



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.	:	SF0220
Pages	:	6
Date	:	2013/4/1
Revision	:	1.0

Prepared by:	
Checked by:	
Approved by:	

Application

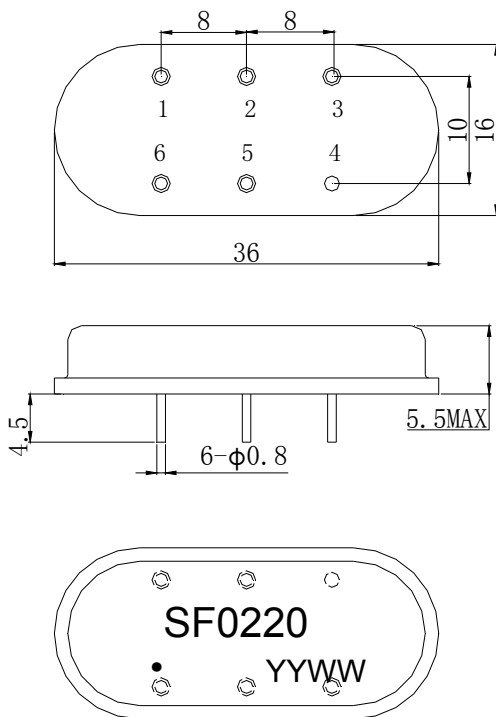
- Low amplitude ripple
- Sharp rejections at both out-bands
- Usable passband 220 KHz

Features

- **RoHS** compatible
- Package size 36.0x16.0x5.50mm³
- Package Code SB01-01
- Electrostatic Sensitive Device(**ESD**)



Package Dimensions (Unit: mm)



Pin Configuration

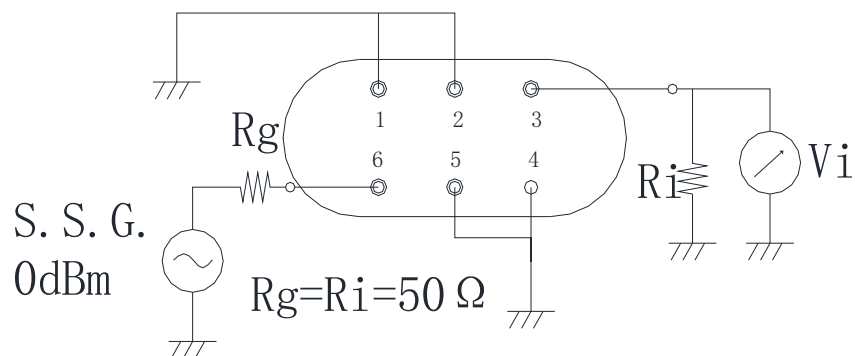
Pin No.	Description
6	Input
3	Output
1,2,4,5	Ground

Marking Description

S	Trademark
F	SAW Filter
0220	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



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

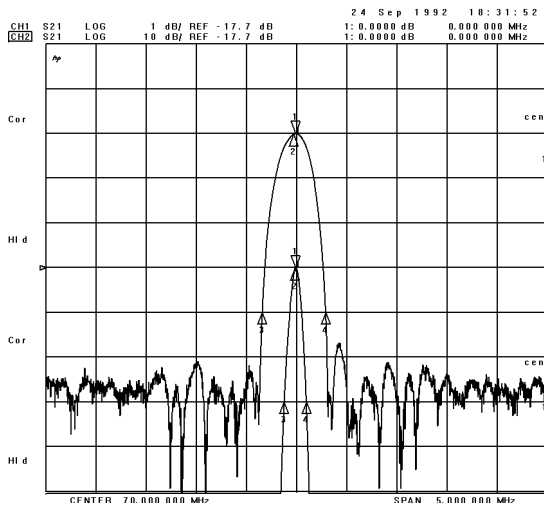
Terminating source impedance: 50Ω

Terminating load impedance: 50Ω

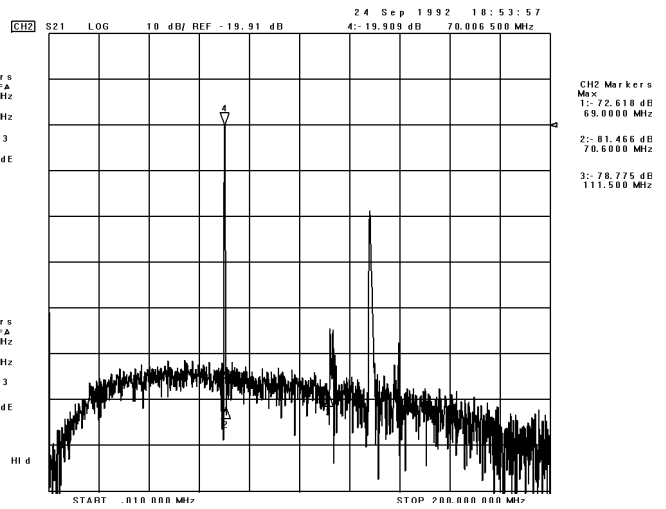
Item		Minimum	Typical	Maximum	Unit
Center Frequency	f_c	69.9	70.0	70.1	MHz
Insertion Loss(min)	IL		17.7	19.0	dB
Amplitude Ripple (p-p)	Δa		0.3	0.5	dB
3 dB Bandwidth	BW_{3dB}	220.0	230.0		KHz
40 dB Bandwidth	BW_{40dB}		630.0	650.0	KHz
Absolute Attenuation	a				
	DC -69.00 MHz	45.0	50.0		dB
	71.00-100.00MHz	45.0	50.0		dB

Frequency Characteristics

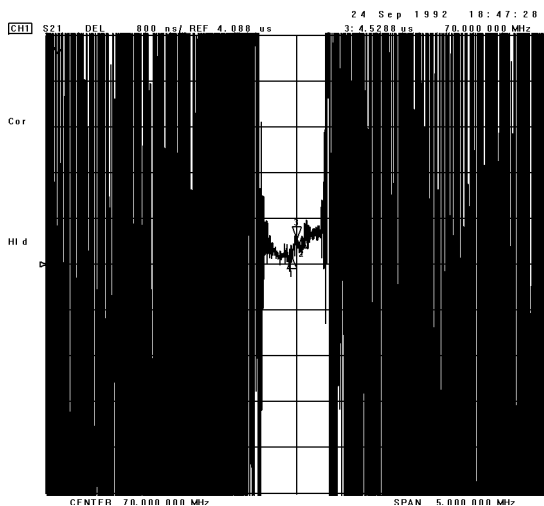
Frequency Response



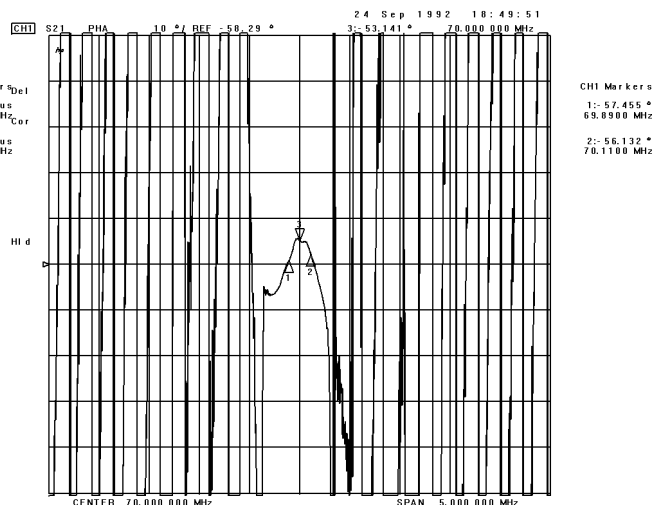
Frequency Response (wideband)



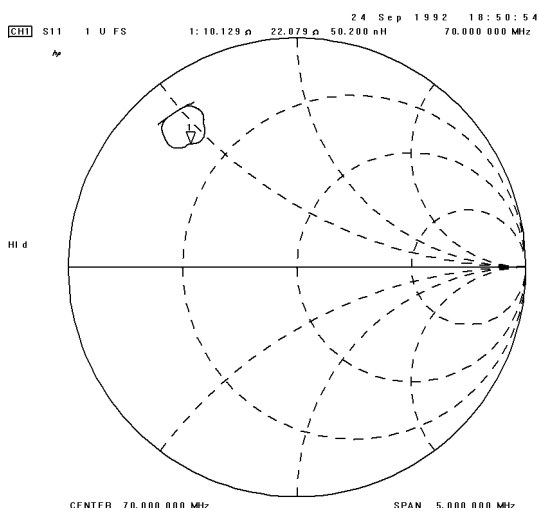
Delay Ripple



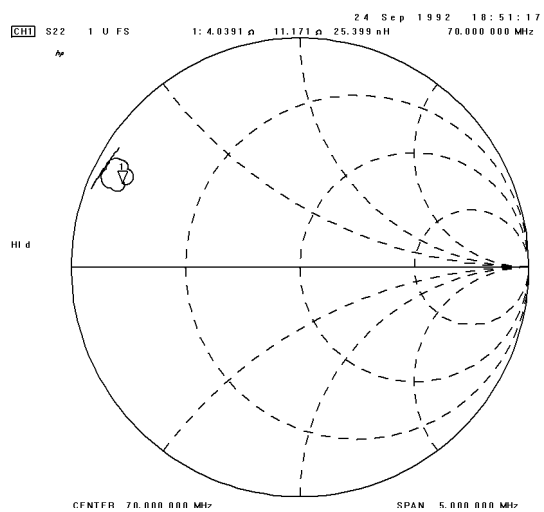
Phase Linearity



S11 Smith Chart

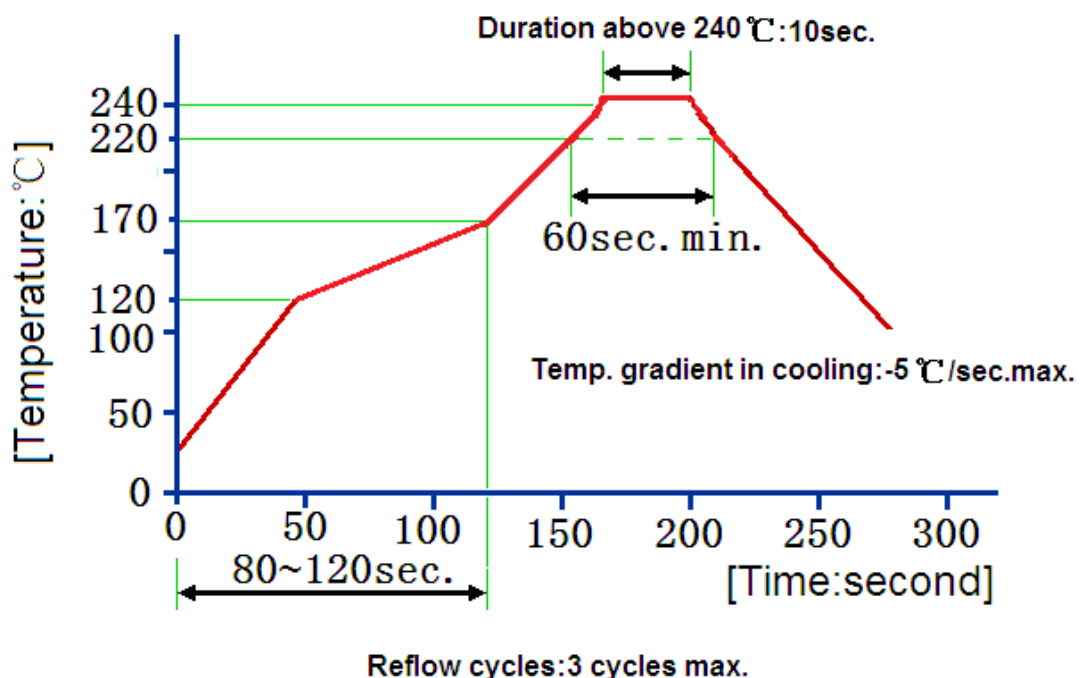


S22 Smith Chart



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: 2h \pm 0.5h (2) Temperature: $-55^{\circ}\text{C}\pm 3^{\circ}\text{C}$, Duration: 250h , Recovery time: 2h \pm 0.5h
2	Humidity Test	Conditions: $60^{\circ}\text{C}\pm 2^{\circ}\text{C}$, 90~95% RH Duration: 250h
3	Thermal Shock	Heat cycle conditions: TA= $-55^{\circ}\text{C}\pm 3^{\circ}\text{C}$, TB= $85^{\circ}\text{C}\pm 2^{\circ}\text{C}$, t1=t2=30min, Switch time: \leq 3min, Cycle time: 100 times, Recovery time: 2h \pm 0.5h.
4	Vibration Fatigue	Frequency of vibration: 10~55Hz Amplitude:1.5mm 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 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 1s (2)Temperature of Soldering Iron: $350^{\circ}\text{C}\pm 10^{\circ}\text{C}$, Duration: 3~4s , 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.