# 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:** |

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| | | |
|---|---|---|
| Part No. | : | SF1387 |
| Pages | : | 6 |
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| Revision | : | 1.0 |

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

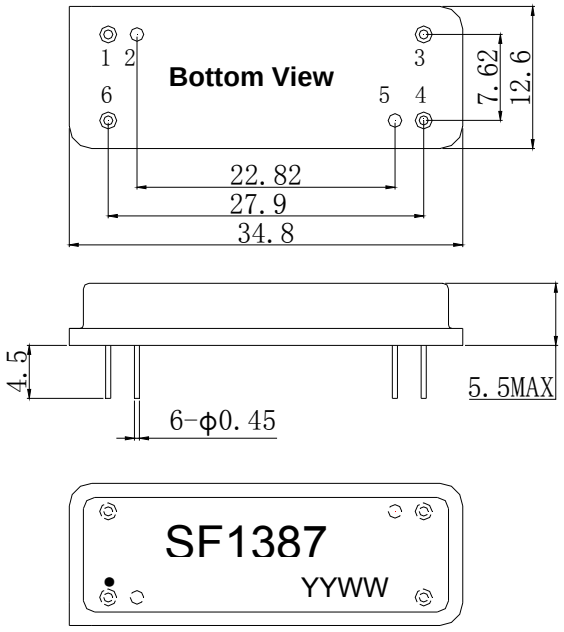
## Application

- Low-loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Usable passband 59.25 MHz

## Features

- **RoHS** compatible
- Package size 34.8x12.6x5.50mm$^3$
- Package Code DIP3512J
- **E**lectrostatic **S**ensitive **D**evice(**ESD)**

## Package Dimensions (Unit: mm)




## Pin Configuration

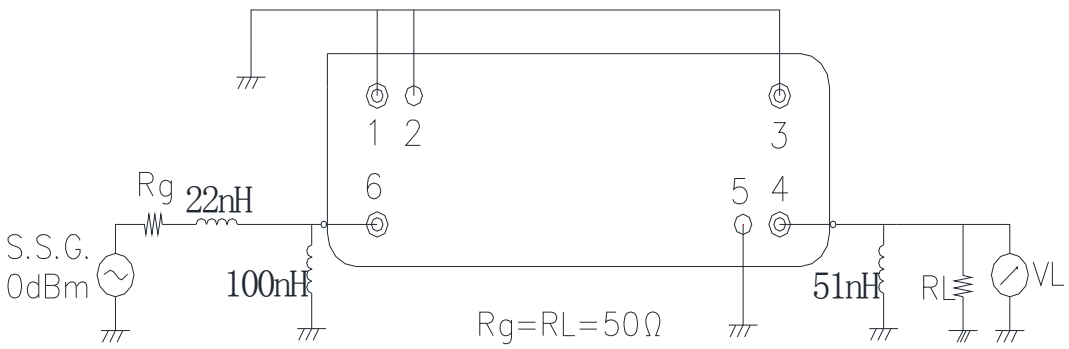
| Pin No. | Description |
|---|---|
| 6 | Input |
| 4 | Output |
| 1,2,3,5 | Ground |

## Marking Description

| | |
|---|---|
| **S** | Trademark |
| **F** | SAW Filter |
| **1387** | Part Number |
| ● | Pin 1 |
| **YYWW** | Year Code & Week Code |

*Fig：If the products produced in 06th week of 2012,
The year code & week code is 1206.

## 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℃

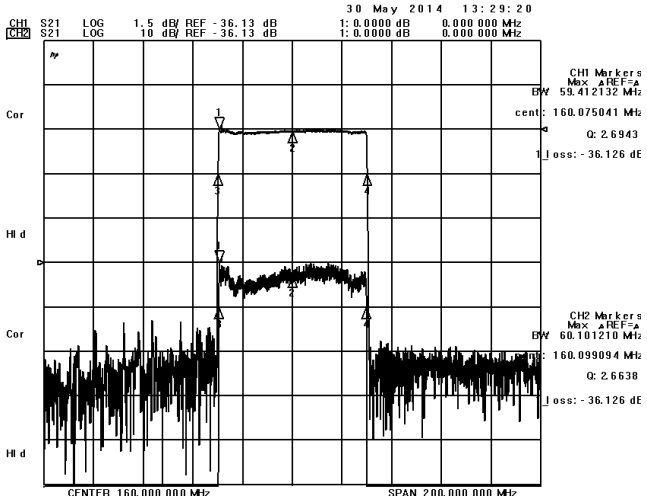
Terminating source impedance: 50Ω

Terminating load impedance: 50Ω

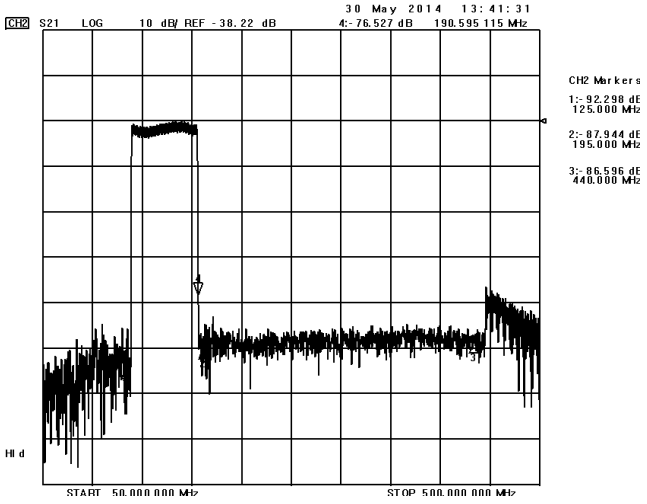
| Item | | Minimum | Typical | Maximum | Unit |
|---|---|---|---|---|---|
| Center Frequency | fc | 159.8 | 160.0 | 160.2 | MHz |
| Insertion Loss | IL | | 36.5 | 37.0 | dB |
| Amplitude Ripple | △α | | 1.4 | 1.5 | dB |
| 1.5 dB Bandwidth | $BW_{1.5dB}$ | 59.25 | 59.38 | | MHz |
| 3 dB Bandwidth | $BW_{3dB}$ | | 59.58 | | MHz |
| 15 dB Bandwidth | $BW_{15dB}$ | | 60.26 | 60.38 | MHz |
| 40 dB Bandwidth | $BW_{40dB}$ | | 60.77 | 61.25 | MHz |
| Absolute Delay | AD | | 2.5 | 4.0 | us |
| Group Delay Ripple 132.00-188.00MHz | GDR | | 15.0 | 80.0 | ns |
| Absolute Attenuation | α | | | | |
| 60.00-128.00 MHz | | 40.0 | 45.0 | | dB |
| 192.00-260.00 MHz | | 40.0 | 45.0 | | dB |

## Frequency Characteristics

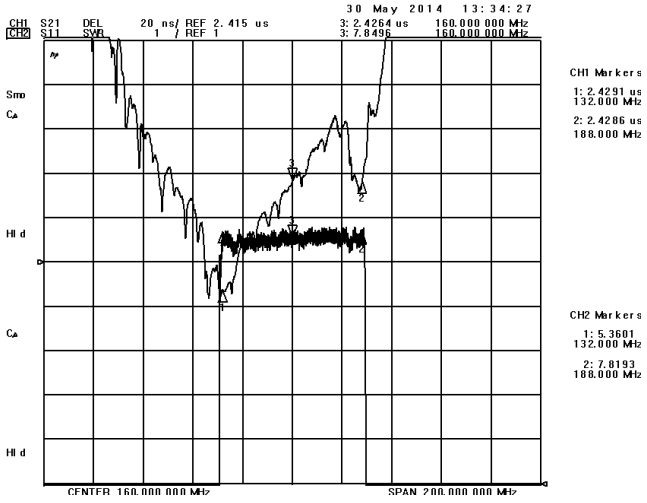
Frequency Response



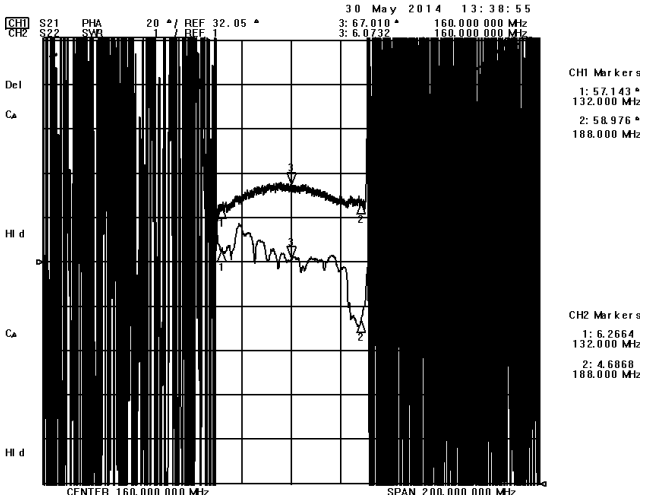

Frequency Response（wideband）



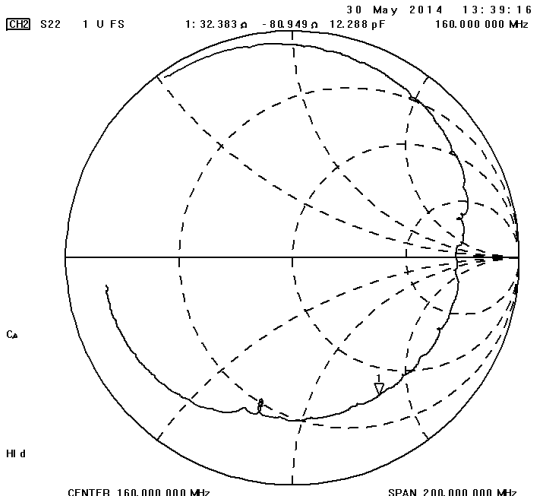

Delay Ripple & S11 VSWR



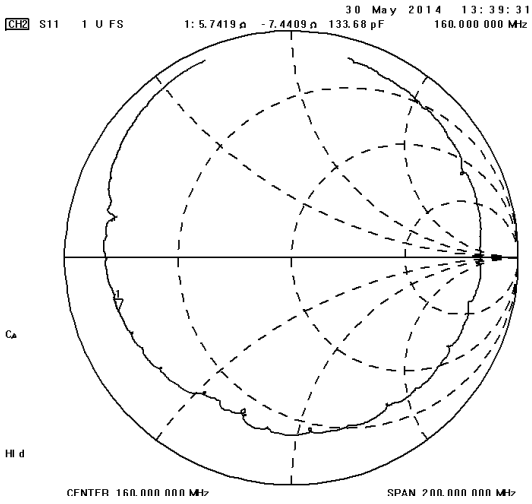

Phase Linearity & S22 VSWR




S11 Smith Chart



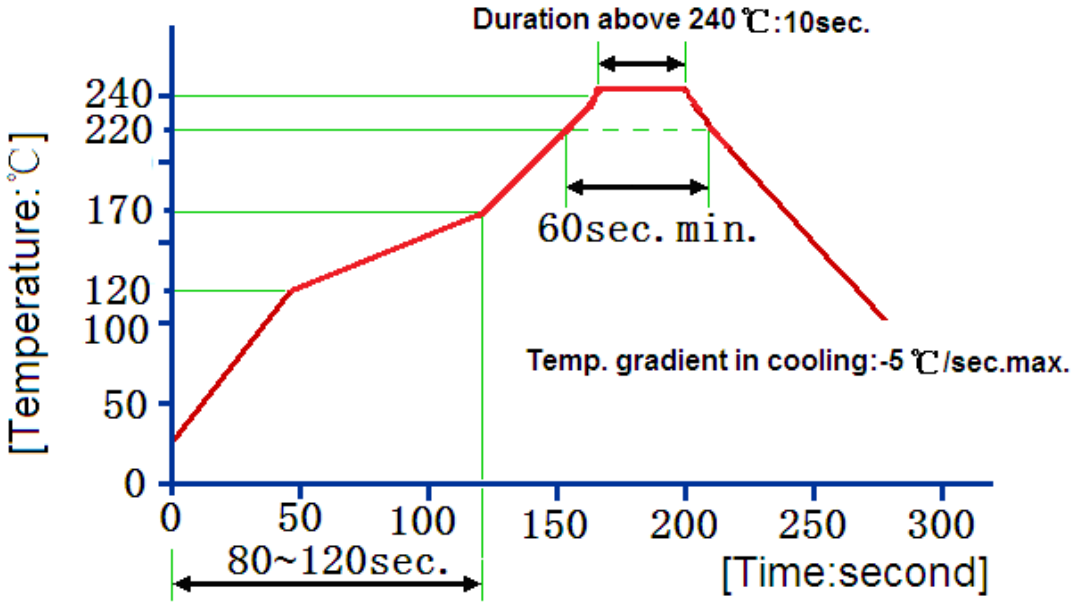

S22 Smith Chart



**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.