



# APPROVAL SHEET

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

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

Tel: +86-010-58937383  
 Fax: +86-010-58937263  
 E-mail: [bjzxsf@bjzxsf.net](mailto: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

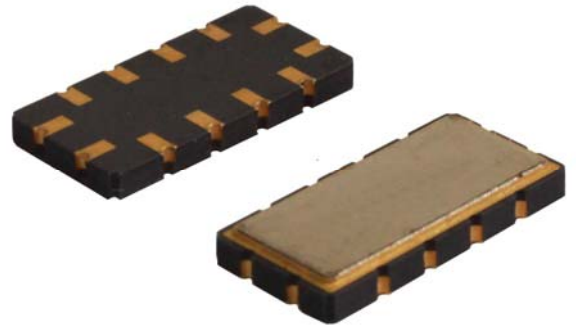


|          |   |          |
|----------|---|----------|
| Part No. | : | SF1507   |
| Pages    | : | 6        |
| Date     | : | 2015/5/8 |
| Revision | : | 1.0      |

|                     |    |
|---------------------|----|
| <b>Prepared by:</b> | 梁浩 |
| <b>Checked by:</b>  |    |
| <b>Approved by:</b> |    |

**Application**

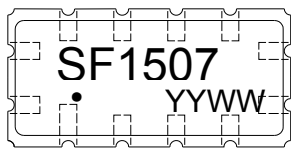
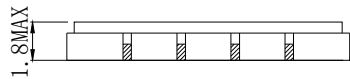
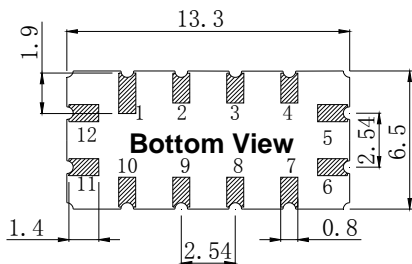
- Low -loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Passband 42 MHz
- Low Shape factor



**Features**

- Ceramic Package for **Surface Mounted Technology (SMT)**
- **RoHS** compatible
- Package size 13.30x6.50x1.80mm<sup>3</sup>
- Package Code QCC12
- **Electrostatic Sensitive Device(ESD)**

**Package Dimensions (Unit: mm)**



**Pin Configuration**

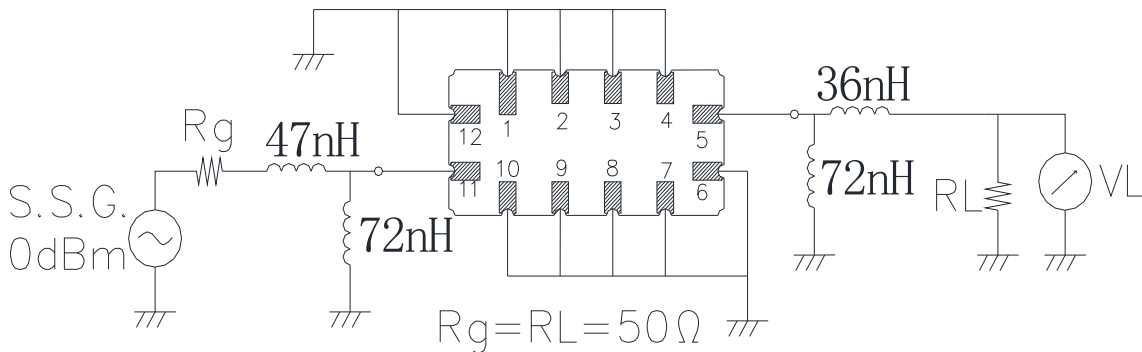
| Pin No.               | Description |
|-----------------------|-------------|
| 11                    | Input       |
| 5                     | Output      |
| 1,2,3,4,6,7,8,9,10,12 | Ground      |

**Marking Description**

|             |                       |
|-------------|-----------------------|
| <b>S</b>    | Trademark             |
| <b>F</b>    | SAW Filter            |
| <b>1507</b> | Part Number           |
| ●           | Pin 1                 |
| <b>YYWW</b> | Year Code & Week Code |

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

**Test Circuit(Bottom View)**



**Performance****Maximum Rating**

| Item                  |                  | Value     | Unit |
|-----------------------|------------------|-----------|------|
| DC Voltage            | V <sub>DC</sub>  | 3         | V    |
| Operation Temperature | T                | -40 ~ +85 | °C   |
| Storage Temperature   | T <sub>stg</sub> | -40 ~ +85 | °C   |
| RF Power Dissipation  | P                | 10        | dBm  |

**Electronic Characteristics**

Test Temperature: 25°C ± 2°C

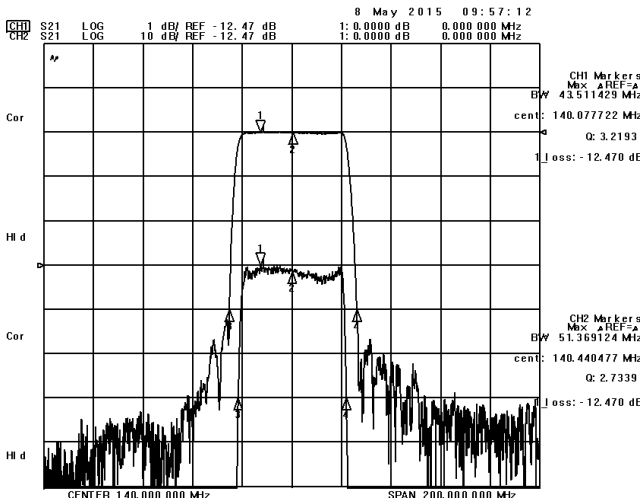
Terminating source impedance: 50Ω

Terminating load impedance: 50Ω

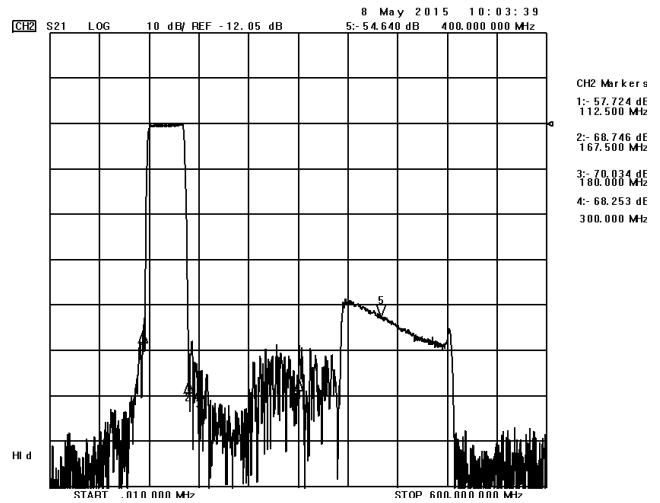
| Item                                       |                    | Minimum | Typical | Maximum | Unit |
|--|--------------------|---------|---------|---------|------|
| Center Frequency                           | f <sub>c</sub>     |         | 140.0   |         | MHz  |
| Insertion Loss(min)                        | IL                 |         | 12.5    | 16.0    | dB   |
| Amplitude Ripple (p-p)<br>120.00-160.00MHz | Δα                 |         | 0.6     | 1.0     | dB   |
| 3 dB Bandwidth                             | BW <sub>3dB</sub>  | 42.0    | 43.5    |         | MHz  |
| 40 dB Bandwidth                            | BW <sub>40dB</sub> |         | 51.4    | 53.0    | MHz  |
| Absolute Attenuation                       | α                  |         |         |         |      |
|  | DC-100.00MHz       | 40.0    | 50.0    |         | dB   |
|  | 112.50MHz          | 40.0    | 45.0    |         | dB   |
|  | 167.50MHz          | 40.0    | 55.0    |         | dB   |
|  | 180.00-300.00MHz   | 40.0    | 46.0    |         | dB   |
|  | 300.00-400.00MHz   | 30.0    | 37.0    |         | dB   |
| Input VSWR                                 | 119.00-161.00MHz   |         | 3.0:1   | 5.0:1   | /    |
| Output VSWR                                | 119.00-161.00MHz   |         | 4.6:1   | 5.0:1   | /    |

Frequency Characteristics

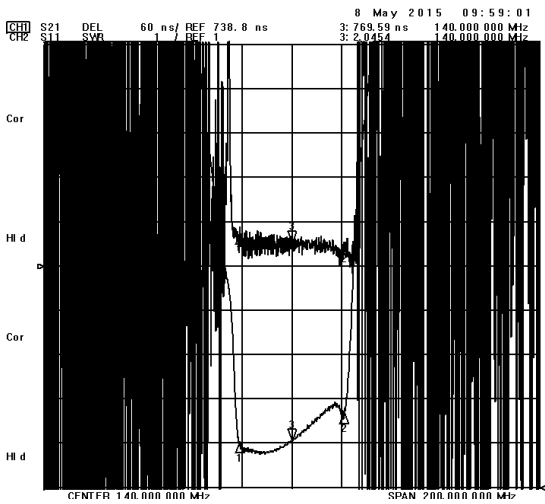
Frequency Response



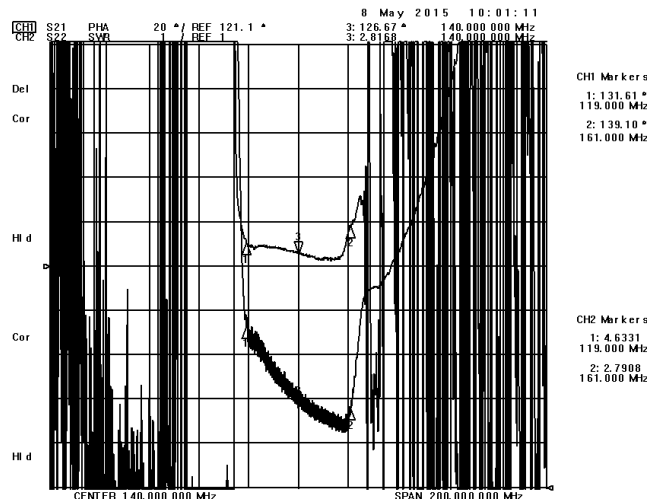
Frequency Response (wideband)



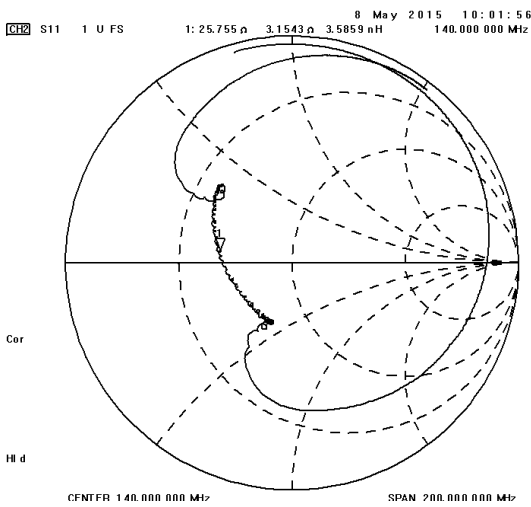
Delay Ripple & S11 VSWR



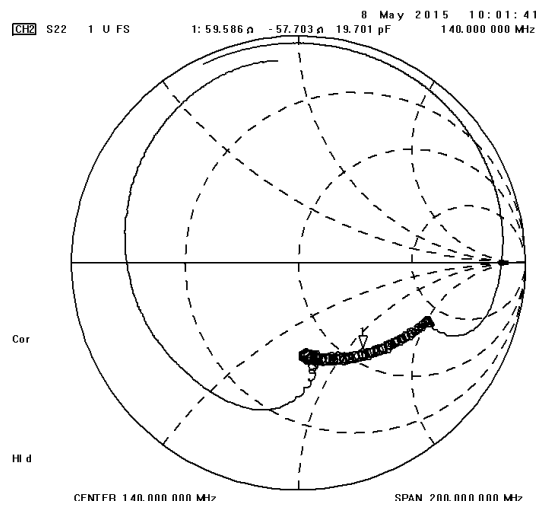
Phase Linearity & S22 VSWR



S11 Smith Chart



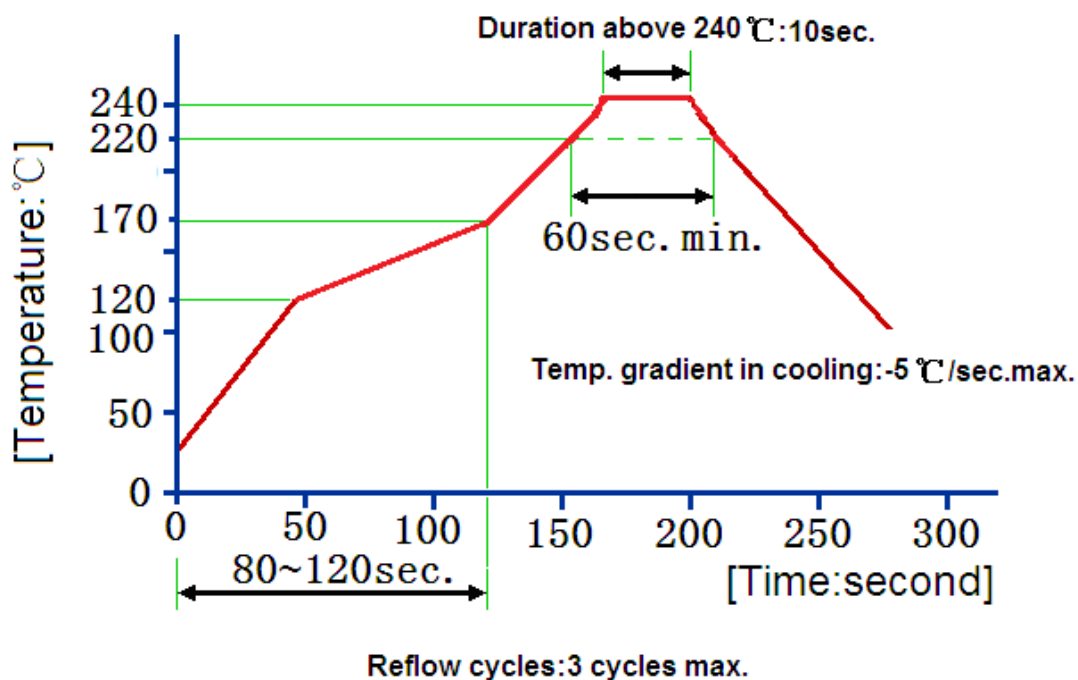
S22 Smith Chart



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

| No. | Test item                    | Test condition  |
|-----|------------------------------|---|
| 1   | Temperature Storage          | (1) Temperature: $85^{\circ}\text{C}\pm 2^{\circ}\text{C}$ , Duration: 250h , Recovery time: $2\text{h}\pm 0.5\text{h}$<br>(2) Temperature: $-55^{\circ}\text{C}\pm 3^{\circ}\text{C}$ , Duration: 250h ,Recovery time: $2\text{h}\pm 0.5\text{h}$                |
| 2   | Humidity Test                | Conditions: $60^{\circ}\text{C}\pm 2^{\circ}\text{C}$ , 90~95% RH                      Duration: 250h   |
| 3   | Thermal Shock                | Heat cycle conditions: $\text{TA}=-55^{\circ}\text{C}\pm 3^{\circ}\text{C}$ , $\text{TB}=85^{\circ}\text{C}\pm 2^{\circ}\text{C}$ , $t_1=t_2=30\text{min}$ , Switch time: $\leq 3\text{min}$ , Cycle time: 100 times, Recovery time: $2\text{h}\pm 0.5\text{h}$ . |
| 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: $245^{\circ}\text{C}\pm 5^{\circ}\text{C}$ 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: $260^{\circ}\text{C}\pm 5^{\circ}\text{C}$ , Duration: $10\pm 1\text{s}$<br>(2)Temperature of Soldering Iron: $350^{\circ}\text{C}\pm 10^{\circ}\text{C}$ , Duration: 3~4s ,<br>Recovery time : $2 \pm 0.5\text{h}$  |

## Recommended Reflow Soldering Diagram



**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.