



# APPROVAL SHEET

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

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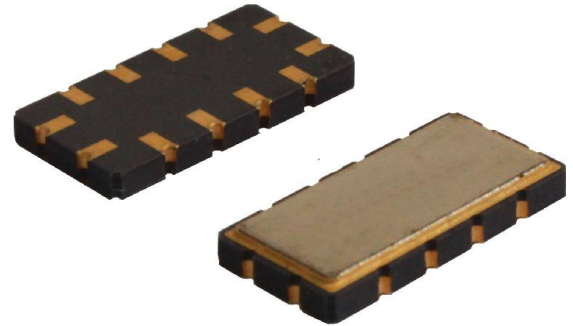


|          |   |           |
|----------|---|-----------|
| Part No. | : | SF1512    |
| Pages    | : | 6         |
| Date     | : | 2016/9/23 |
| Revision | : | 1.0       |

|                     |     |
|---------------------|-----|
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| <b>Checked by:</b>  | 卢翠  |
| <b>Approved by:</b> | 刘建伟 |

**Application**

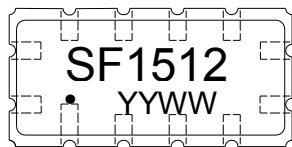
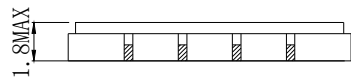
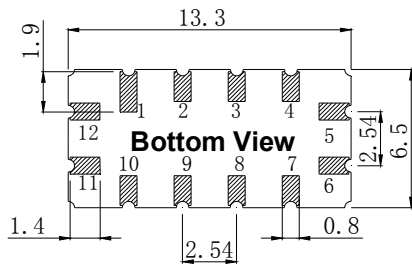
- Low -loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Passband 0.45 MHz



**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**

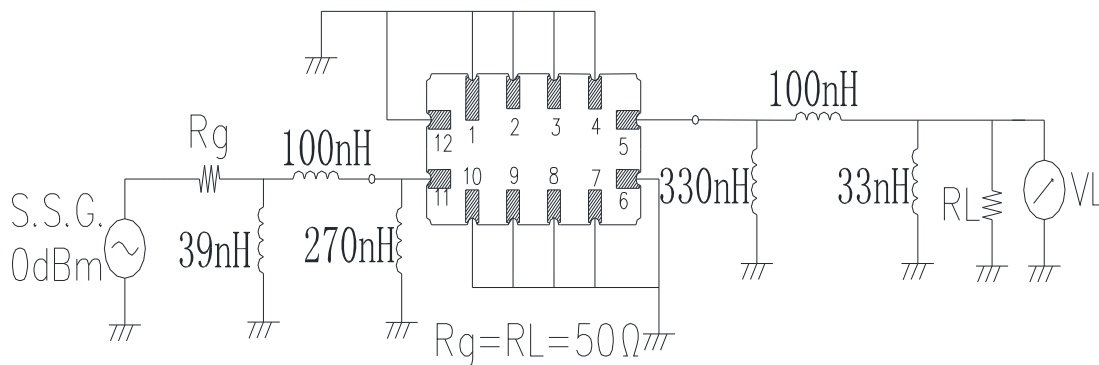
| Pin No.               | Description |
|-----------------------|-------------|
| 11                    | Input       |
| 5                     | Output      |
| 1,2,3,4,6,7,8,9,10,12 | Ground      |

**Marking Description**

|             |                       |
|-------------|-----------------------|
| <b>S</b>    | Trademark             |
| <b>F</b>    | SAW Filter            |
| <b>1512</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                | -55 ~ +85  | °C   |
| Storage Temperature   | T <sub>stg</sub> | -55 ~ +125 | °C   |
| RF Power Dissipation  | P                | 10         | dBm  |

**Electronic Characteristics**

Test Temperature: 25°C ± 2°C

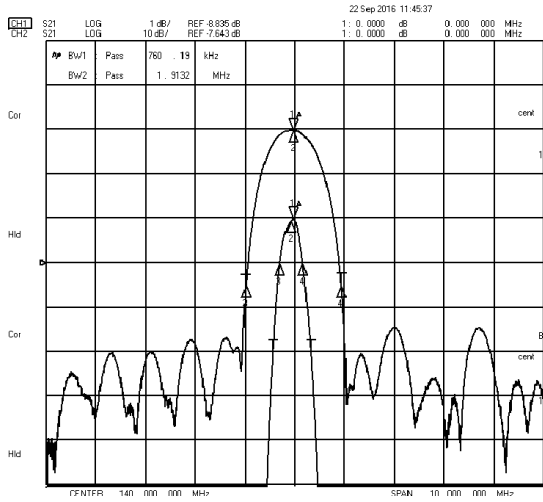
Terminating source impedance: 50Ω

Terminating load impedance: 50Ω

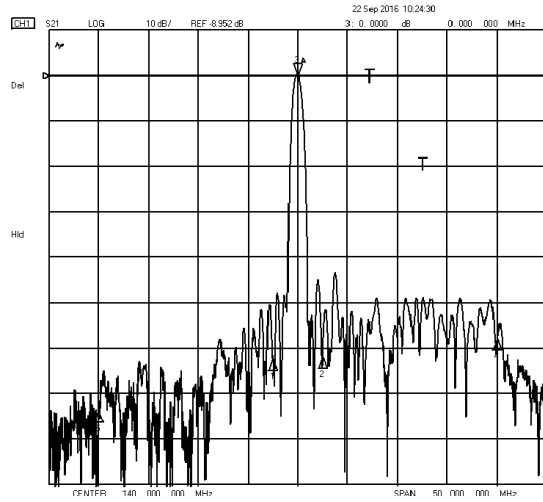
| Item                   |                    | Minimum | Typical | Maximum | Unit |
|------------------------|--------------------|---------|---------|---------|------|
| Center Frequency       | f <sub>c</sub>     | 139.90  | 140.00  | 140.10  | MHz  |
| Insertion Loss(min)    | IL                 |         | 7.9     | 12.0    | dB   |
| Amplitude Ripple (p-p) | Δα                 |         | 0.3     | 0.6     | dB   |
| 1 dB Bandwidth         | BW <sub>1dB</sub>  | 0.45    | 0.46    |         | MHz  |
| 3dB Bandwidth          | BW <sub>3dB</sub>  |         | 0.76    |         | MHz  |
| 35dB Bandwidth         | BW <sub>35dB</sub> |         | 1.91    | 2.10    | MHz  |
| Absolute Delay         | AD                 |         | 1.37    |         | us   |
| Group Delay Ripple     | GDR                |         | 180     | 200     | ns   |
| Phase Linearity        |                    |         | 2.5     | 4.0     | deg  |
| Absolute Attenuation   | α                  |         |         |         |      |
|                        | 137.50MHz          | 37      | 45      |         | dB   |
|                        | 142.50MHz          | 37      | 40      |         | dB   |
|                        | 120.00MHz          | 40      | 60      |         | dB   |
|                        | 160.00 MHz         | 40      | 45      |         | dB   |

Frequency Characteristics

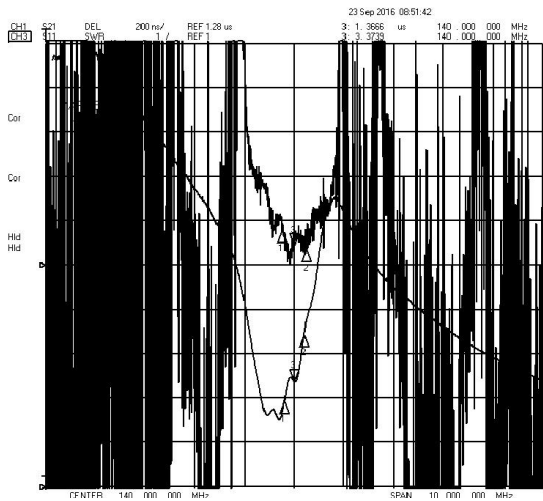
Frequency Response



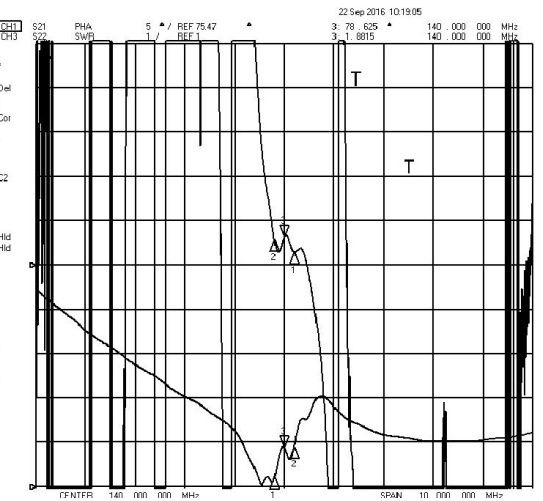
Frequency Response (wideband)



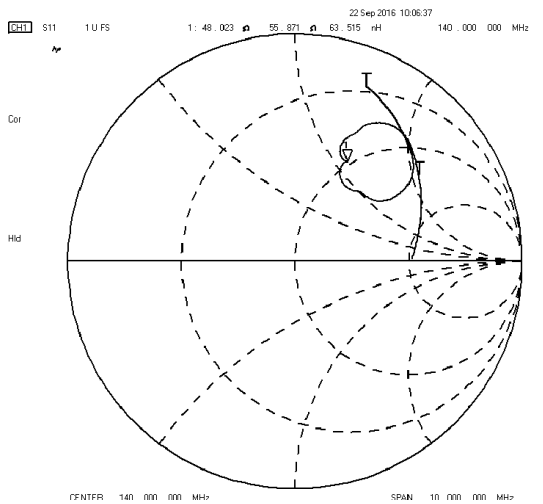
Delay Ripple & S11 VSWR



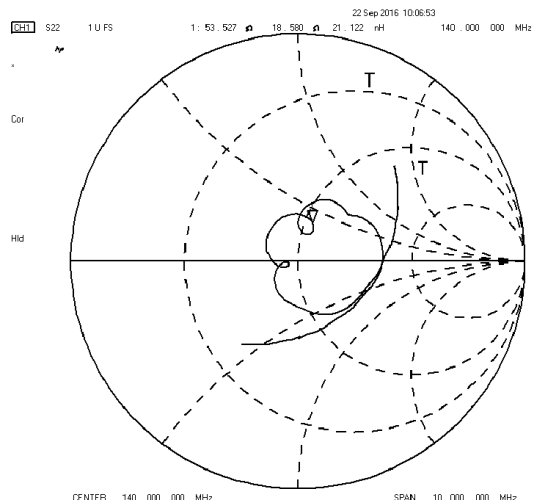
Phase Linearity & S22 VSWR



S11 Smith Chart



S22 Smith Chart





**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.