



# APPROVAL SHEET

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

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Part No.	:	SF0596
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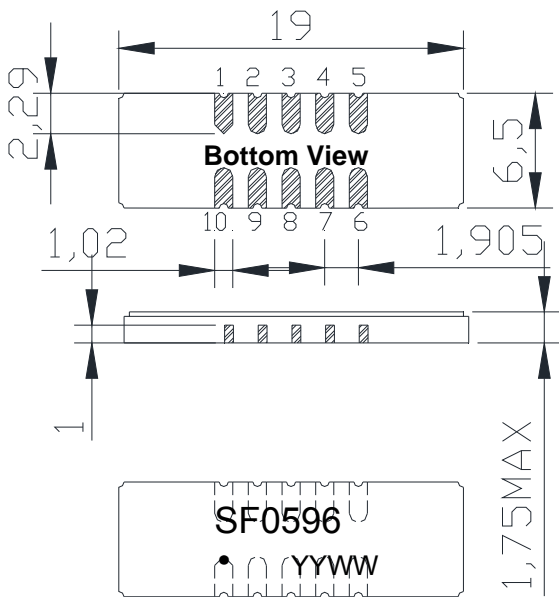
**Application**

- Low-loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Passband 2.2 MHz

**Features**

- Ceramic Package for **Surface Mounted Technology (SMT)**
- **RoHS** compatible
- Package size 19.00x6.50x1.75mm<sup>3</sup>
- Package Code SMD19
  
- **Electrostatic Sensitive Device(ESD)**

**Package Dimensions (Unit: mm)**



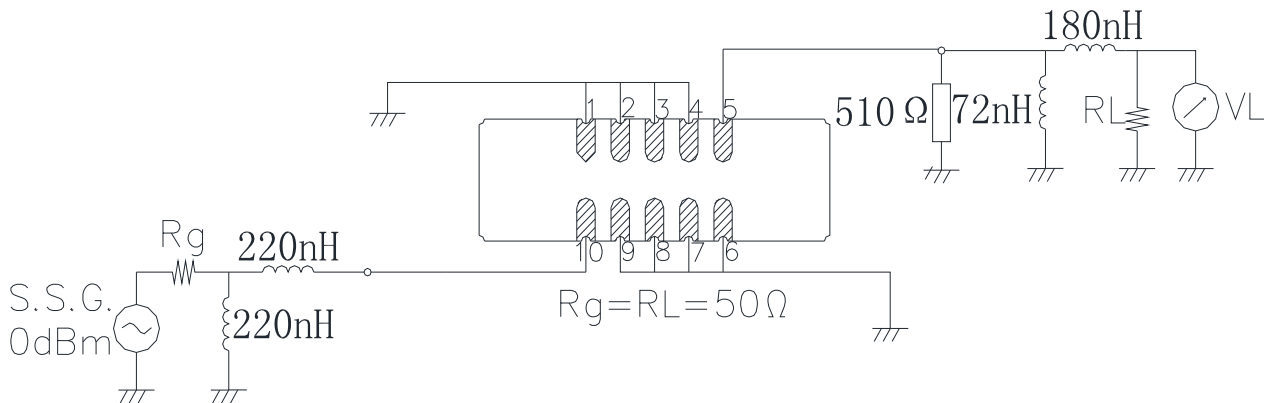
**Pin Configuration**

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

**Marking Description**

<b>S</b>	Trademark
<b>F</b>	SAW Filter
<b>0596</b>	Part Number
●	Pin 1
YYWW	Year Code & Week Code

**Test Circuit(Bottom View)**



\*Fig: If the products produced in 06<sup>th</sup> week of 2012, The year code & week code is 1206.

**Performance****Maximum Rating**

Item		Value	Unit
DC Voltage	V <sub>DC</sub>	3	V
Operation Temperature	T	-40 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-55 ~ +125	°C
RF Power Dissipation	P	10	dBm

**Electronic Characteristics**

Test Temperature: 25°C ± 2°C

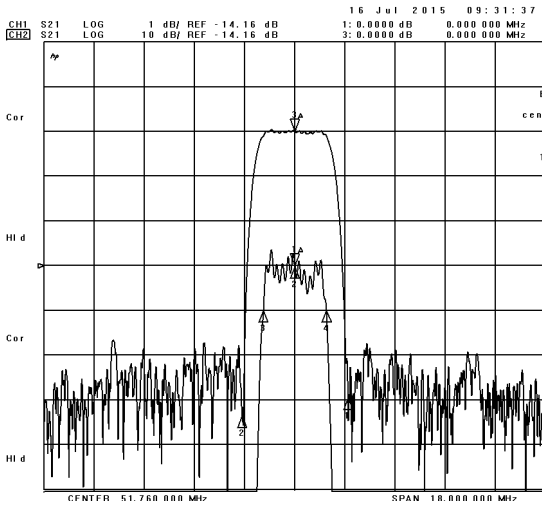
Terminating source impedance: 50Ω

Terminating load impedance: 50Ω

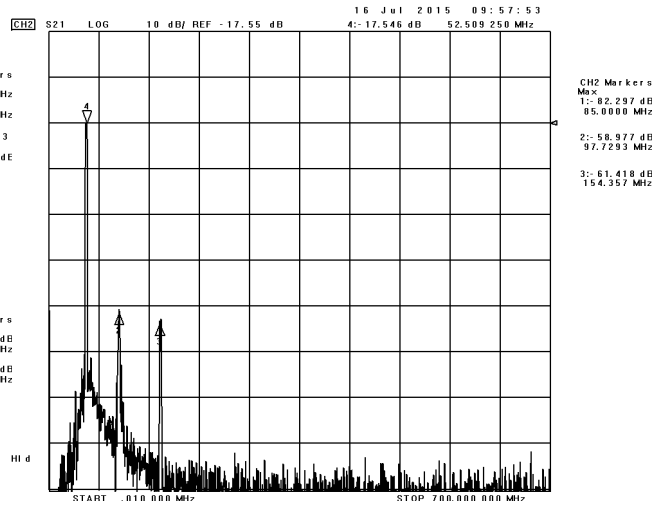
Item		Minimum	Typical	Maximum	Unit
Center Frequency	f <sub>c</sub>		51.76		MHz
Insertion Loss(Fc)	IL		14.1	16.0	dB
1 dB Bandwidth(Relative to Fc)	BW <sub>1dB</sub>	2.20	2.26	2.40	MHz
Absolute Attenuation(With a base of Fc)	α				
	49.86MHz	46.5	63.5		dB
	53.66MHz	46.5	59.5		dB
	41.76-49.86MHz	45.0	46.0		dB
	53.66-61.76MHz	45.0	47.0		dB
	85.00-700.00MHz	25.0	41.0		dB
Phase Linearity	50.66-52.86MHz		8.0	10.0	deg
Input VSWR	51.76MHz		2.1:1	2.5:1	/
Output VSWR	51.76MHz		1.6:1	2.0:1	/

Frequency Characteristics

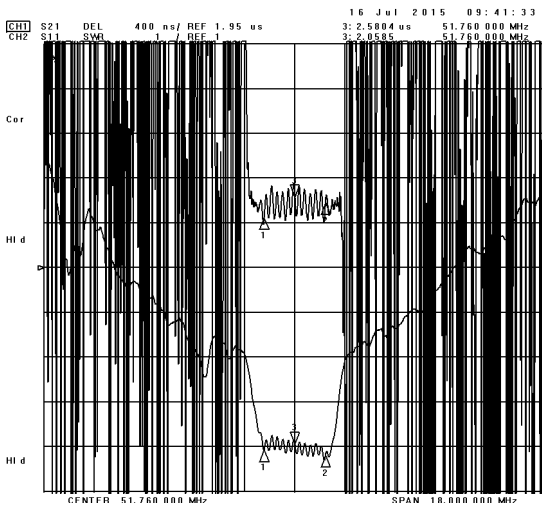
Frequency Response



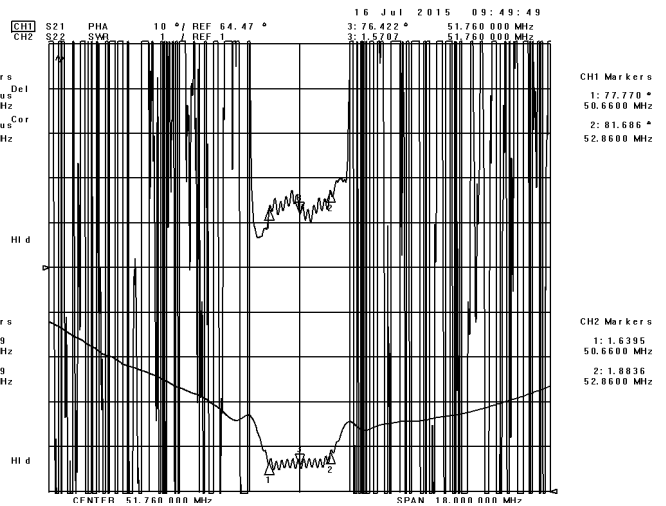
Frequency Response (wideband)



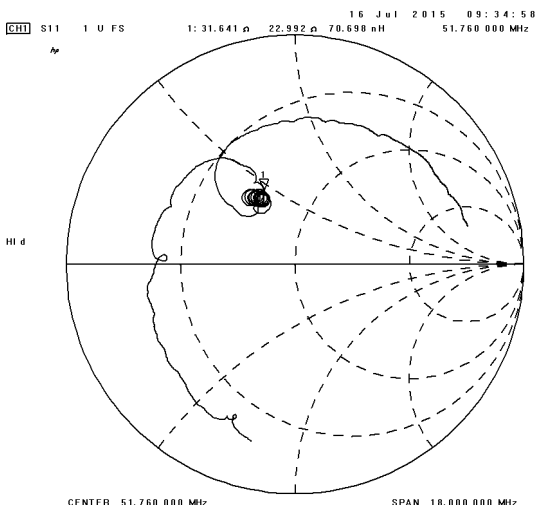
Delay Ripple & S11 VSWR



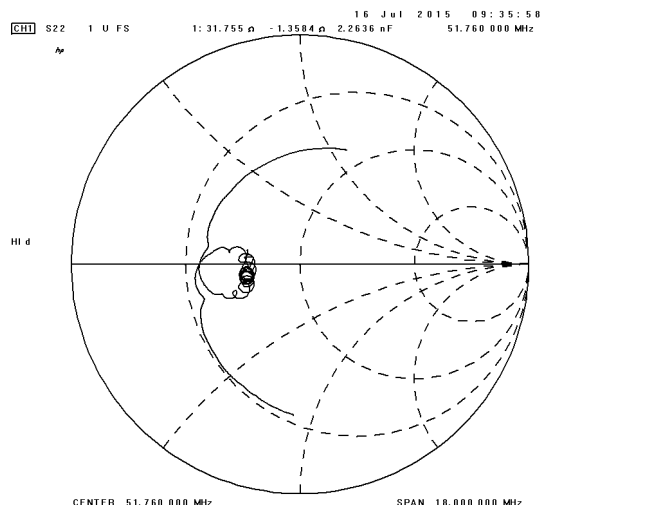
Phase Linearity & S22 VSWR



S11 Smith Chart



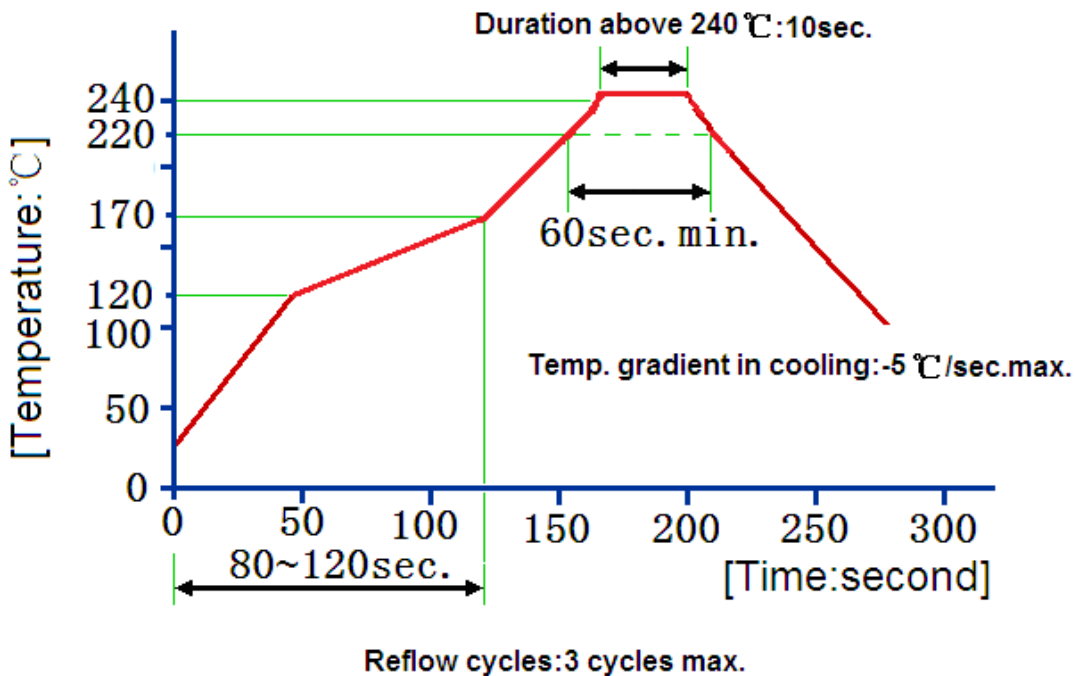
S22 Smith Chart



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

No.	Test item	Test condition
1	Temperature Storage	(1) Temperature: 85°C±2°C , Duration: 250h , Recovery time: 2h±0.5h (2) Temperature: -55°C±3°C , Duration: 250h ,Recovery time: 2h±0.5h
2	Humidity Test	Conditions: 60°C±2°C , 90~95% RH      Duration: 250h
3	Thermal Shock	Heat cycle conditions: TA=-55°C±3°C, TB=85°C±2°C, t1=t2=30min, Switch time: ≤3min, Cycle time: 100 times, Recovery time: 2h±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°C±5°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°C±5°C , Duration: 10±1s (2)Temperature of Soldering Iron: 350°C±10°C , Duration: 3~4s , Recovery time : 2 ± 0.5h

**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.