# APPROVAL SHEET

| Approval Specification | | Customer's Approval Certificate |
|---|---|---|
| **TO:**<br><br>**Part No.:**<br><br>**Customer's Part No.:** | | Please return this copy as a certification of your approval<br><br>**Checked & Approved by:**<br><br>**Date:** |

## BEIJING ZHONGXUN SIFANG SCIENCE & TECHNOLOGY CO.,LTD.

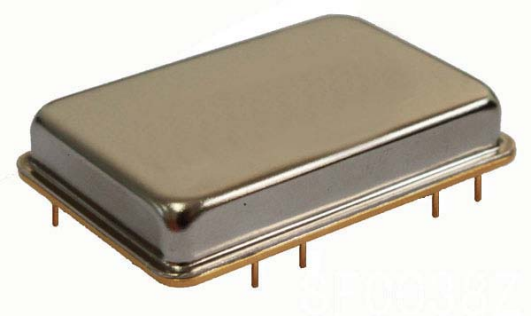

Tel: +86-010-58937383
Fax: +86-010-58937263
E-mail: bjzxsf@bjzxsf.net
Website: http://www.bjzxsf.net
Add: No 201, Block A. Building 3. Yongjie Beilu
Yongfeng high-tech industrial base
Haidian District Beijing city


| | | |
|---|---|---|
| Part No. | : | SF0407 |
| Pages | : | 6 |
| Date | : | 2014/4/11 |
| Revision | : | 1.1 |

| | |
|---|---|
| **Prepared by:** | 梁浩 |
| **Checked by:** | |
| **Approved by:** | |

## Application

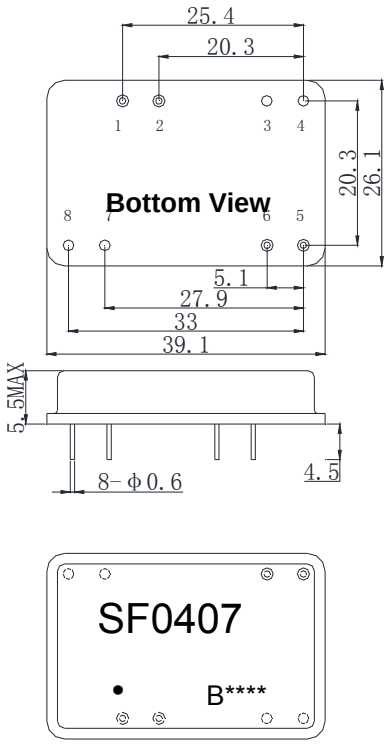
- Low-loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Usable passband 0.22/1.8 MHz



## Features

- **RoHS** compatible
- Package size 39.1x26.1x7.50mm$^3$
- Package Code DIP3926J
- **E**lectrostatic **S**ensitive **D**evice(**ESD)**

## Package Dimensions (Unit: mm)







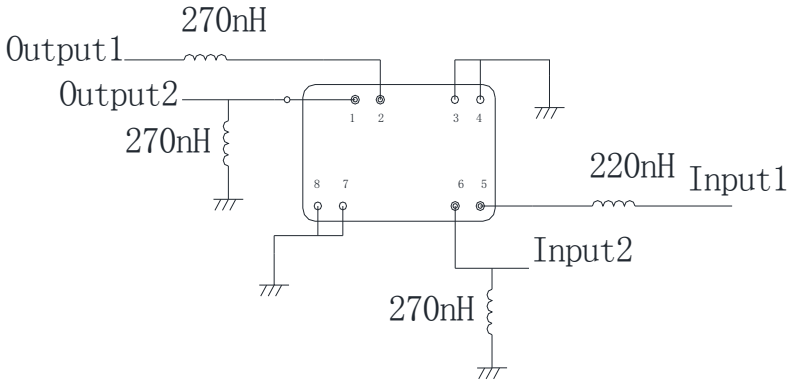
## Pin Configuration

| Pin No. | Description |
|---|---|
| 5 | Input1 |
| 6 | Input2 |
| 2 | Output1 |
| 1 | Output2 |
| 3,4,7,8 | Ground |

## Marking Description

| | |
|---|---|
| **S** | Trademark |
| **F** | SAW Filter |
| **0407** | Part Number |
| ● | Pin 1 |
| **B****** | Year Code & Serial No. |

## Test Circuit(Bottom View)



## Performance

### Maximum Rating

| Item | | Value | Unit |
|---|---|---|---|
| DC Voltage | $V_{DC}$ | 3 | V |
| Operation Temperature | T | -40 ~ +85 | ℃ |
| Storage Temperature | $T_{stg}$ | -55 ~ +125 | ℃ |
| RF Power Dissipation | P | 10 | dBm |

### Electronic Characteristics

Test Temperature: 25℃±2℃

Terminating source impedance: 50Ω

Terminating load impedance: 50Ω

Case input 5 output 2

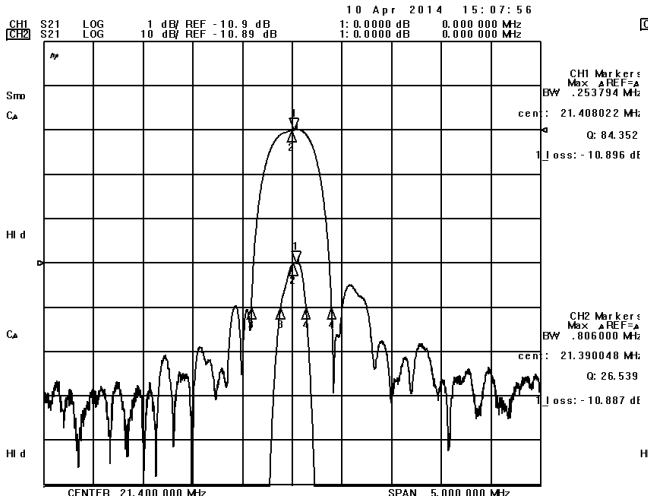
| | | Minimum | Typical | Maximum | Unit |
|---|---|---|---|---|---|
| Center Frequency | fc | | 21.4 | | MHz |
| Insertion Loss | IL | | 10.9 | 12.0 | dB |
| Amplitude Ripple (p-p) 21.26-21.54MHz | △α | | 1.5 | 3.0 | dB |
| 1 dB Bandwidth | $BW_{1dB}$ | 0.22 | 0.26 | | MHz |
| Group Delay Ripple 21.26-21.54MHz | GDR | | 240 | 260 | ns |
| Absolute Attenuation | α | | | | |
| 18.90-20.30MHz | | 40 | 50 | | dB |
| 21.00MHz | | 30 | 33 | | dB |
| 21.80 MHz | | 30 | 43 | | dB |
| 22.50-23.90MHz | | 40 | 50 | | dB |

Case input6 output 1

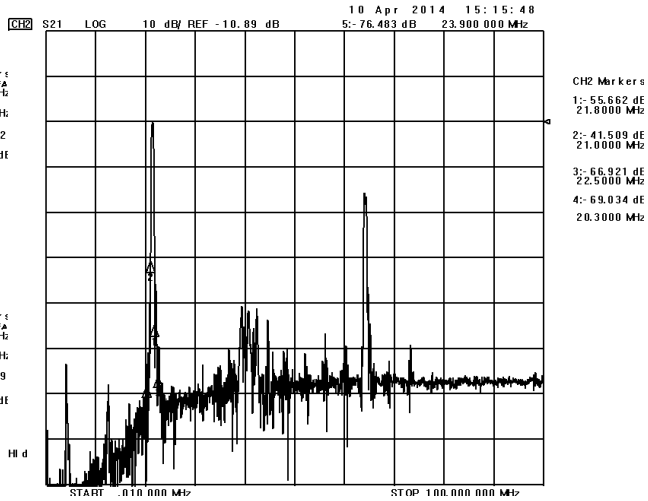
| | | Minimum | Typical | Maximum | Unit |
|---|---|---|---|---|---|
| Center Frequency | fc | | 21.4 | | MHz |
| Insertion Loss | IL | | 10.5 | 12.0 | dB |
| Amplitude Ripple (p-p) 20.55-22.25MHz | △α | | 0.5 | 0.8 | dB |
| 1 dB Bandwidth | $BW_{1dB}$ | 1.8 | 2.4 | | MHz |
| Group Delay Ripple 20.55-22.25MHz | GDR | | 100 | 150 | ns |
| Absolute Attenuation | α | | | | |
| 11.40-18.40MHz | | 40 | 42 | | dB |
| 24.40-31.40MHz | | 40 | 42 | | dB |

**Frequency Characteristics(**Case input 5 output 2**)**

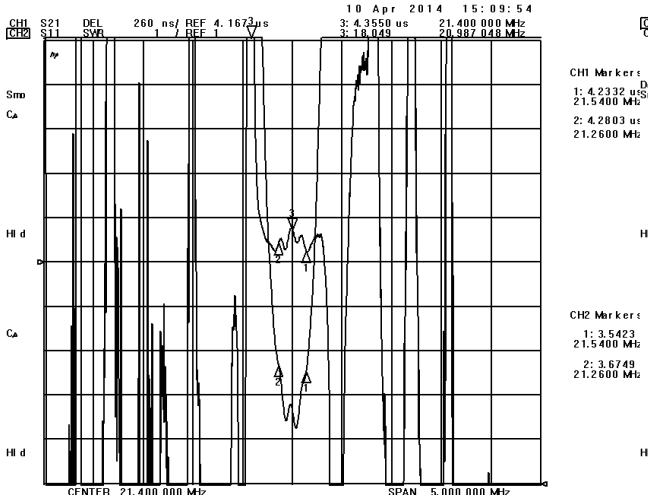
Frequency Response



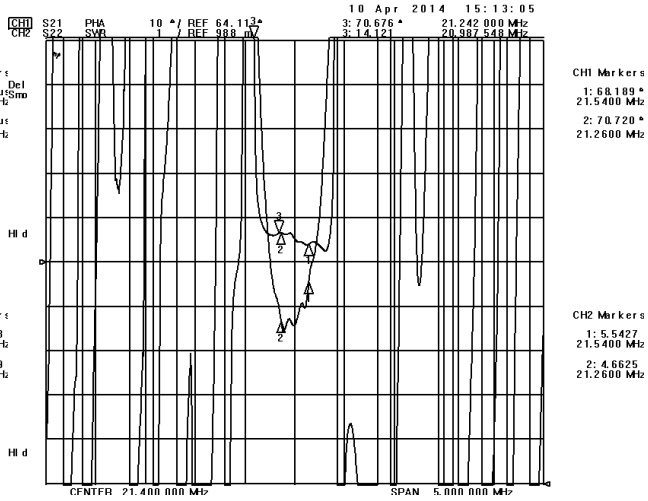

Frequency Response（wideband）



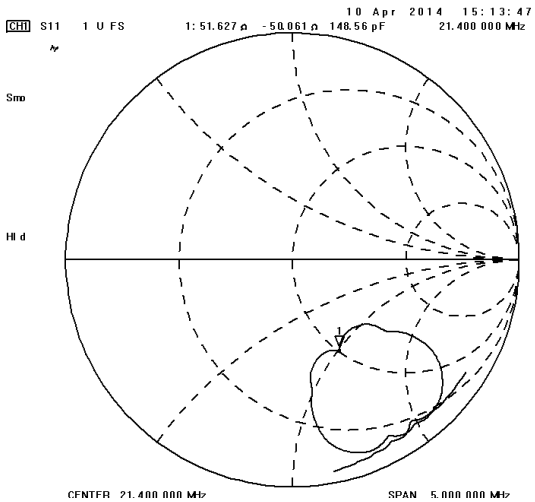

Delay Ripple & S11 VSWR



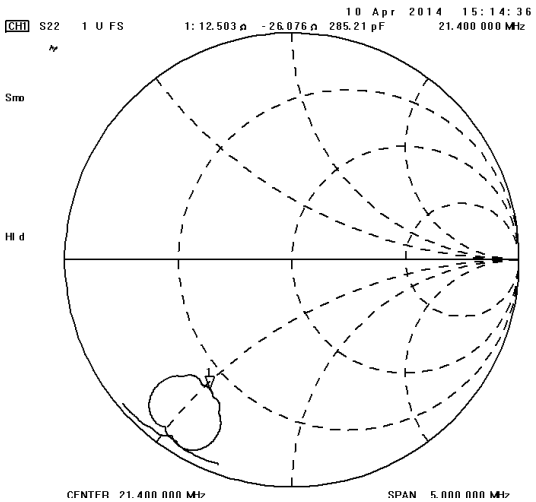

Phase Linearity & S22 VSWR




S11 Smith Chart

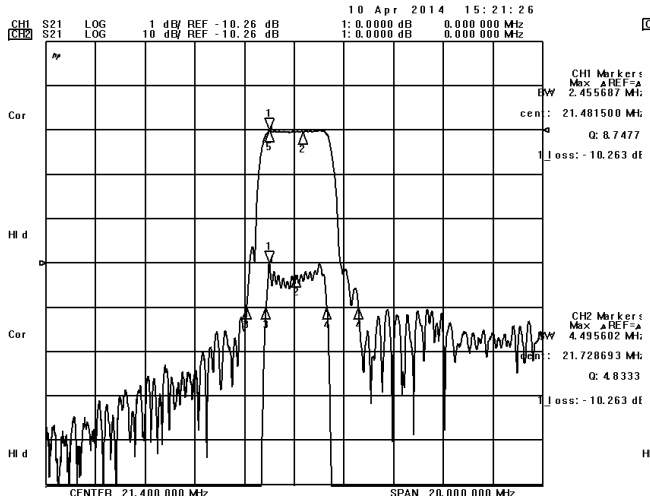



S22 Smith Chart

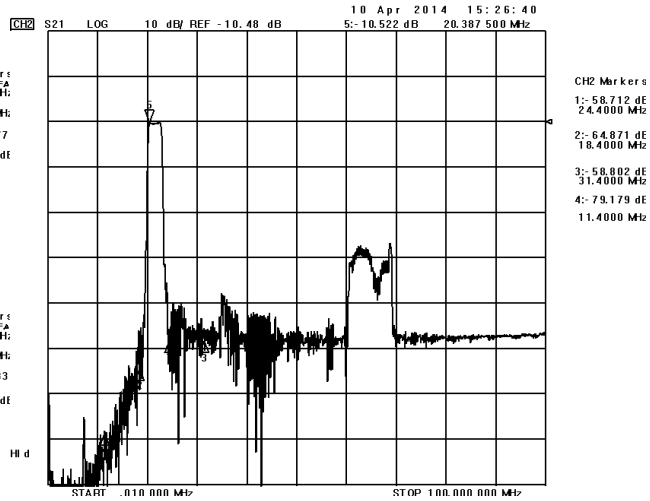


**Frequency Characteristics(**Case input 6 output 1**)**

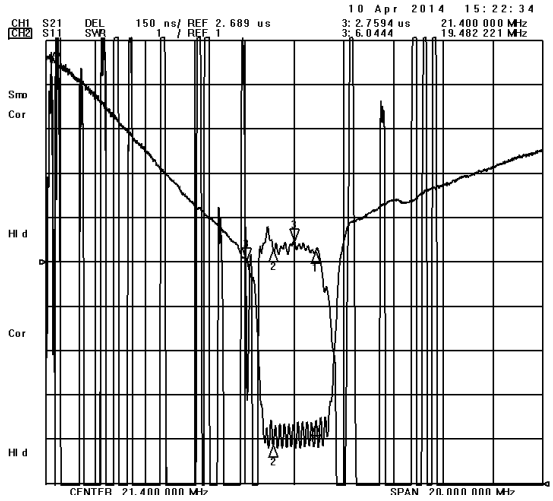
Frequency Response



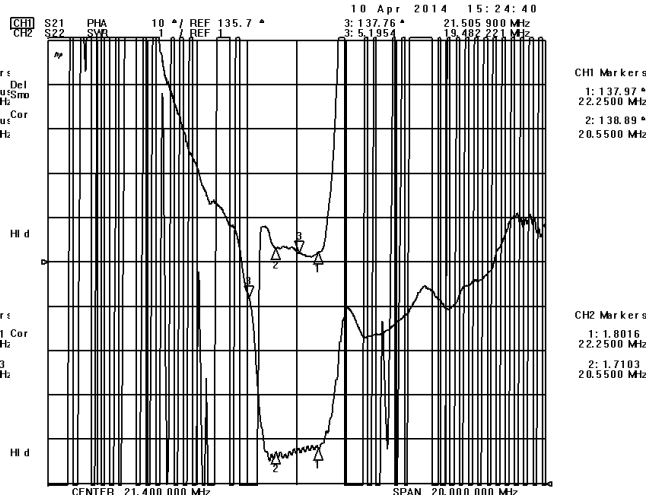

Frequency Response（wideband）



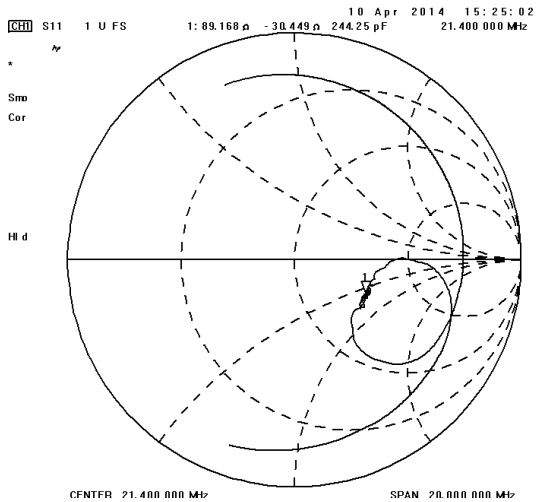

Delay Ripple & S11 VSWR



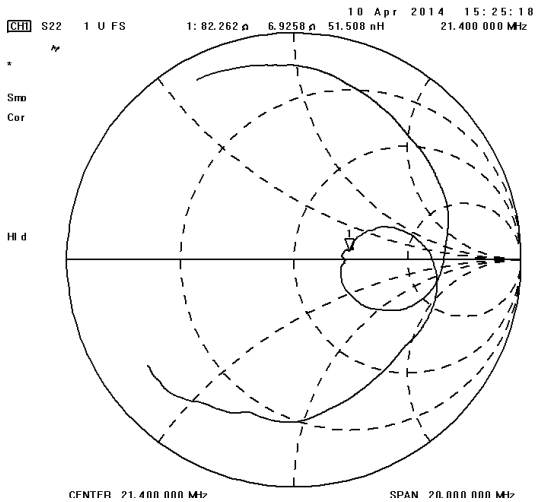

Phase Linearity & S22 VSWR




S11 Smith Chart



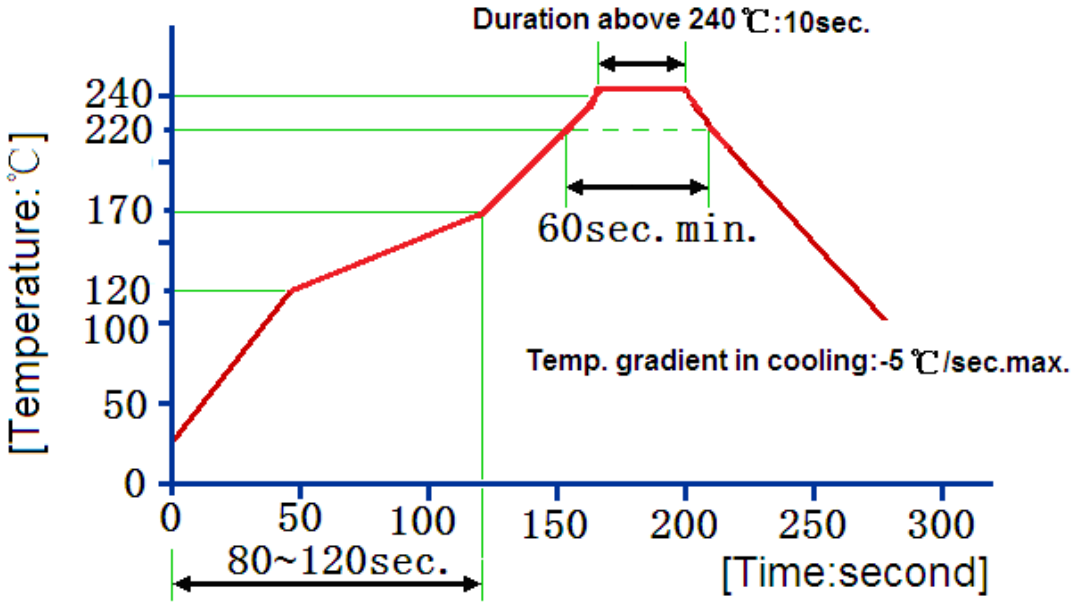

S22 Smith Chart



**Reliability（The SAW components shall remain electrical performance after tests）**

| No. | Test item | Test condition |
|---|---|---|
| 1 | Temperature Storage | (1) Temperature: 85℃±2℃ , Duration: 250h , Recovery time: 2h±0.5h<br>(2) Temperature: –55℃±3℃ , Duration: 250h ,Recovery time: 2h±0.5h |
| 2 | Humidity Test | Conditions: 60℃±2℃ , 90~95% RH Duration: 250h |
| 3 | Thermal Shock | Heat cycle conditions: TA=-55℃±3℃, TB=85℃±2℃, t1=t2=30min, Switch time: ≤3min, Cycle time: 100 times, Recovery time: 2h±0.5h. |
| 4 | Vibration Fatigue | Frequency of vibration: 10~55Hz Amplitude:1.5mm<br>Directions: X,Y and Z Duration: 2h |
| 5 | Drop Test | Cycle time: 10 times Height: 1.0m |
| 6 | Solder Ability Test | Temperature: 245℃±5℃ Duration: 3.0s--5.0s<br>Depth: DIP--2/3 , SMD--1/5 |
| 7 | Resistance to Soldering Heat | (1)Thickness of PCB:1mm , Solder condition: 260℃±5℃ , Duration: 10±1s<br>(2)Temperature of Soldering Iron: 350℃±10℃ , Duration: 3~4s ,<br>Recovery time : 2 ± 0.5h |

## Recommended Reflow Soldering Diagram




Reflow cycles:3 cycles max.

## Notes

1. As a result of the particularity of inner structure of SAW products, it easy to be breakdown by electrostatic, so we should pay attention to **ESD protect** in the test.
2. **Static voltage** between signal load and ground may cause deterioration and destruction of the component. Please avoid static voltage.
3. **Ultrasonic cleaning** may cause deterioration and destruction of the component. Please avoid ultrasonic cleaning.
4. Only leads of component may **be soldered**. Please avoid soldering another part of component.
5. There is a close relationship between the device's performance and **matching network**. The specifications of this device are based on the test circuit shown above. L and C values may change depending on board layout. Values shown are intended as a guide only.