Acoustic Chip Technology
Shengxin

DATASHEET

of SAW Devices

SAW Filter

Part Number: SXF0070RENSD01

Center Frequency: 70MHz

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

Revision Record

Revision Number	Date	Description
SXF0070RENSD01_V1.0	2024-02-29	Preliminary Version

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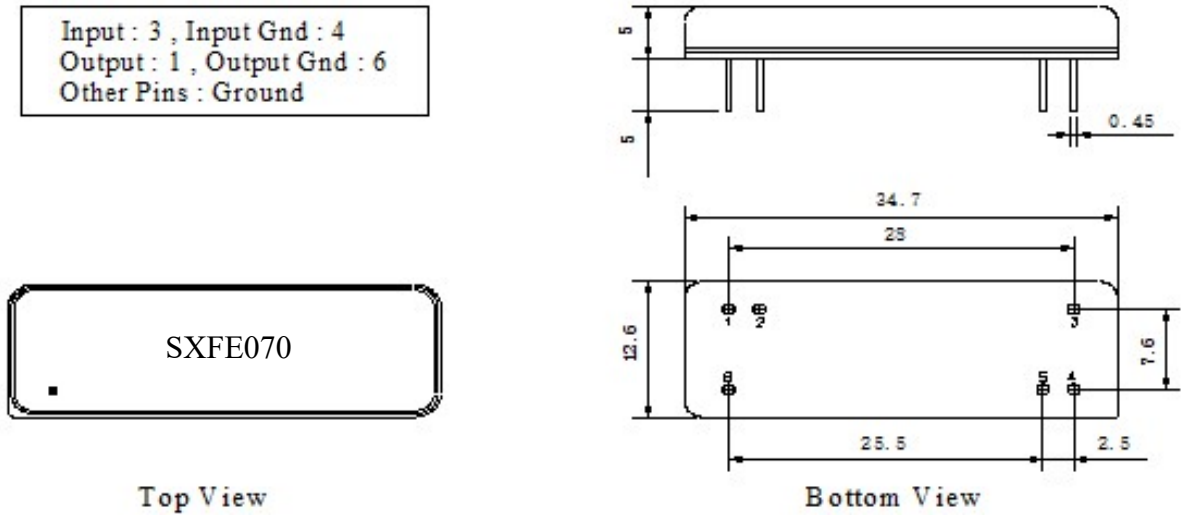
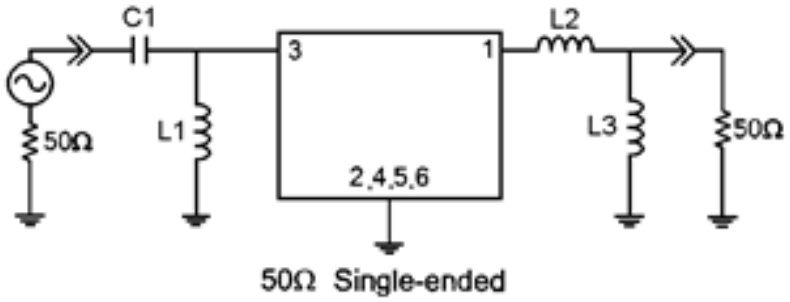
1.Package Dimension (Unit: mm)



Attention: The mark SXFE070 is for reference.

2.MeasurementCircuit



L1=120nH, L2=15nH, L3=220nH, C1=82pF
Source / Load Impedance = 50Ω
Ambient Temperature = 25°C

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3.Maximum Ratings

Rating		Value	Unit
RF Input Power	P	10	dBm
DC Voltage	V_{DC}	3	V
Operating Temperature Range	T_A	-20 ~ +70	°C
Storage Temperature Range	T_{stg}	-40~ +85	°C
ESD Voltage(MM)	V_{MM}	50	V
ESD Voltage(HBM)	V_{HBM}	175	V

4.Electrical Specification

Item	Frequency Range [MHz]	Characteristics			
		min.	typ.	max.	Unit
Center Frequency	-	69.92	70.00	70.08	MHz
Insertion Loss	-	-	27.50	29.00	dB
1dB Bandwidth	-	17.90	18.00	-	MHz
3dB Bandwidth	-	-	18.14	-	MHz
35dB Bandwidth	-	-	18.76	-	MHz
40dB Bandwidth	-	-	18.80	18.88	MHz
Amplitude Ripple	-	-	0.70	1.00	dB
Group Delay Variation	-	-	70	150	nsec
Absolute Delay Time	-	-	3.77	-	μsec
Absolute Attenuation	-	40	46	-	dB
Temperature Coefficient of Frequency	-72				ppm/°C
Terminating Impedance	50				Ω

1. at 25±2deg.C

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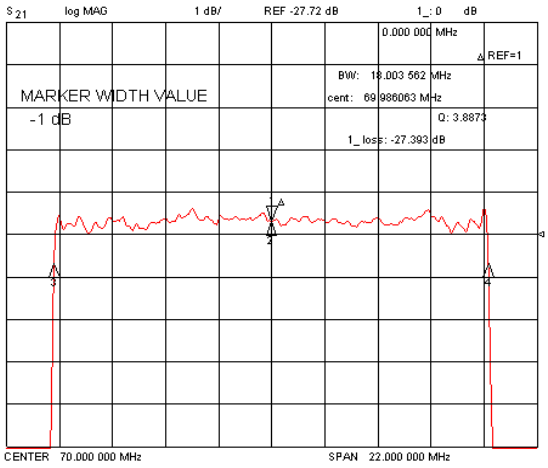
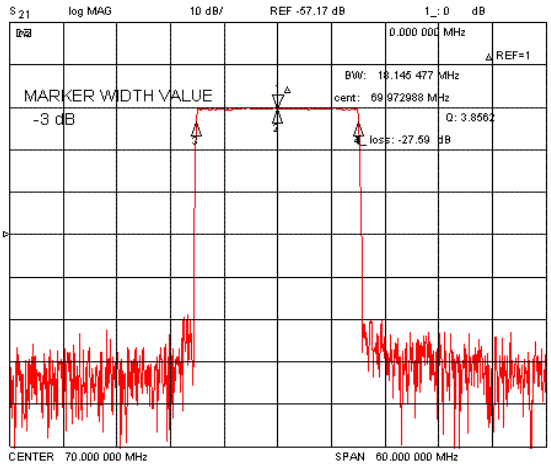
5.Frequency Characteristics

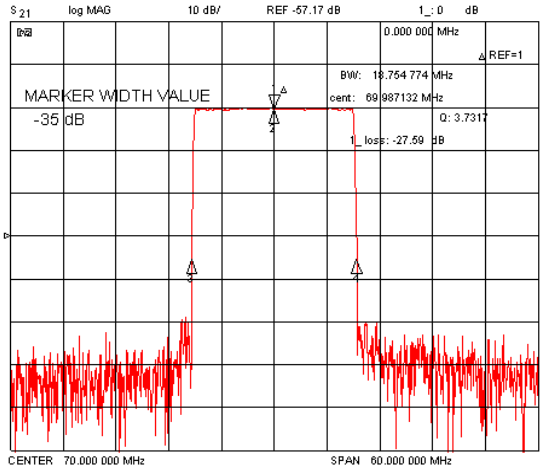
1dB Bandwidth



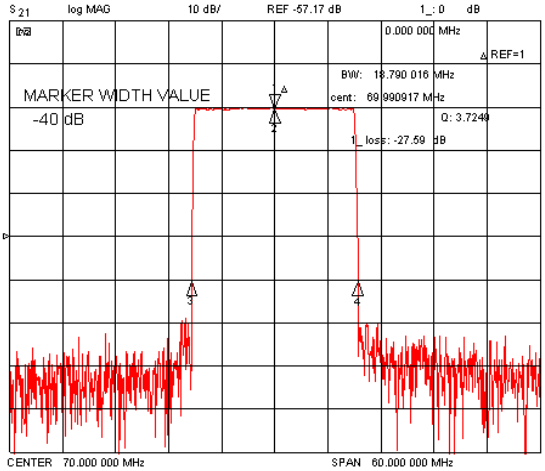
3dB Bandwidth



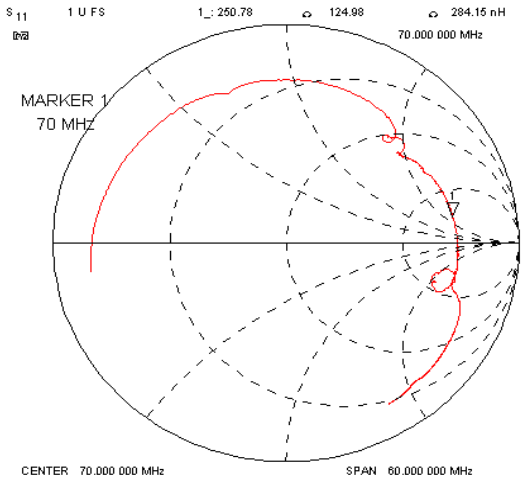
35dB Bandwidth



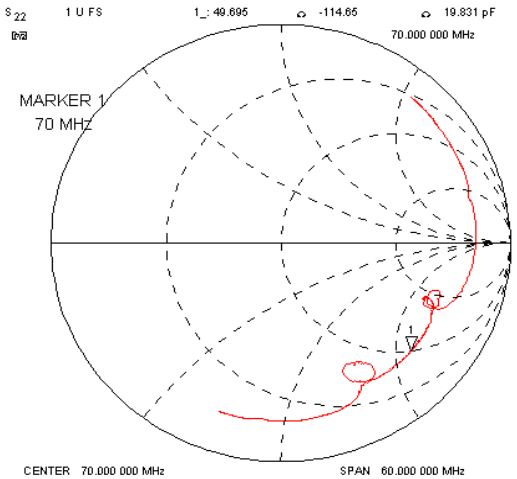
40dB Bandwidth



S11 Smith Chart



S22 Smith Chart



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6.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+0/-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, 245±5 ℃ for 5±0.5s

7.Remarks

1. Please be certain not to apply voltage above the rated voltage of SAW components.
2. Please be sure that the components are operated 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.

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