Acoustic Chip Technology
Shengxin

# DATASHEET

## of SAW Devices

## SAW Filter

Part Number: SXF0070RCNSS10

Center Frequency: 70.00MHz

Package: SMD1365

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

# Revision Record

| Revision Number | Date | Description |
|---|---|---|
| SXF0070RCNSS10_RevA/0 | 2024-01-26 | Preliminary Version |
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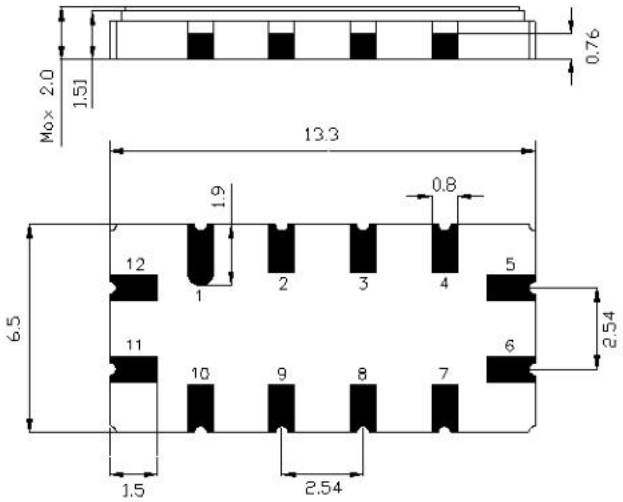
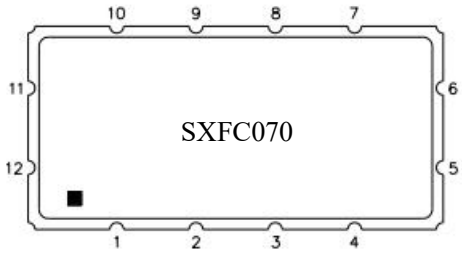
# 1.Features

■ Single Ended Operation

■ Ceramic Surface Mount Device (SMD) Package

# 2.Package Dimension (Unit: mm)




Input : 11 , Input Gnd : 12
Output : 5 , Output Gnd : 6
Other Pins : Ground

Attention: The mark SXFC070 is for reference.

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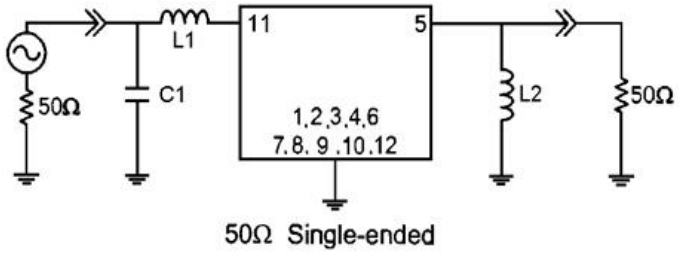
# 3.MeasurementCircuit




L1=120nH, L2=100nH, C1=68pF
Source / Load Impedance = 50Ω
Ambient Temperature = 25°C

# 4.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 |

# 5.Electrical Specification

Source and Load Impedance = 50Ω

| Item | Frequency Range [MHz] | Characteristics | | | |
|---|---|---|---|---|---|
| | | min. | typ.[1] | max. | Unit |
| **Center Frequency** | - | 69.80 | 70.00 | 70.20 | MHz |
| **Insertion Loss** | - | - | 12.60 | 13.50 | dB |
| **1dB Bandwidth** | - | 15.20 | 15.53 | - | MHz |
| **3dB Bandwidth** | - | - | 16.25 | - | MHz |
| **40dB Bandwidth** | - | - | 19.40 | 20.50 | MHz |
| **Passband Ripple (Fc±7.0MHz)** | - | - | 0.45 | 1.00 | dB |
| **Group Delay Variation (Fc±7.0MHz)** | - | - | 50 | 100 | nsec |
| **Absolute Delay Time** | - | - | 0.97 | - | μsec |
| **Ultimate Attenuation** | - | 40 | 45 | - | dB |
| **Temperature Coefficient of Frequency** | - | - | -86 | - | ppm/℃ |
| **Terminating Impedance** | 50 | | | | Ω |

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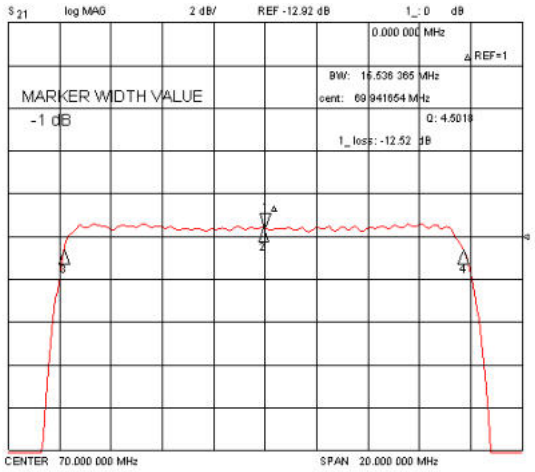
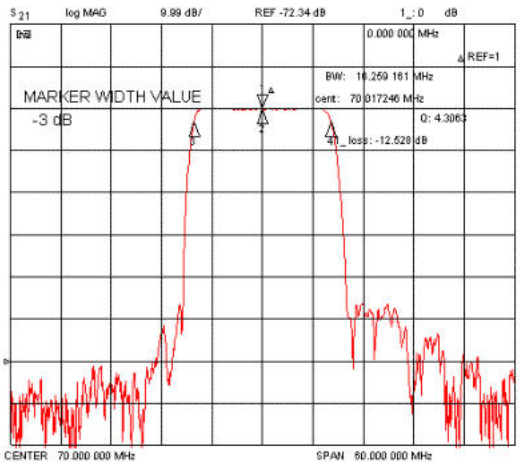
# 6.Frequency Characteristics

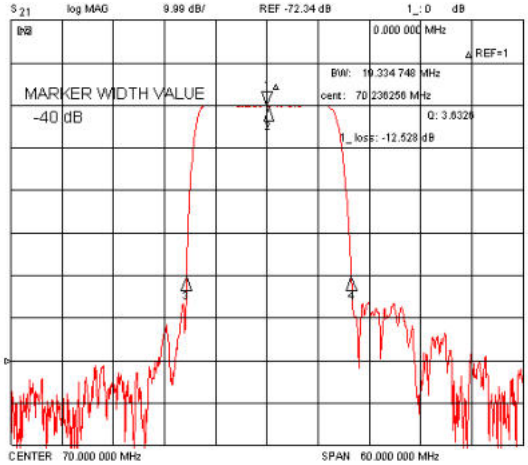
1dB Bandwidth



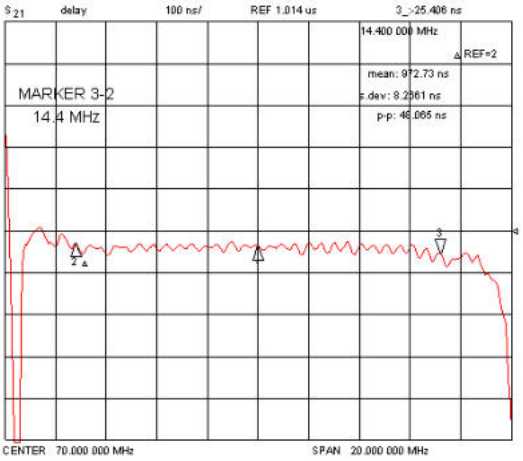

3dB Bandwidth



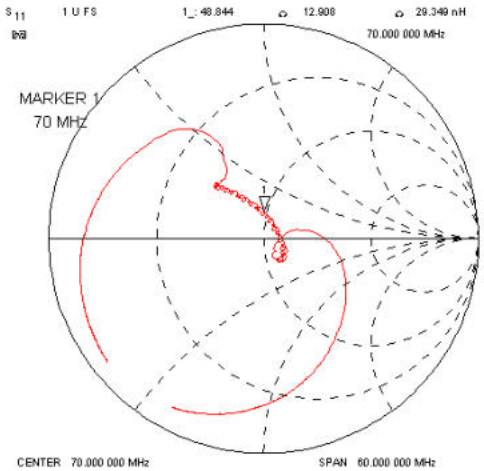

40dB Bandwidth



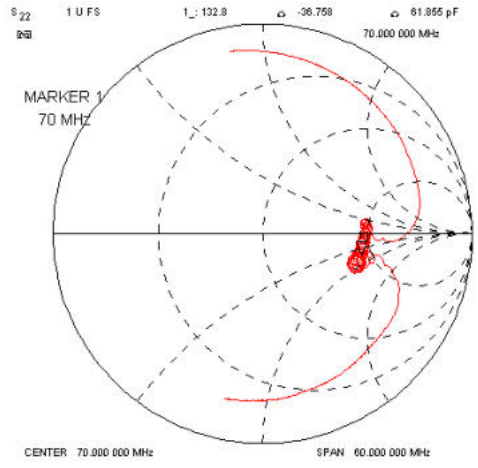

DELAY




S11 Smith Chart




S22 Smith Chart

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# 7.Reliability Characteristics

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

# 8.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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