



APPROVAL SHEET

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

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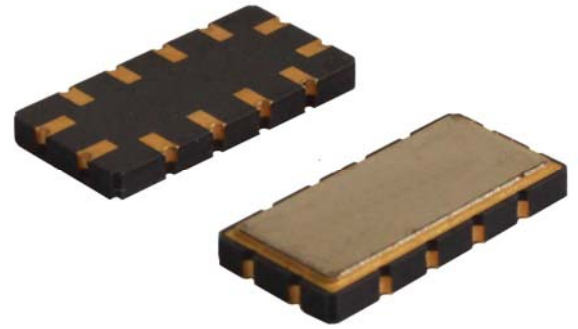


Part No.	:	SF0413
Pages	:	6
Date	:	2014/05/22
Revision	:	1.0

Prepared by:	梁浩
Checked by:	
Approved by:	

Application

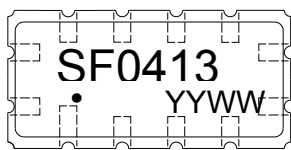
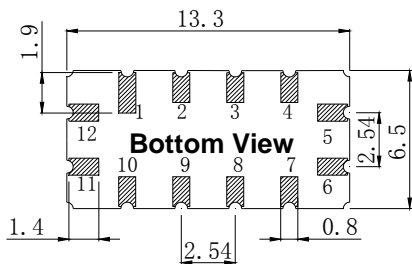
- Low-loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Usable passband 0.55 MHz



Features

- Ceramic Package for **Surface Mounted Technology (SMT)**
- **RoHS** compatible
- Package size 13.30x6.50x1.80mm³
- Package Code QCC12
- **Electrostatic Sensitive Device(ESD)**

Package Dimensions (Unit: mm)



Pin Configuration

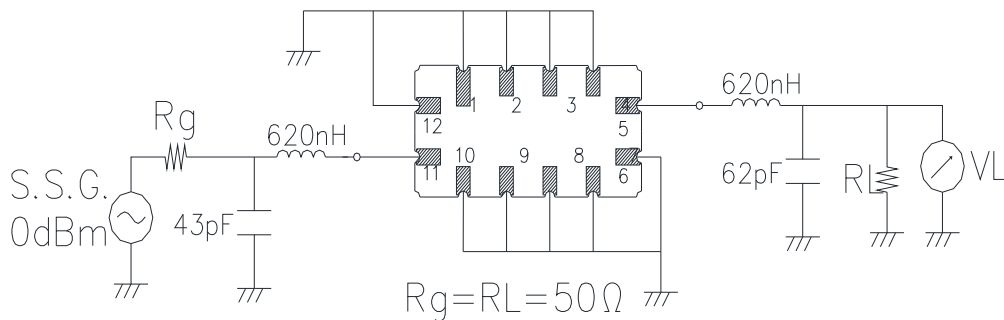
Pin No.	Description
11	Input
5	Output
1,2,3,4,6,7,8,9,10,12	Ground

Marking Description

S	Trademark
F	SAW Filter
0413	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	-45 ~ +85	°C
Storage Temperature	T_{stg}	-55 ~ +125	°C
RF Power Dissipation	P	10	dBm

Electronic Characteristics

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

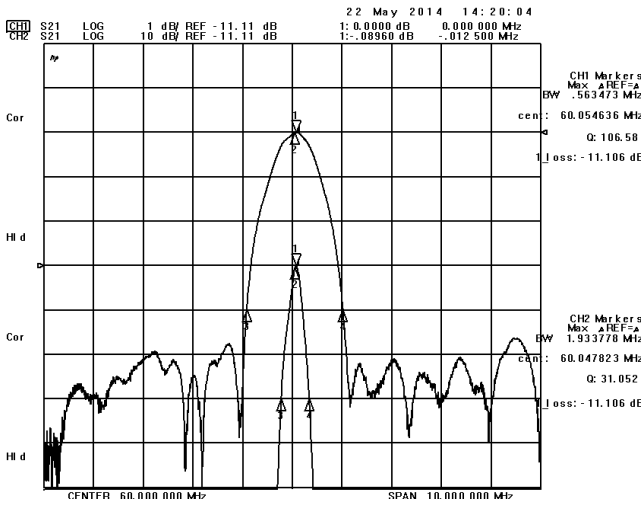
Terminating source impedance: 50Ω

Terminating load impedance: 50Ω

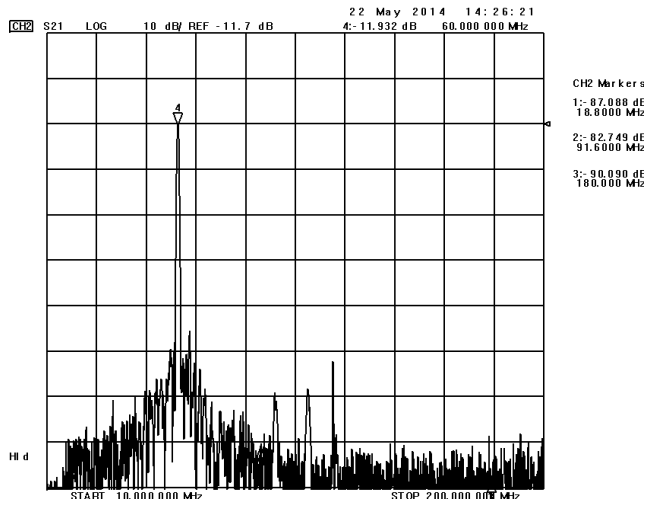
Item		Minimum	Typical	Maximum	Unit
Center Frequency	f_c	59.9	60.0	60.1	MHz
Insertion Loss	IL		11.5	12.0	dB
Amplitude Ripple	Δa		0.3	1.0	dB
3 dB Bandwidth	BW_{3dB}	0.55	0.58		MHz
40 dB Bandwidth	BW_{40dB}		2.0	3.0	MHz
Absolute Attenuation	a				
	18.80 MHz	50.0	60.0		dB
	91.60 MHz	50.0	72.0		dB
	180.00 MHz	50.0	80.0		dB
Input VSWR	59.725-60.275MHz		2.5:1	3.0:1	/
Output VSWR	59.725-60.275MHz		2.0:1	3.0:1	/

Frequency Characteristics

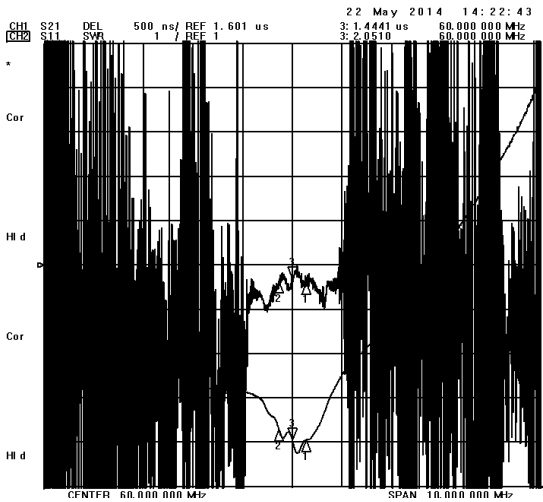
Frequency Response



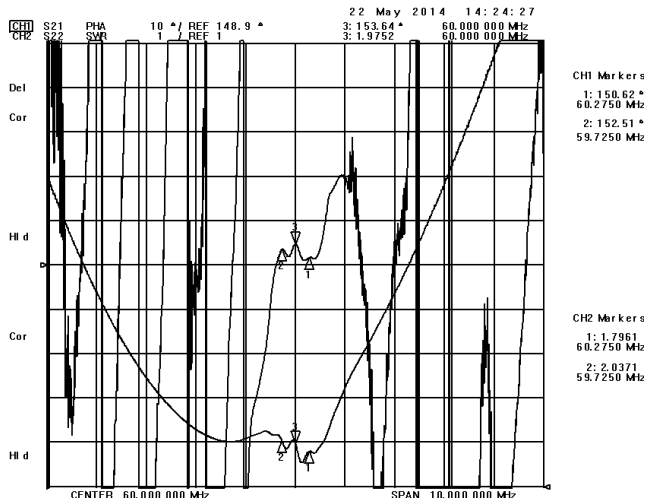
Frequency Response (wideband)



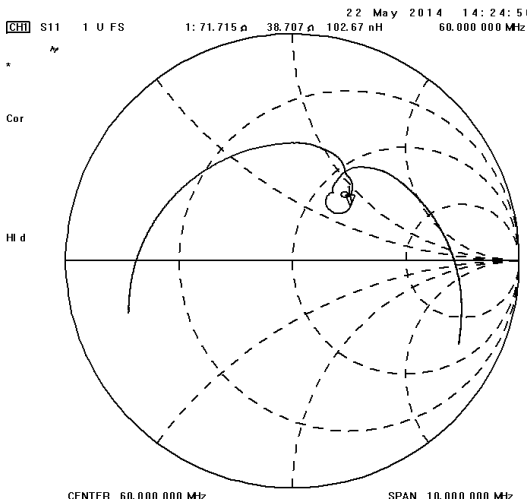
Delay Ripple & S11 VSWR



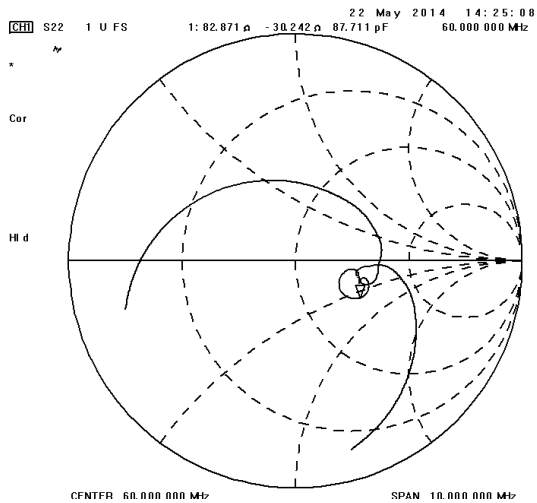
Phase Linearity & S22 VSWR



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.