

# APPROVAL SHEET

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

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



Prepared by:	
Checked by:	
Approved by:	

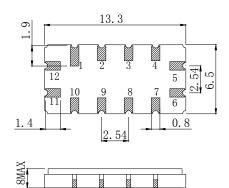
# **Application**

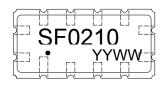
- Low-loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Usable passband 5 MHz

#### **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

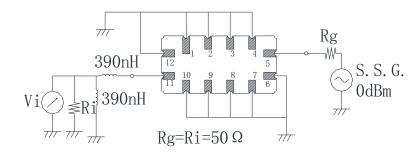
Pin No.	Description
5	Input
11	Output
1,2,3,4,6,7,8,9,10,12	Ground

# **Marking Description**

S	Trademark	
F	SAW Filter	
0210	Part Number	
•	Pin 1	
YYWW	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**



Please read notes at the end of this document.

# **Performance**

# **Maximum Rating**

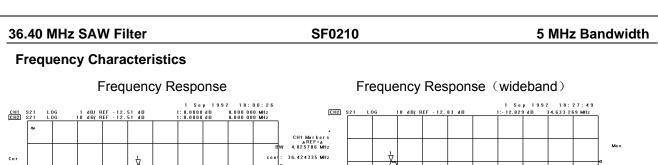
Item		Value	Unit
DC Voltage	V <sub>DC</sub>	3	V
Operation Temperature	Т	-40 ~ +85	${\mathbb C}$
Storage Temperature	T <sub>stg</sub>	-55 ~ +125	${\mathbb C}$
RF Power Dissipation	Р	10	dBm

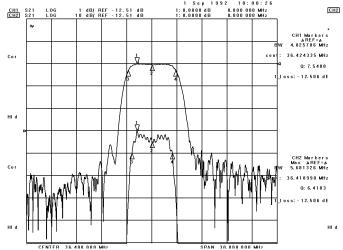
#### **Electronic Characteristics**

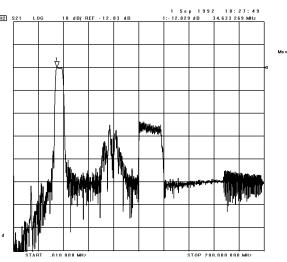
Test Temperature:  $25^{\circ}C \pm 2^{\circ}C$ 

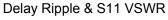
Terminating source impedance:  $50\Omega$  Terminating load impedance:  $50\Omega$ 

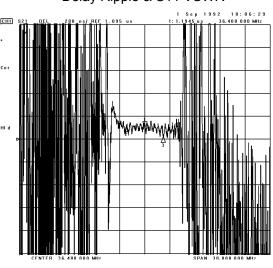
ltem		Minimum	Typical	Maximum	Unit
Center Frequency	fc	36.3	36.4	36.5	MHz
Insertion Loss(min)	IL		12.5	15.0	dB
Amplitude Ripple (p-p) 34.40-38.40 MHz	∆a		0.5	1.0	dB
1 dB Bandwidth	BW <sub>1dB</sub>	4.5	4.8		MHz
Absolute Attenuation	а				
DC -31.00 MHz		35.0	36.0		dB
43.00-66.00 MHz		35.0	37.0		dB



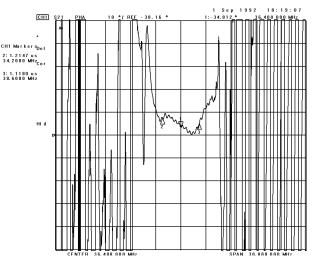




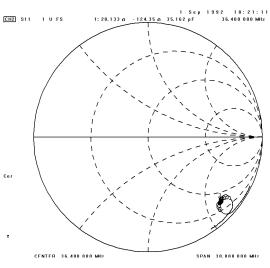




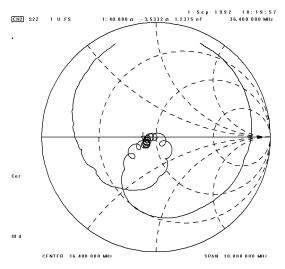
Phase Linearity & S22 VSWR



S11 Smith Chart



S22 Smith Chart



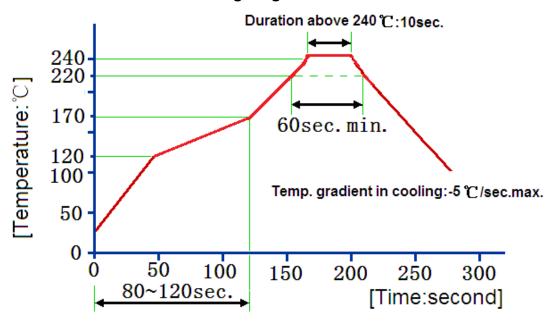
2:- 30.686 ° 34.2000 MHz

3:- 33.051 \* 38.6000 MHz

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

No.	Test item	Test condition		
4	Temperature	(1) Temperature: 85℃±2℃, Duration: 250h, Recovery time: 2h±0.5h		
1	Storage	(2) Temperature: –55°C±3°C , Duration: 250h ,Recovery time: 2h±0.5h		
2	Humidity Test	Conditions: 60℃±2℃ , 90~95% RH		
3	Thermal Shock	Heat cycle conditions: TA=-55℃±3℃, TB=85℃±2℃, t1=t2=30min, Switch		
3	THEITIAI SHOCK	time: ≤3min, Cycle time: 100 times, Recovery time: 2h±0.5h.		
4	Vibration Fatigue	Frequency of vibration: 10~55Hz Amplitude:1.5mm		
_	Vibration Latigue	Directions: X,Y and Z Duration: 2h		
5	Drop Test	Cycle time: 10 times Height: 1.0m		
		Temperature: 245 ℃ ±5 ℃ Duration: 3.0s5.0s		
6	Solder Ability Test	Depth: DIP2/3 , SMD1/5		
		(1)Thickness of PCB:1mm , Solder condition: 260 ℃±5 ℃ , Duration: 10±1s		
7	Resistance to Soldering Heat	(2)Temperature of Soldering Iron: 350 ℃±10 ℃ , Duration: 3~4s ,		
		Recovery time: 2 ± 0.5h		

# **Recommended Reflow Soldering Diagram**



Reflow cycles:3 cycles max.

36.40 MHz SAW Filter SF0210 5 MHz Bandwidth

#### **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.