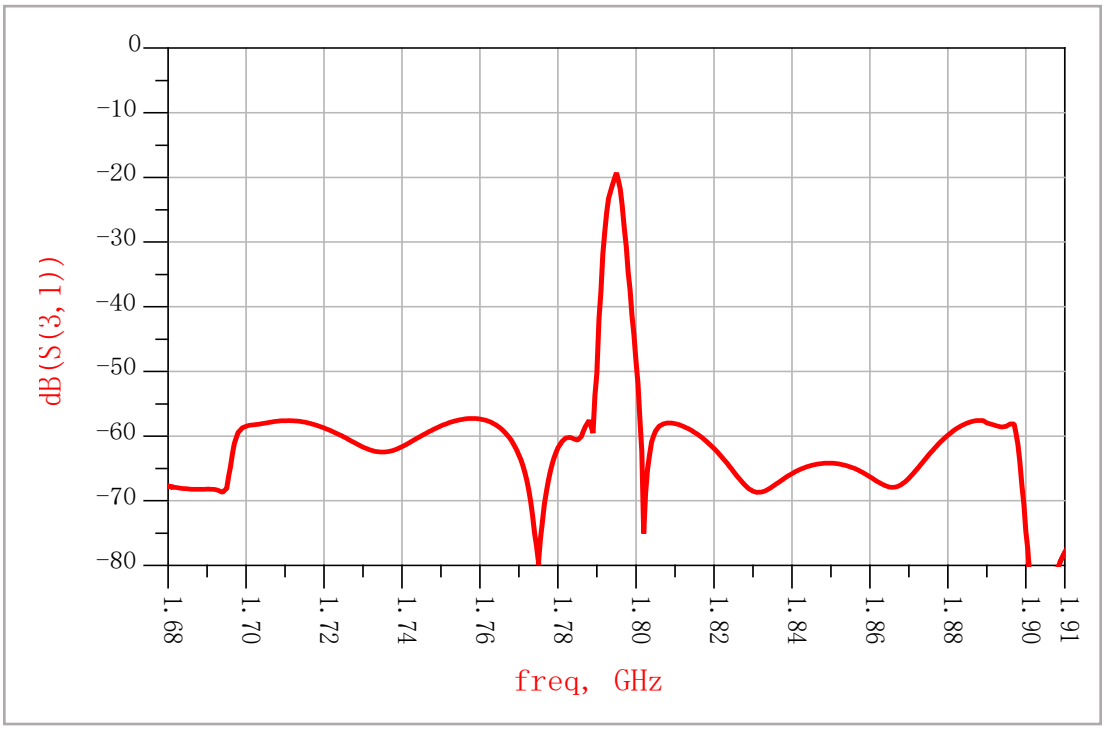


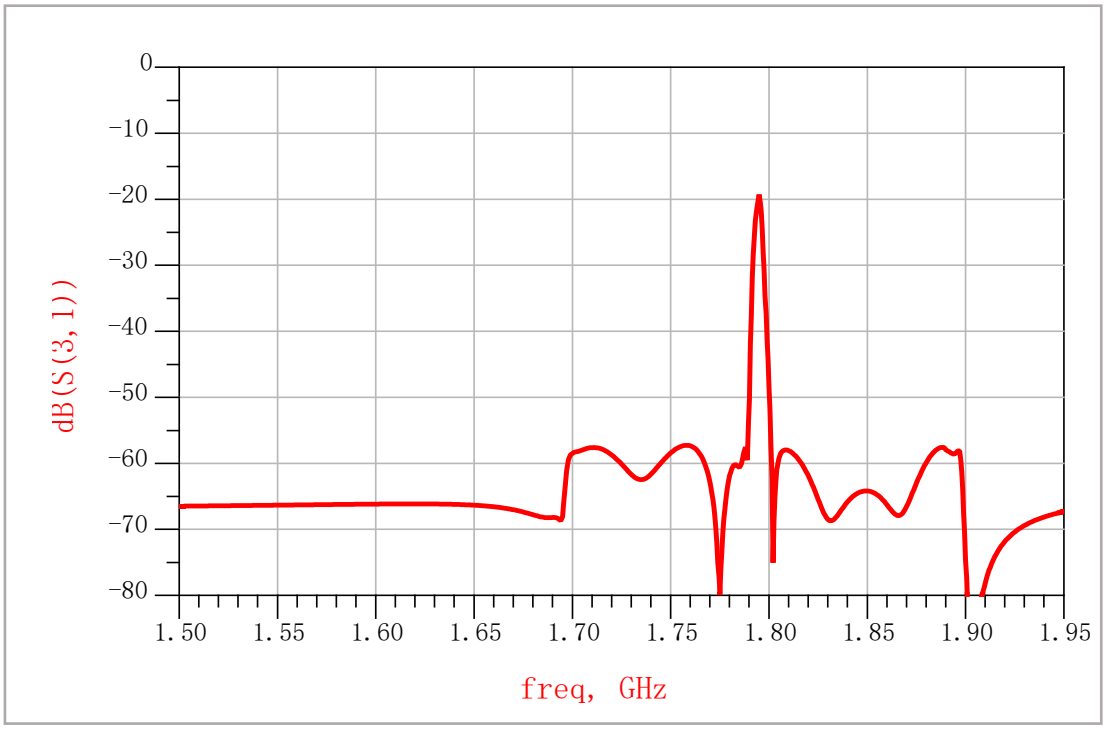
RX

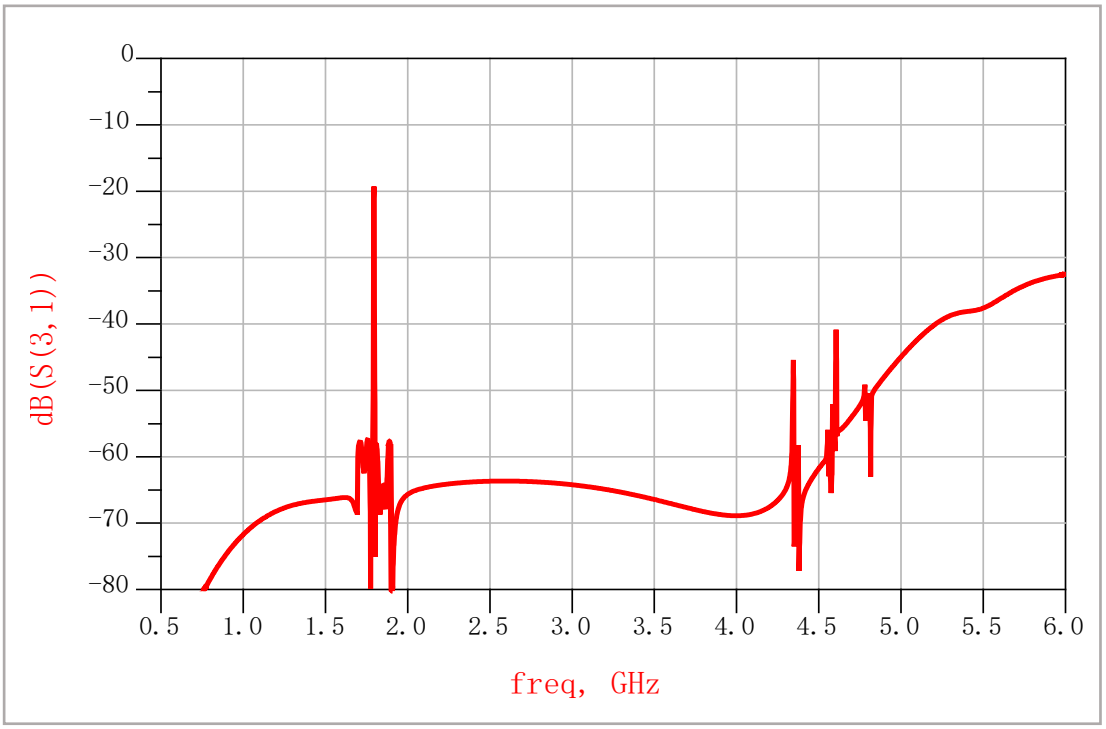




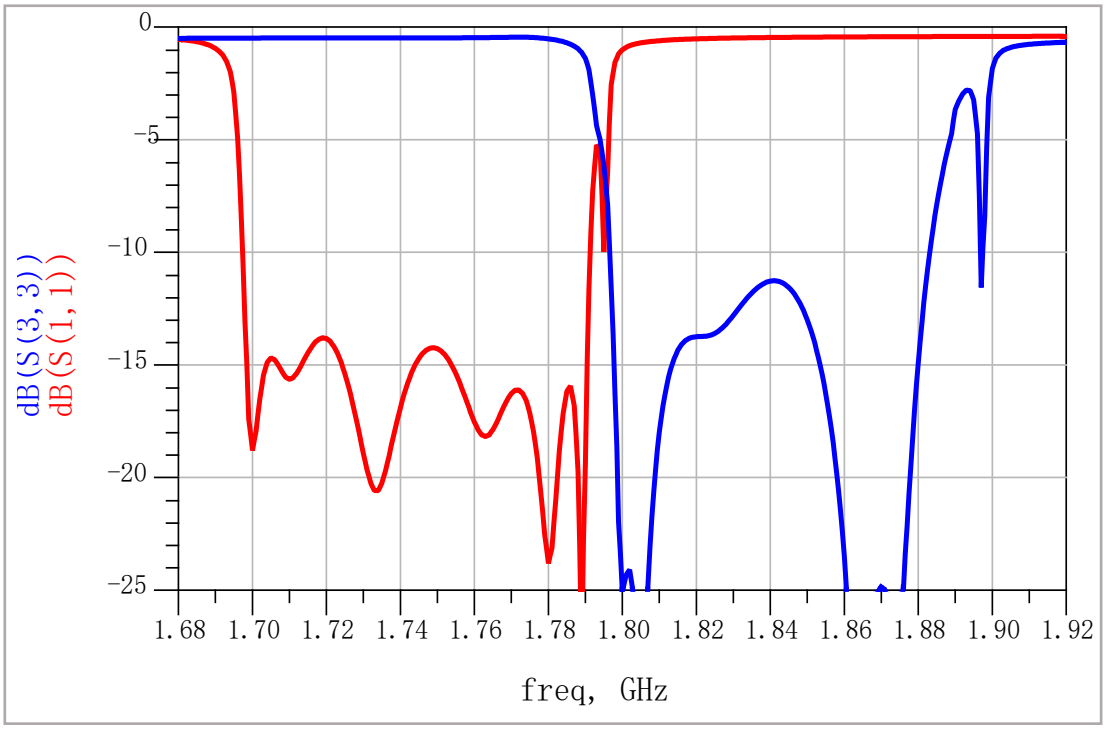
ISO

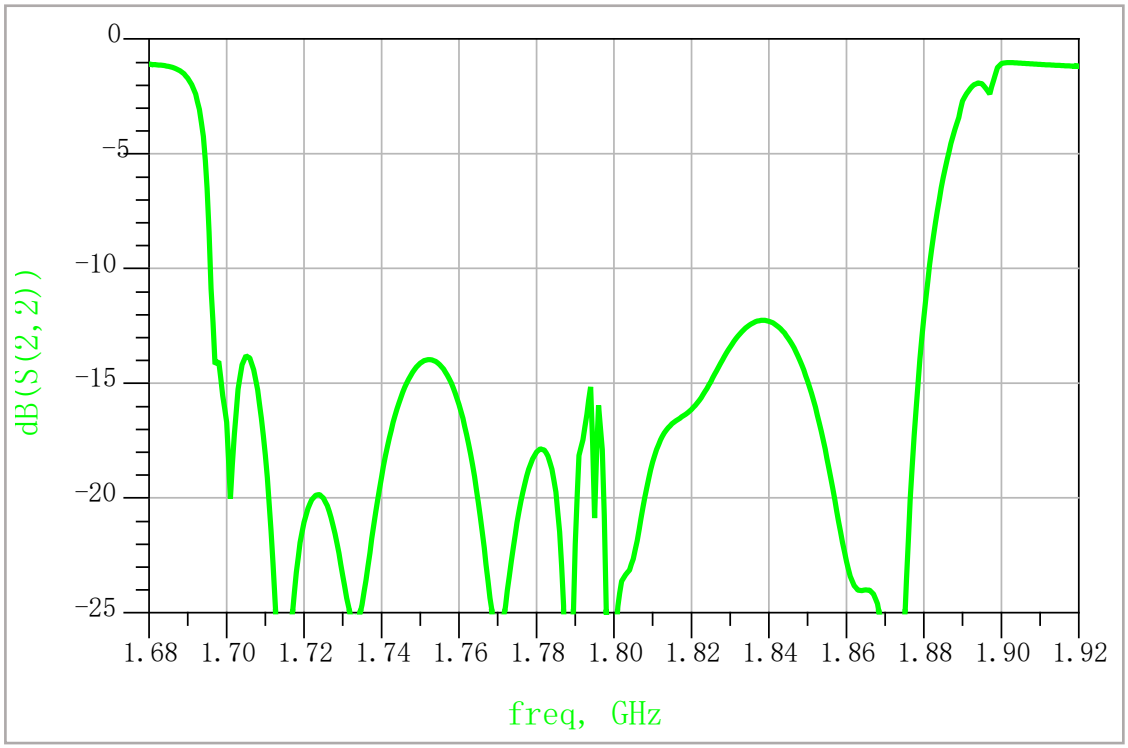






RL





Reliability Characteristics

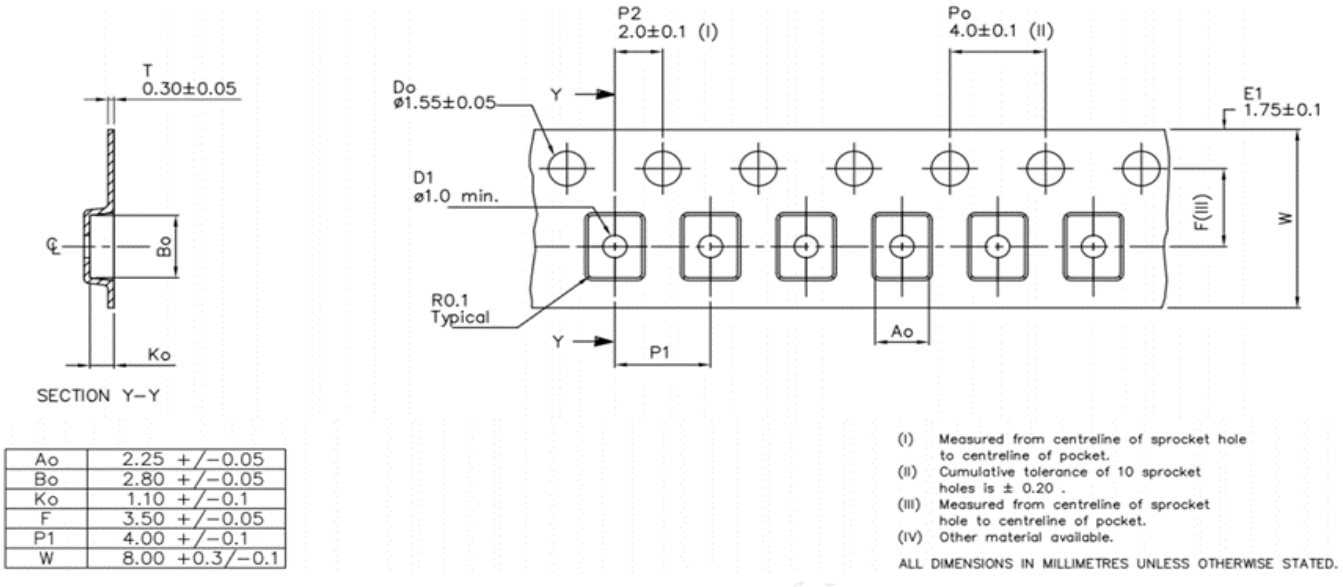
No.	Item	Condition to be satisfied
1	High Temp. Storage	①Test temperature: +85℃±3℃ ②Duration time： 500 hours ③Restore time: 2 hours at the room temperature(25℃)
2	Low Temp. Storage	①Test temperature: -40℃±3℃ ②Duration Time: 500 hours ③Restore time: 2 hours at the room temperature(25℃)
3	High Temp. High Humidity Storage	①Test temperature: +85℃±3℃ ②Test Humidity： 85%±3% ③Duration Hours： 240 hours ④Restore time: 2 hours at the room temperature(25℃)
4	Temperature Cycling	①Test Temperature: -40^{0}_{-10}℃~$+85^{+10}_{0}$℃ ②Time for each step: ≥30min ③Conversion time: ≤1min ④Cycle times: 100 times ⑤Restore time: 24 hours at the room temperature(25℃)
5	Soldering heat resistance	①Reflow with 260±5℃, 10±1s (Solder Pot) ②Restore time: 2 hours at the room temperature(25℃)
6	Solderability test	Soldering method and temperature: lead-free reflow soldering, $+255^{+5}_{0}$℃

Remarks

1. Please be certain not to apply voltage above the rated voltage of SAW components.
2. Please be sure that the component operate within the specified operating temperature range.
3. Abrupt temperature change shall be avoided because deterioration of the component characteristics can occur under that situation.
4. Please be careful of soldering temperature when soldering.
5. Please do not place soldering iron on the body of components.
6. Please be careful not to subject the terminals or leads of components to excessive force.

Packing Information

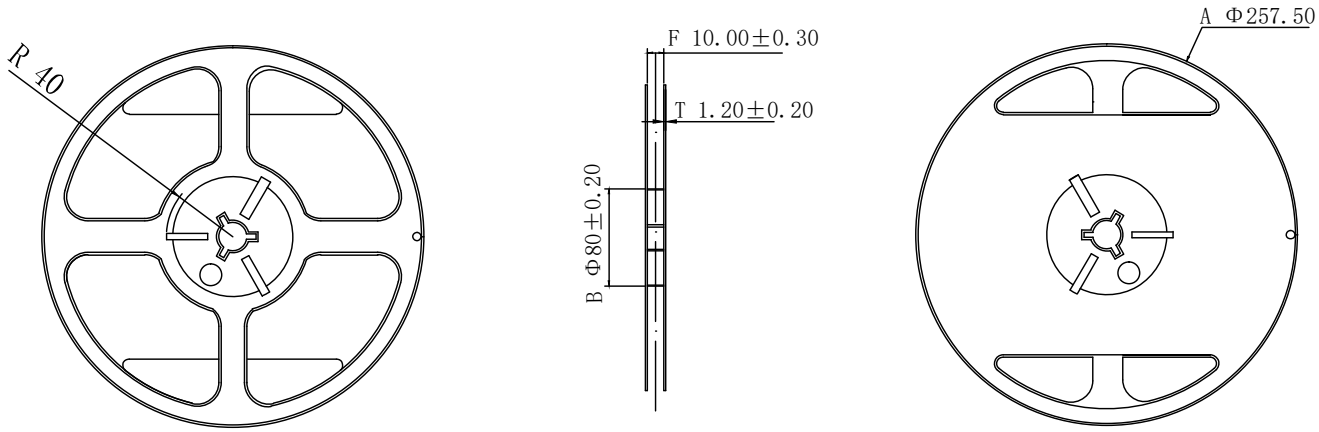
Tape (Unit: mm)



Ao	2.25 +/−0.05
Bo	2.80 +/−0.05
Ko	1.10 +/−0.1
F	3.50 +/−0.05
P1	4.00 +/−0.1
W	8.00 +0.3/−0.1

Reel (Unit：mm)

3000pcs/Reel(Standard Size)



Description of Date Code

A. Month Code:

2022 2026 2030	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	A	B	C	D	E	F	G	H	J	K	L	M
2023 2027 2031	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	N	P	Q	R	S	T	U	V	W	X	Y	Z
2024 2028 2032	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	a	b	ϵ	d	e	f	g	h	j	k	l	m̨
2025 2029 2033	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	n	O	ṗ	q	r	s̩	t	ū	v̩	w	ẍ	y

B. Date Code:

1	2	3	4	5	6	7	8	9	10	
A	B	C	D	E	F	G	H	J	K	
11	12	13	14	15	16	17	18	19	20	
L	M	N	P	Q	R	S	T	U	V	
21	22	23	24	25	26	27	28	29	30	31
W	X	Y	Z	a	b	ϵ	d	e	f	g

Recommended Soldering Profile