

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.	:	SF0223
Pages	:	6
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Revision	:	1.0



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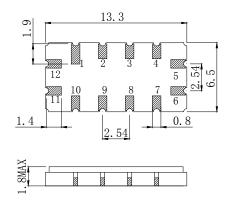
Application

- Low-loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Usable passband 8 MHz

Features

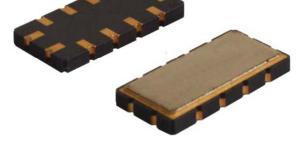
- Ceramic Package for Surface Mounted Technology (SMT)
- RoHS compatible
- Package size 13.30x6.50x1.80mm³
- Package Code QCC12
- Electrostatic Sensitive Device(ESD)

Package Dimensions (Unit: mm)





Test Circuit (Bottom View)



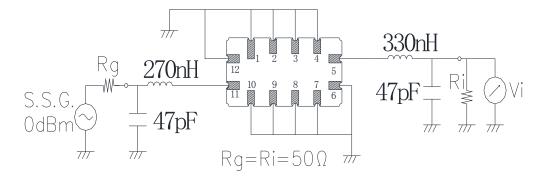
Pin Configuration

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	
0223	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.



Please read notes at the end of this document.

Performance

Maximum Rating

Item		Value	Unit
DC Voltage	V_{DC}	3	V
Operation Temperature	Т	-40 ~ +85	$^{\circ}$
Storage Temperature	T _{stg}	-55 ~ +125	$^{\circ}$
RF Power Dissipation	Р	10	dBm

Electronic Characteristics

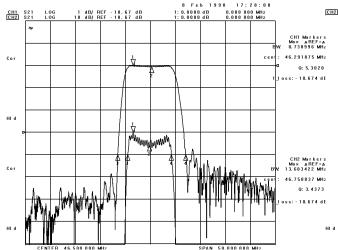
Test Temperature: $25^{\circ}C \pm 2^{\circ}C$

Terminating source impedance: 50Ω Terminating load impedance: 50Ω

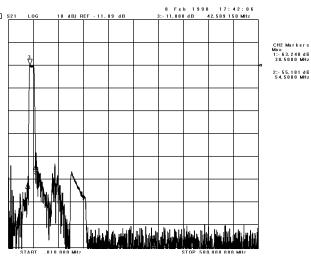
Item	Minimum	Typical	Maximum	Unit	
Center Frequency	fc		46.5		MHz
Insertion Loss(min)	IL		11.2	12.0	dB
Amplitude Ripple (p-p) 42.50-50.50MHz	Δa		0.9	1.5	dB
1 dB Bandwidth	BW _{1dB}	8.0	8.7		MHz
40 dB Bandwidth	BW _{40dB}		13.6	15.0	MHz
Absolute Attenuation	а				
DC -36.50 MHz		40.0	45.0		dB
56.50-500.00MHz		40.0	42.0		dB

Frequency Characteristics

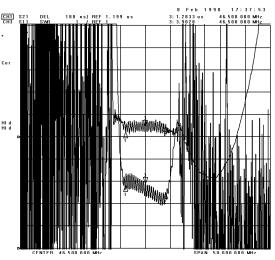
Frequency Response



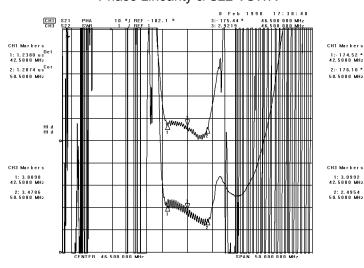
Frequency Response (wideband)



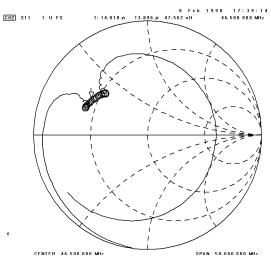
Delay Ripple & S11 VSWR



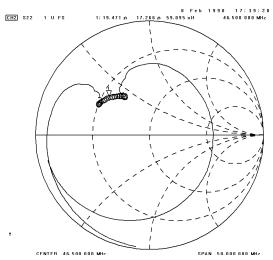
Phase Linearity & S22 VSWR



S11 Smith Chart



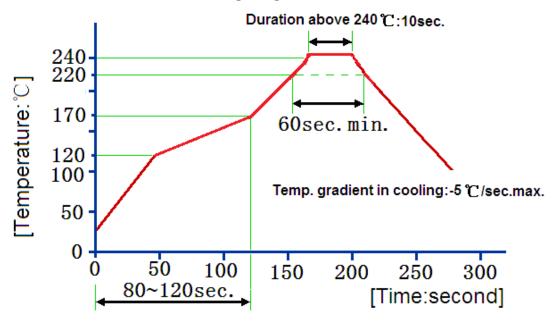
S22 Smith Chart



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 Duration: 250h			
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	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			
		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.

46.50MHz SAW Filter SF0223 8 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.