

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.	:	SF2223
Pages	:	6
Date	:	2014/5/15
Revision	:	1.0



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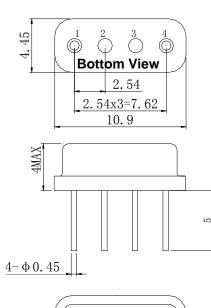
Application

- Low-loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Usable passband 5.0 MHz

Features

- **RoHS** compatible
- Package size 10.9x4.45x4.00mm³
- Package Code SC04-06
- Electrostatic Sensitive Device(ESD)

Package Dimensions (Unit: mm)



Pin Configuration

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

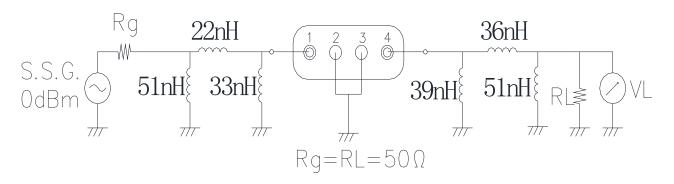
Marking Description

S	Trademark	
F	SAW Filter	
2223	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)

SF2223



Please read notes at the end of this document.

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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

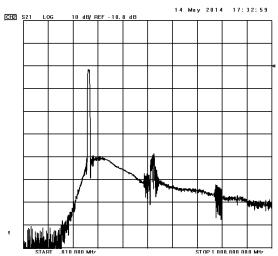
Item	Minimum	Typical	Maximum	Unit	
Center Frequency	fc		262.5		MHz
Insertion Loss	IL		11.0	12.0	dB
Amplitude Ripple (p-p) 259.70-265.30MHz	Δa		0.6	1.0	dB
1 dB Bandwidth	BW _{1dB}	5.0	6.9		MHz
45 dB Bandwidth	BW _{45dB}		13.2	14.0	MHz
Absolute Attenuation	а				
DC-252.50 MHz		40.0	45.0		dB
272.50-400.00 MHz		40.0	45.0		dB

Frequency Characteristics

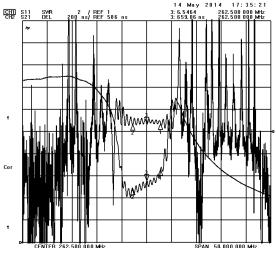
Frequency Response

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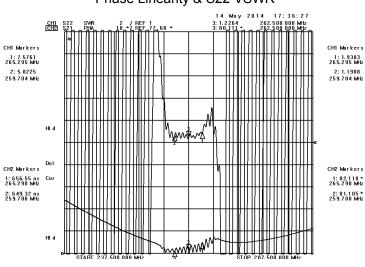
Frequency Response (wideband)



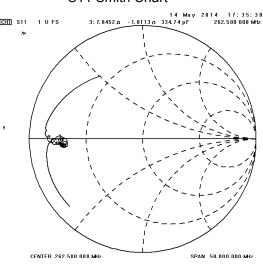
Delay Ripple & S11 VSWR



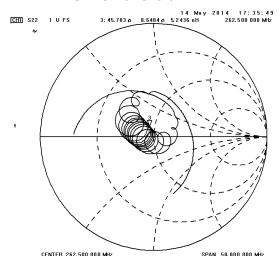
Phase Linearity & S22 VSWR



S11 Smith Chart



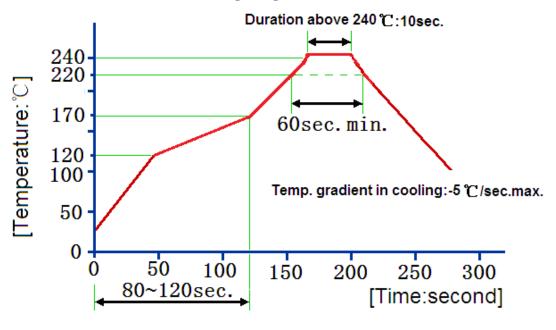
S22 Smith Chart



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		
ļ	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	Thermal Shock	time: ≤3min, Cycle time: 100 times, Recovery time: 2h±0.5h.		
1	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.

262.50MHz SAW Filter SF2223 5.00MHz 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.

Please read notes at the end of this document.