



# 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> |

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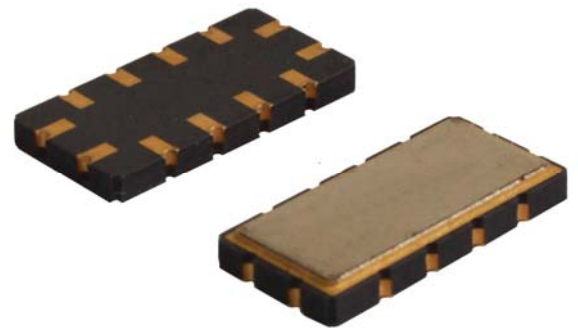


|          |   |          |
|----------|---|----------|
| Part No. | : | SF0210   |
| Pages    | : | 6        |
| Date     | : | 2013/3/5 |
| Revision | : | 1.0      |

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

**Application**

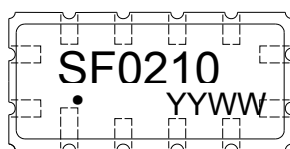
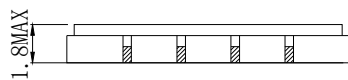
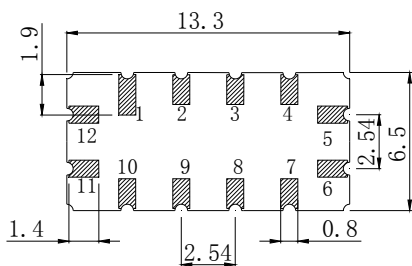
- Low-loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Usable passband 5 MHz



**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**

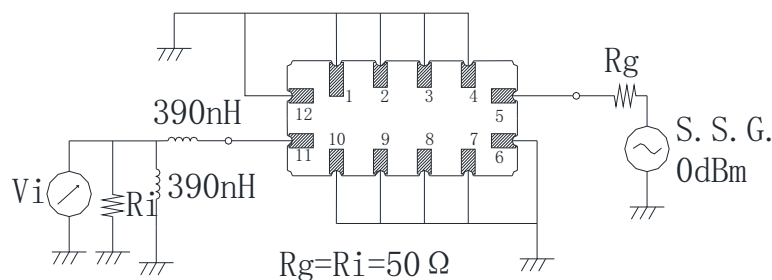
| Pin No.               | Description |
|-----------------------|-------------|
| 5                     | Input       |
| 11                    | Output      |
| 1,2,3,4,6,7,8,9,10,12 | Ground      |

**Marking Description**

|             |                       |
|-------------|-----------------------|
| <b>S</b>    | Trademark             |
| <b>F</b>    | SAW Filter            |
| <b>0210</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**



**Performance****Maximum Rating**

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

**Electronic Characteristics**

Test Temperature:  $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$

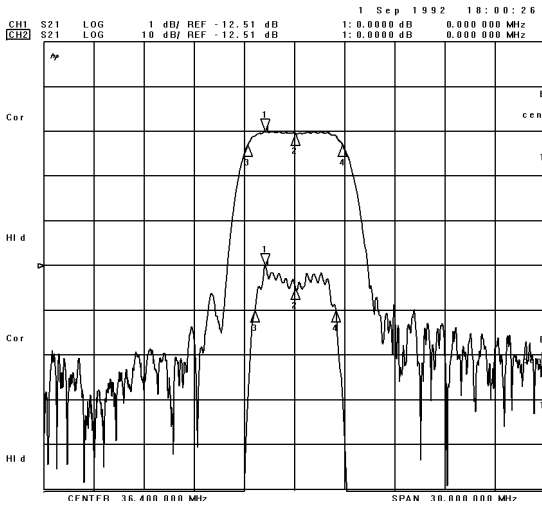
Terminating source impedance:  $50\Omega$

Terminating load impedance:  $50\Omega$

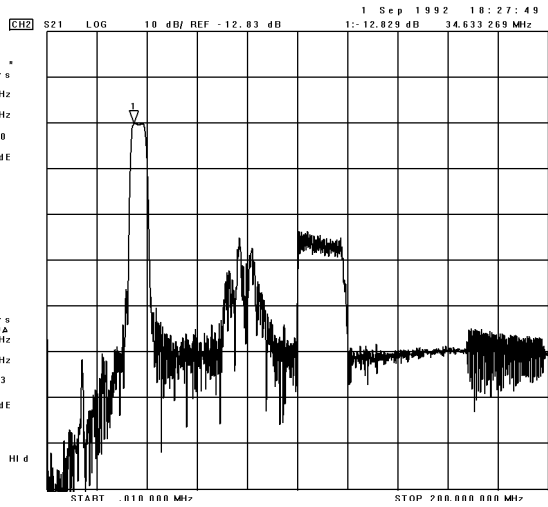
| Item                                      |                 | Minimum | Typical | Maximum | Unit |
|---|-----------------|---------|---------|---------|------|
| Center Frequency                          | $f_c$           | 36.3    | 36.4    | 36.5    | MHz  |
| Insertion Loss(min)                       | IL              |         | 12.5    | 15.0    | dB   |
| Amplitude Ripple (p-p)<br>34.40-38.40 MHz | $\Delta\alpha$  |         | 0.5     | 1.0     | dB   |
| 1 dB Bandwidth                            | $BW_{1dB}$      | 4.5     | 4.8     |         | MHz  |
| Absolute Attenuation                      | $\alpha$        |         |         |         |      |
|   | DC -31.00 MHz   | 35.0    | 36.0    |         | dB   |
|   | 43.00-66.00 MHz | 35.0    | 37.0    |         | dB   |

Frequency Characteristics

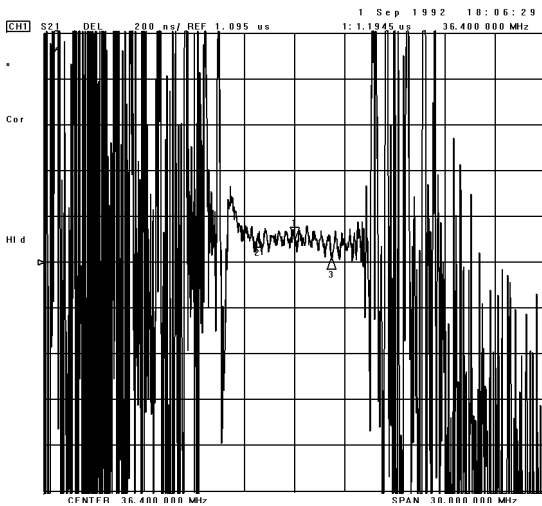
Frequency Response



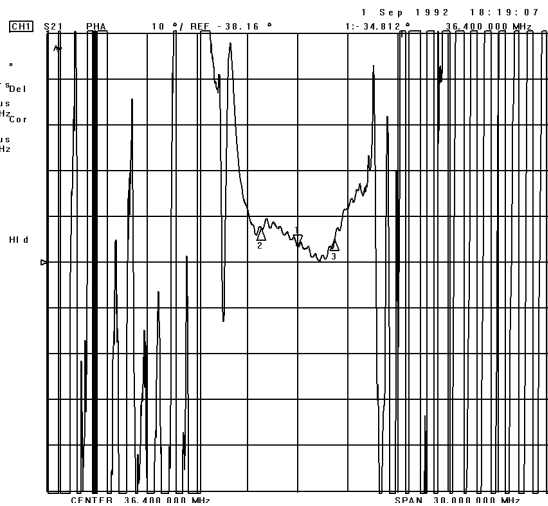
Frequency Response (wideband)



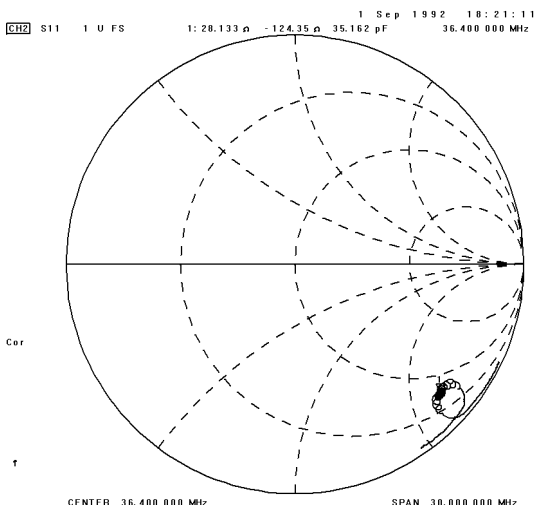
Delay Ripple & S11 VSWR



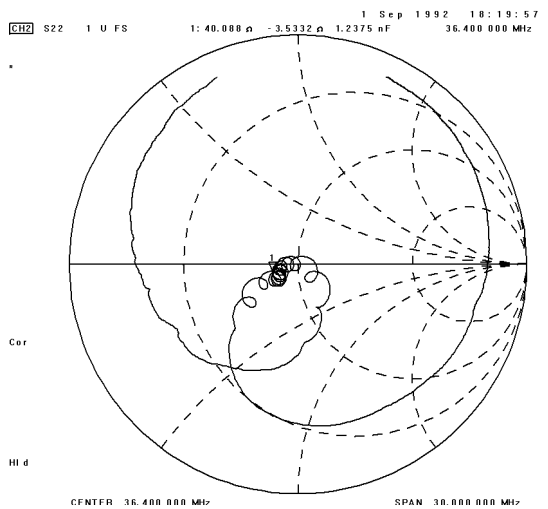
Phase Linearity & S22 VSWR



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.