Acoustic Chip Technology
Shengxin

DATASHEET

of SAW Devices

SAW Duplexer

Part Number : SXDB008LGNSC18

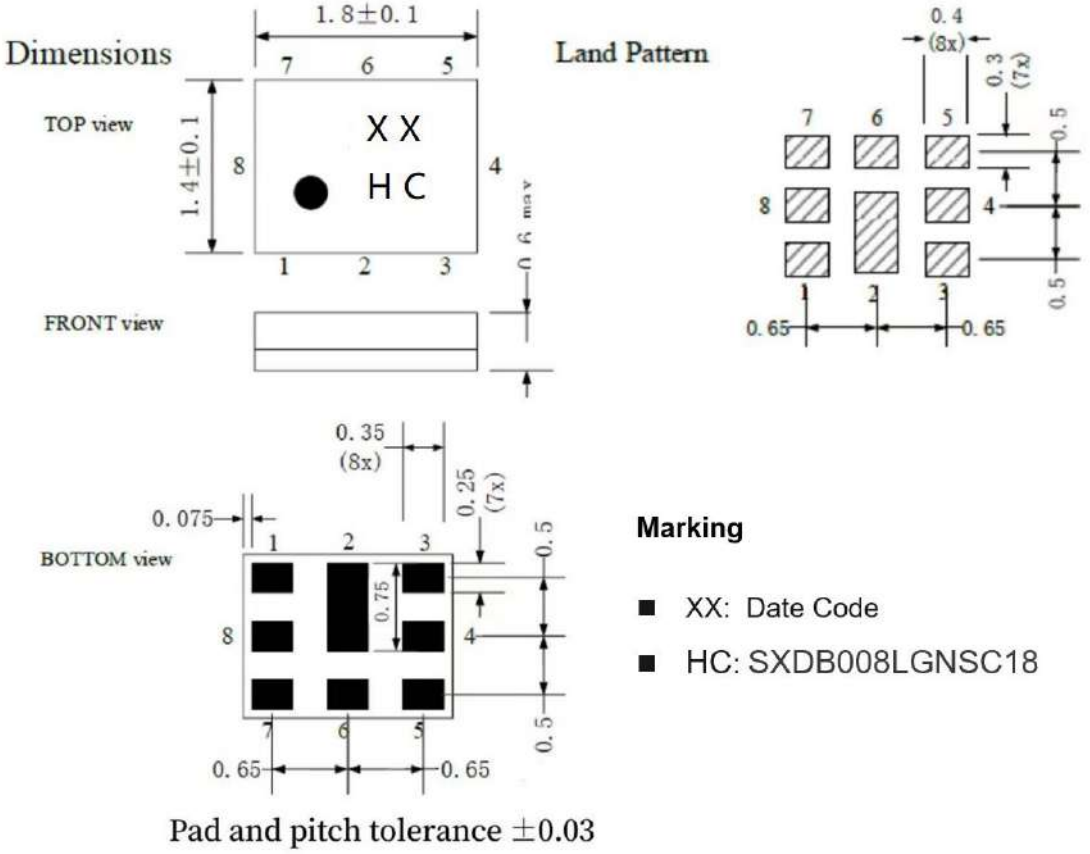
Band 8, Duplexer

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

Revision Record

Revision Number	Date	Description
SXDB008LGNSC18_Rev0.0	2023-03-25	Preliminary Version
SXDB008LGNSC18_Rev0.1	2023-08-12	Rev0.1

Package



Marking

- XX: Date Code
- HC: SXDB008LGNSC18

Pin Configuration

- 6 Ant
- 3 Tx
- 1 Rx
- 2,4,5,7,8 Ground

Figure 2: Drawing of package with package height A = 0.6 mm (max.).

Measurement Circuit

■ L_{p1}=8.1nH L_{p2}=45nH

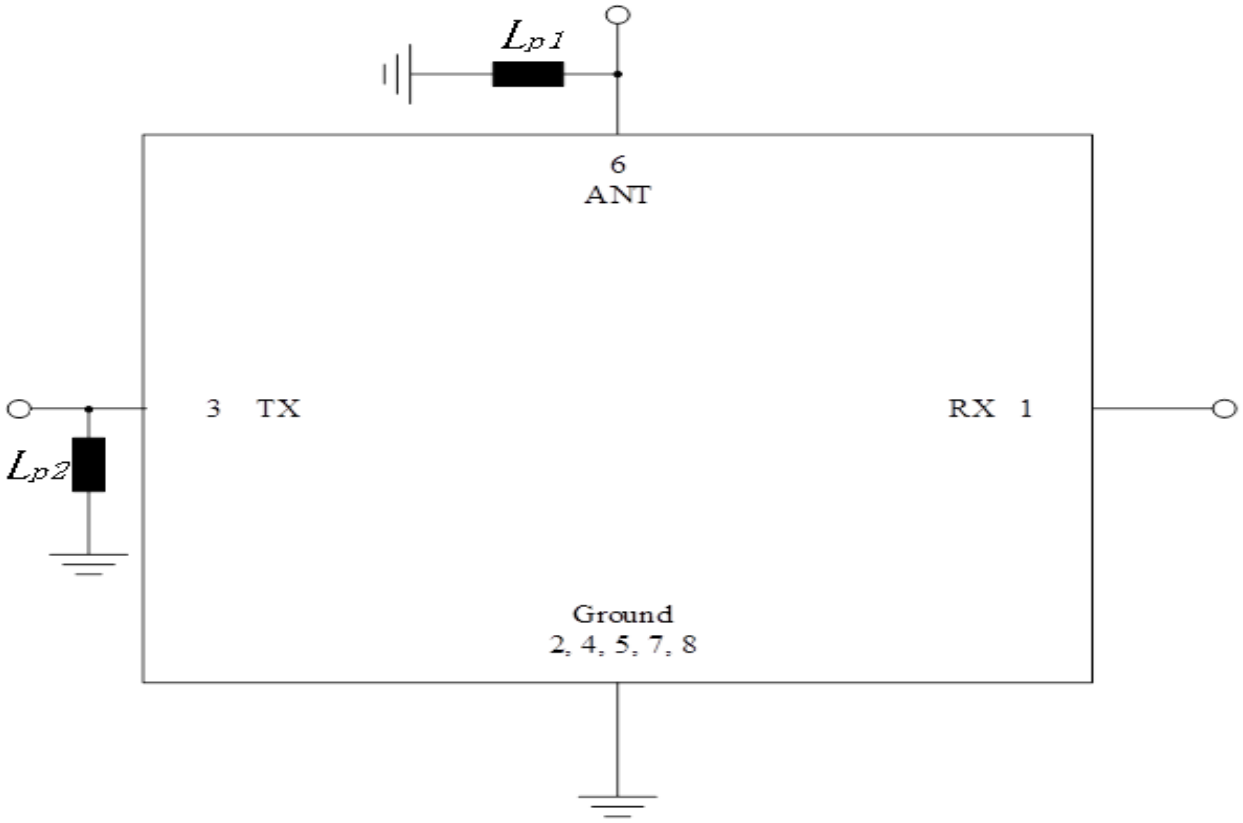


Figure 3: Schematic of matching circuit

Maximum Ratings

Characteristics		Ratings	Unit
Operable Temperature Range	T	-20 to +85	℃
Storage Temperature Range	T_{stg}	-40 to +85	℃
Maximum DC Voltage	V_{DC}	3	V
Input Power Level	P	29	dBm
ESD Voltage(MM)	V_{MM}	50	V
ESD Voltage(HBM)	V_{HBM}	175	V

Characteristics

TX terminating impedance Z_{TX} = 50 Ω with par. Lp2[1)]

ANT terminating impedance Z_{ANT} = 50 Ω with par. Lp1[1)]

RX terminating impedance Z_{RX} = 50 Ω

Tx to Ant		Specifications				
Item	Frequency Range [MHz]	Characteristics				
		Temp.	min.	typ.	max.	Unit
Center Frequency	-	-20 ~ +85	-	897.5	-	MHz
Insertion Loss	882.5 ~ 912.5	-20 ~ +85	-	1.7	2.5	dB
Ripple Deviation	880 ~ 915	-	-	0.7	2.0	dB
VSWR	880 ~ 915	-20 ~ +85	1.5	2.2	-	-
	880 ~ 915	-20 ~ +85	1.5	2.2	-	-
Attenuation	450 ~ 793	-20 ~ +85	30	35	-	dB
	832 ~ 862	-20 ~ +85	30	40	-	dB
	927.5 ~ 957.5	-20 ~ +85	35	54	-	dB
	1559 ~ 1563	-20 ~ +85	32	36	-	dB
	1565.42 ~ 1605.89	-20 ~ +85	32	36	-	dB
	1710 ~ 1785	-20 ~ +85	30	34	-	dB
	1760 ~ 1880	-20 ~ +85	27	32	-	dB
	1920 ~ 1980	-20 ~ +85	26	31	-	dB
	2110 ~ 2170	-20 ~ +85	25	30	-	dB
	2400 ~ 2500	-20 ~ +85	23	27	-	dB
	2620 ~ 2745	-20 ~ +85	23	27	-	dB
	3520 ~ 3660	-20 ~ +85	10	20		dB
	4400 ~ 4575	-20 ~ +85	3.0	8.9		dB
	4900 ~ 5950	-20 ~ +85	3.0	10		dB

See Sec. Matching circuit (p. 5).

ANT-RX

TX terminating impedance	Z_{TX}	= 50 Ωwith par. Lp2[1)]
ANT terminating impedance	Z_{ANT}	= 50 Ω with par. Lp1[1)]
RX terminating impedance	Z_{RX}	= 50 Ω

ANT to Rx		Specifications				
Item	Frequency Range [MHz]	Characteristics				
		Temp.	min.	typ.	max.	Unit
Center Frequency	-	-20 ~ +85	-	942.5	-	MHz
Insertion Loss	927.5 ~ 957.5	-20 ~ +85	-	2.0	2.5	dB
Ripple Deviation	925 ~ 960	-	-	0.5	2.3	dB
VSWR	925 ~ 960		-	1.8	2.1	dB
	925 ~ 960	-20 ~ +85	-	1.5	2.1	dB
Attenuation	450 ~ 880	-20 ~ +85	45	54	-	dB
	835 ~ 870	-20 ~ +85	40	55	-	dB
	882.5 ~ 912.5	-20 ~ +85	45	56	-	dB
	902.5 ~ 910	-20 ~ +85	30	58	-	dB
	980 ~ 1045	-20 ~ +85	12	17	-	dB
	1045 ~ 6000	-20 ~ +85	24	34	-	dB
	1472 ~ 1448	-20 ~ +85	40	59	-	dB
	1710 ~ 1785	-20 ~ +85	40	56	-	dB
	1805 ~ 1980	-20 ~ +85	40	56	-	dB
	2400 ~ 3840	-20 ~ +85	39	45	-	dB
	4625 ~ 4800	-20 ~ +85	28	36	-	dB
	4900 ~ 5950	-20 ~ +85	25	34	-	dB

See Sec. Matching circuit (p. 5).

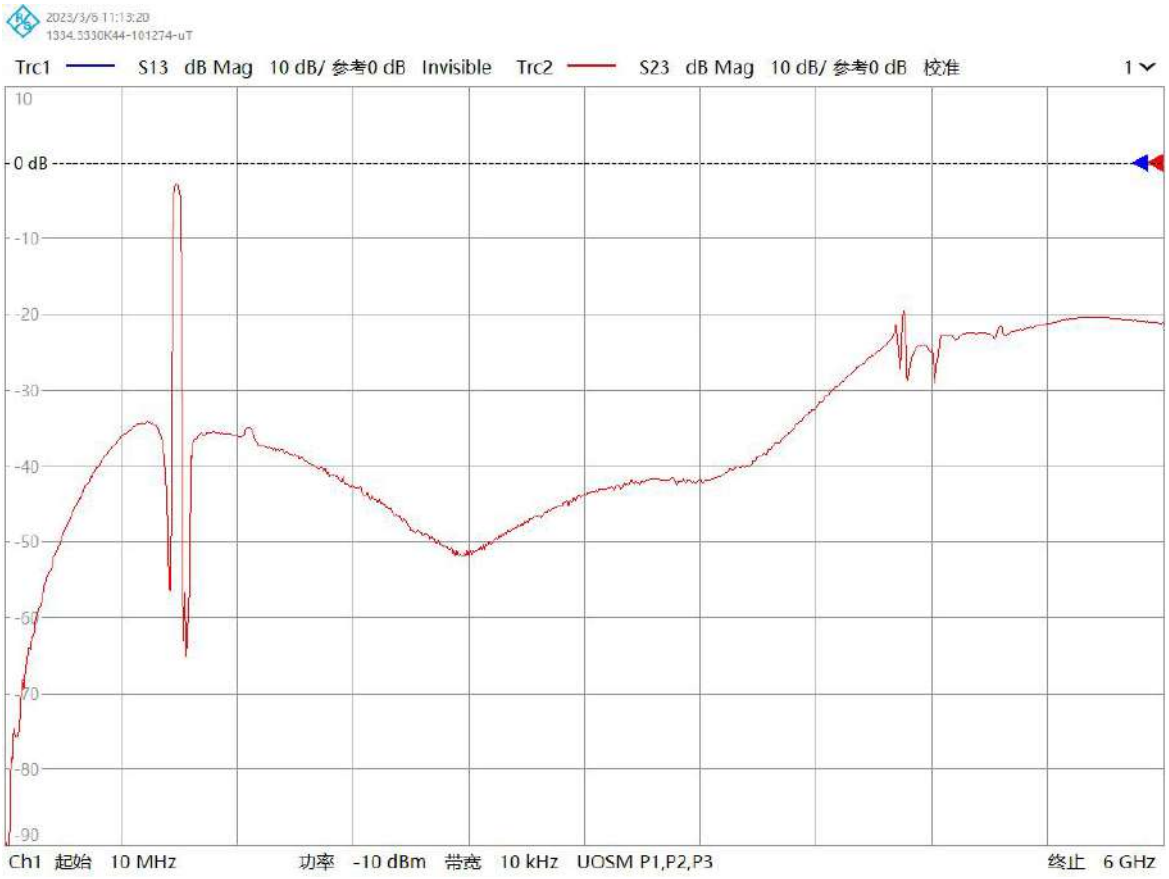
TX – RX

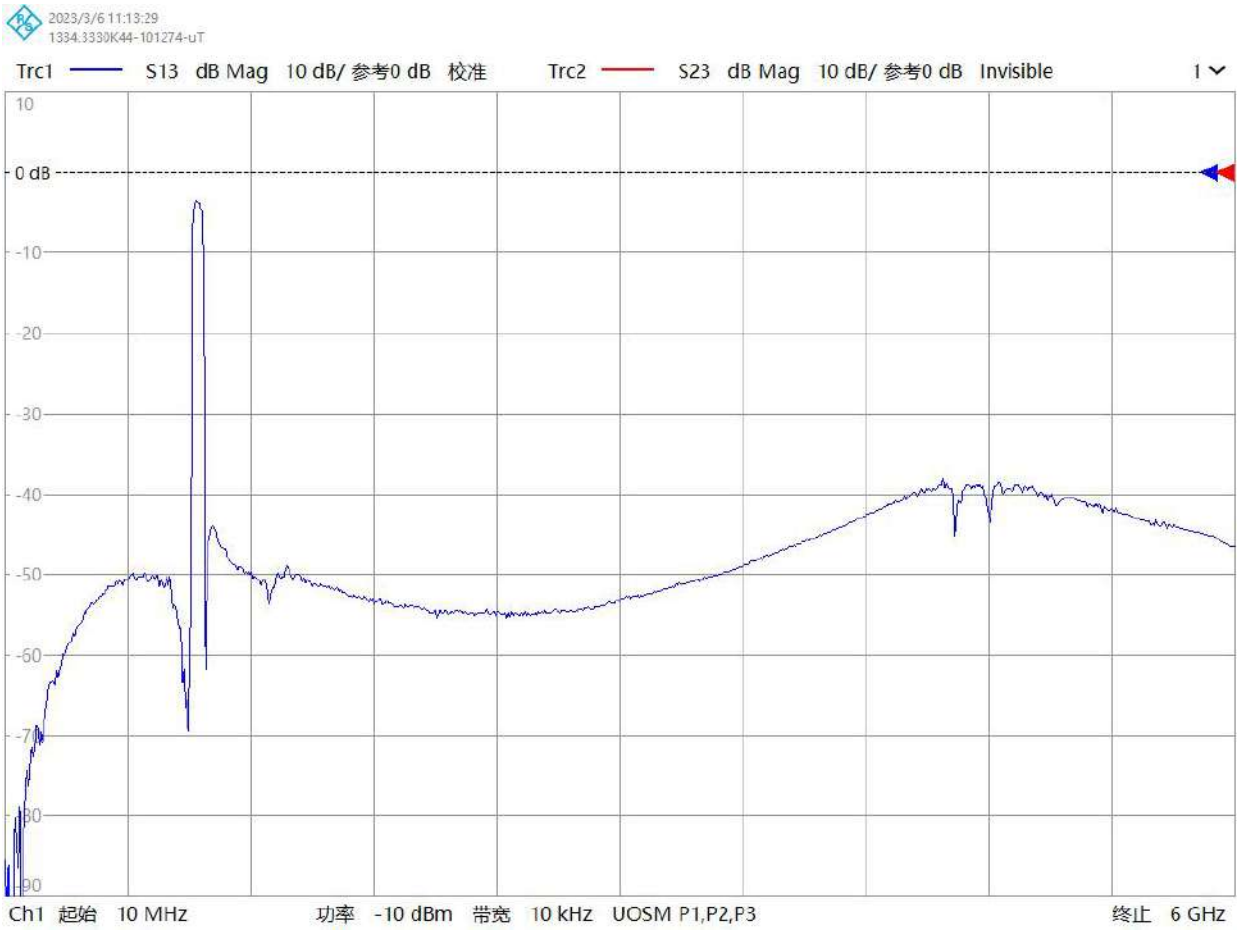
Temperature range for specification	T_{SPEC}	= -20℃…+85℃
TX terminating impedance	Z_{TX}	= 50 Ω with par. Lp2
ANT terminating impedance	Z_{ANT}	= 50 Ω with par. Lp1[1)]
RX terminating impedance	Z_{RX}	= 50 Ω

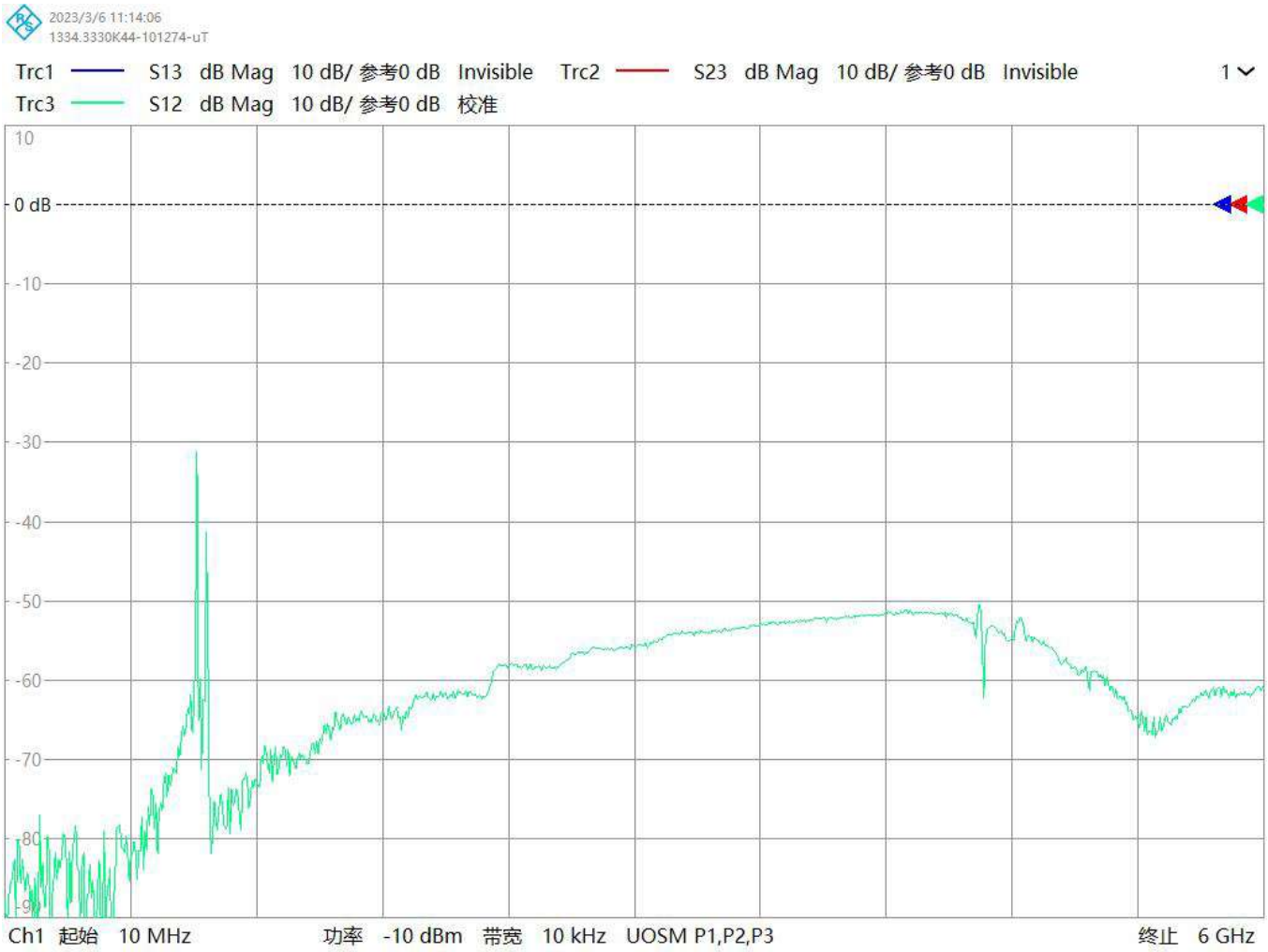
Tx to Rx		Specifications			
Item	Frequency Range [MHz]	Characteristics			
		min.	typ.[2]	max.	Unit
Isolation	882.5 ~ 912.5	56	61	-	dB
	927.5 ~ 957.5	50	56	-	dB

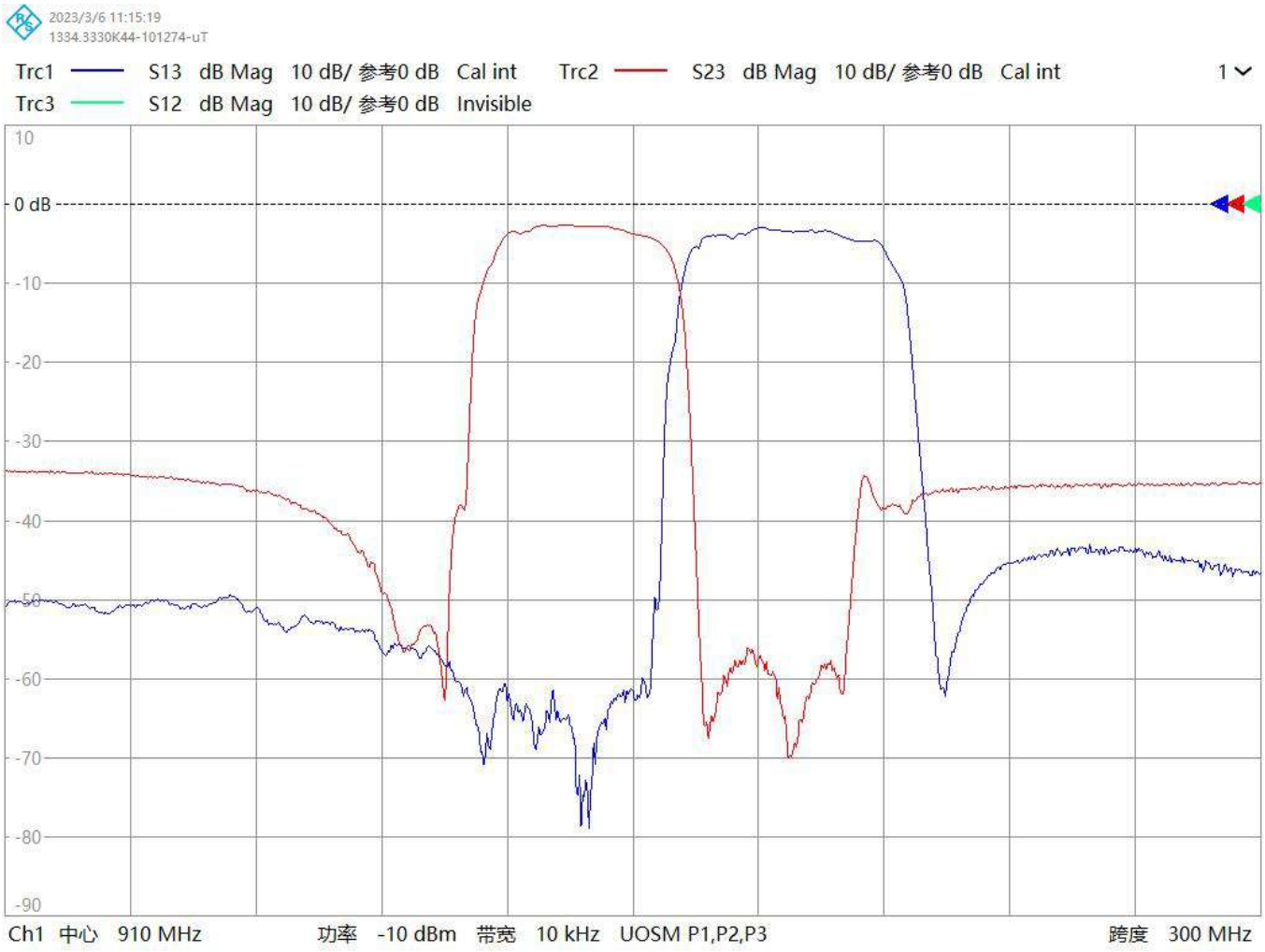
1. See Sec. Matching circuit (p. 5).

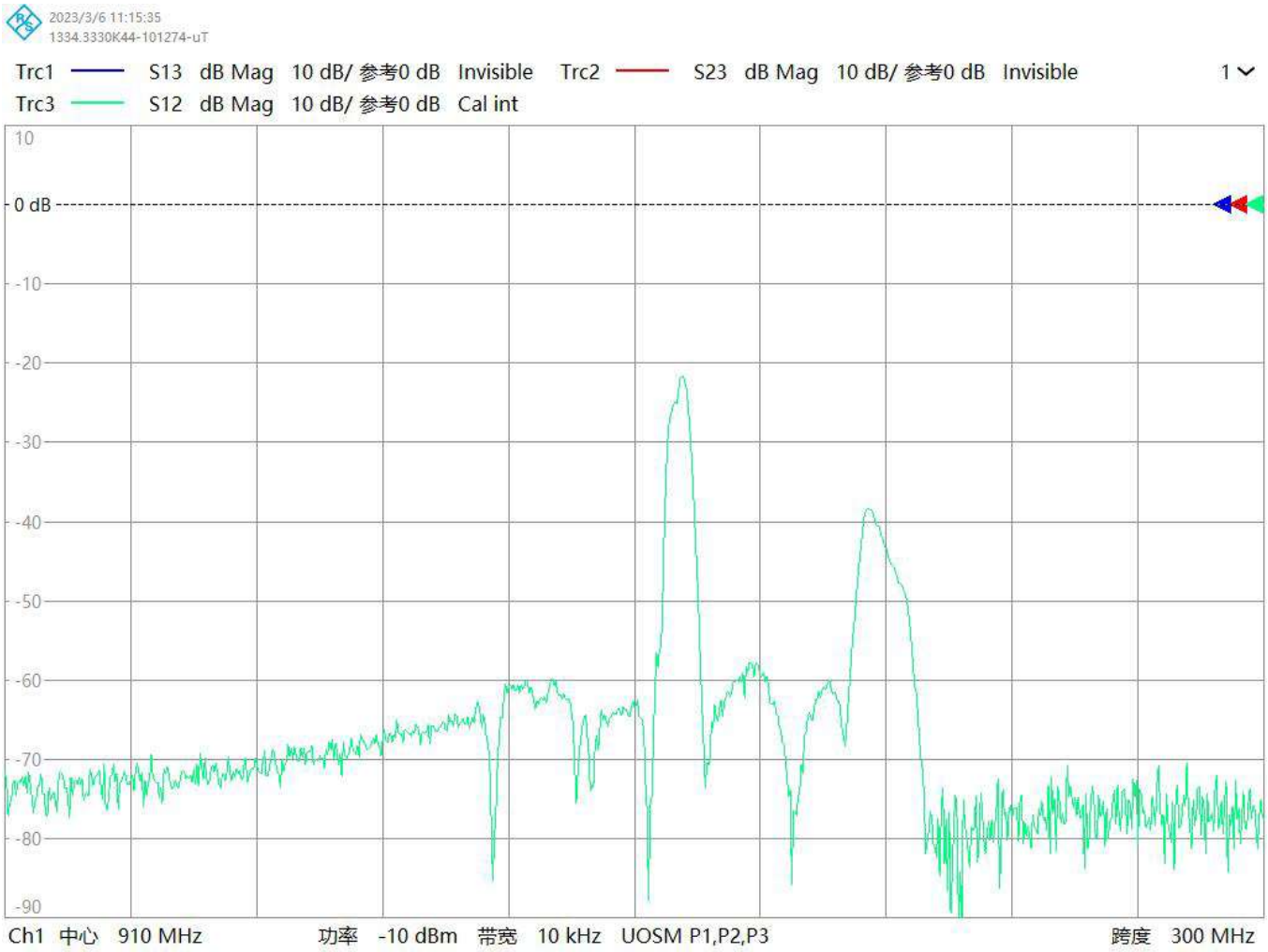
Frequency Characteristics











Reliability Characteristics

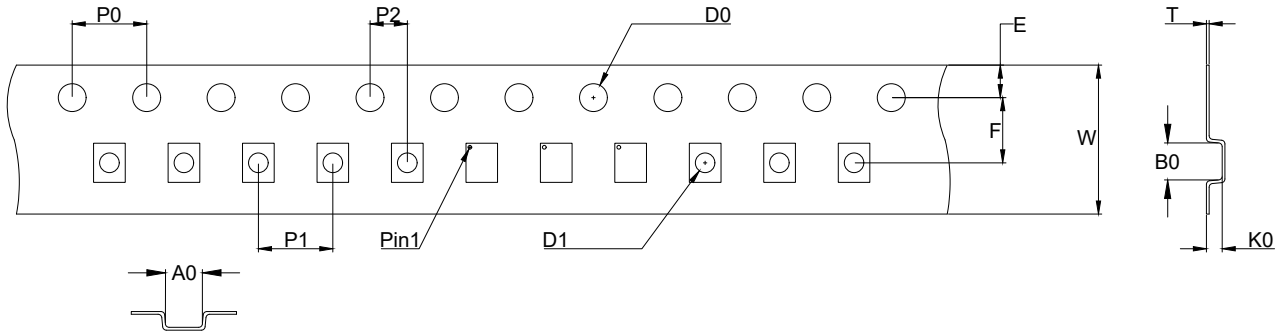
No.	Item	Condition to be satisfied
1	High Temp. Storage	①Test temperature: +85℃±3℃ ②Duration time：500 hours ③Restore time: 2 hours at the room temperature(25℃)
2	Low Temp. Storage	①Test temperature: -40℃±3℃ ②Duration Time: 500 hours ③Restore time: 2 hours at the room temperature(25℃)
3	High Temp. High 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

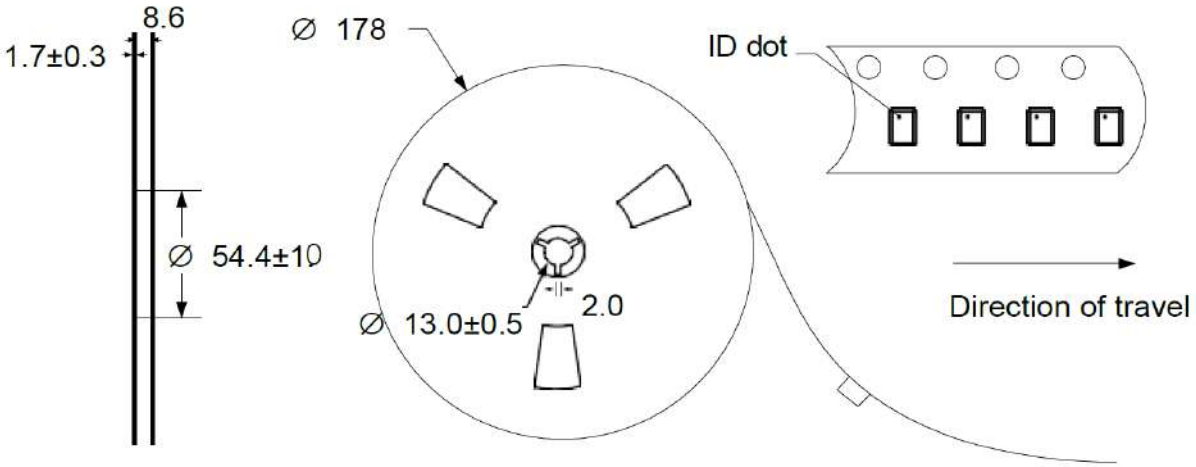
Tape (Unit: mm)



Size	P0	P1	P2	D0	D1	E	F	W	A0	B0	K0	T
Value	4.00	4.00	2.00	Φ1.55	Φ1.00	1.75	3.50	8.00	1.70	2.10	0.80	0.25
Tolerance	±0.10	±0.10	±0.10	±0.05	±0.05	±0.10	±0.10	±0.20	±0.05	±0.05	±0.05	±0.05

Reel (Unit：mm)

Standard T/R size=5,000 units/reel.



Recommended Soldering Profile