



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.	:	SF1199
Pages	:	6
Date	:	2013/2/21
Revision	:	1.1

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Checked by:	
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Application

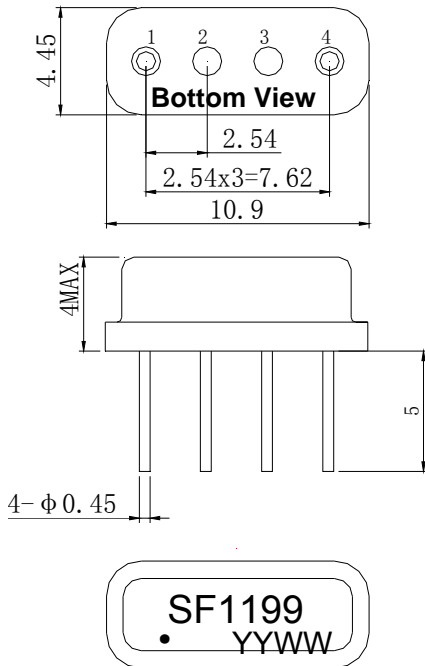
- Low-loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Usable passband 4 MHz

Features

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



Package Dimensions (Unit: mm)



Pin Configuration

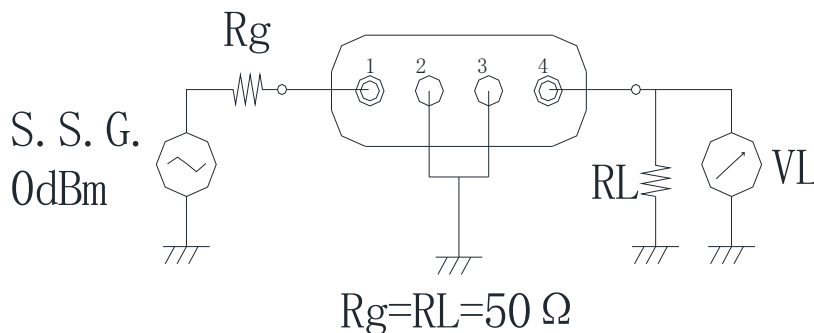
Pin No.	Description
1	Input
4	Output
2,3	Ground

Marking Description

S	Trademark
F	SAW Filter
1199	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)



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

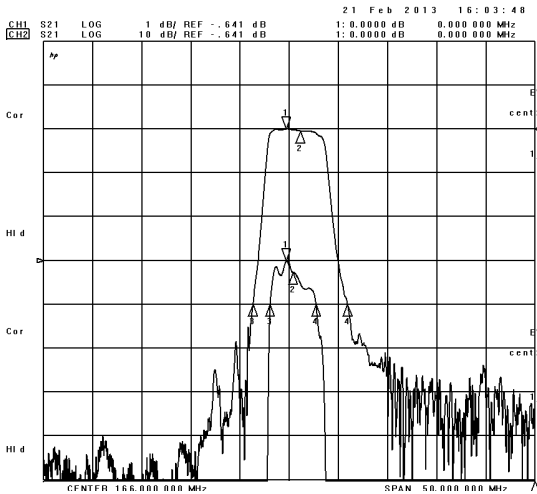
Terminating source impedance: 50Ω

Terminating load impedance: 50Ω

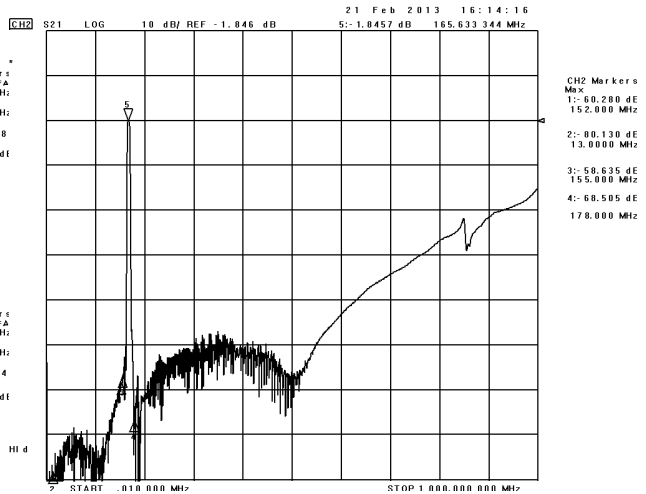
Item		Minimum	Typical	Maximum	Unit
Center Frequency	fc	165.00	166.00	167.00	MHz
Insertion Loss(min)	IL		0.7	2.0	dB
Amplitude Ripple (p-p)	$\Delta\alpha$		0.8	1.0	dB
1 dB Bandwidth	BW_{1dB}	4.48	4.60		MHz
40 dB Bandwidth	BW_{40dB}		9.60	12.0	MHz
Absolute Attenuation	α				
	152.00 MHz	55.0	65.0		dB
	13.00MHz	78.0	80.0		dB
	5.00-155.00MHz	50.0	55.0		dB
	178.00-345.00 MHz	40.0	45.0		dB
Input VSWR	164.00-168.00MHz		1.8:1	2.0:1	/
Output VSWR	164.00-168.00MHz		1.8:1	2.0:1	/

Frequency Characteristics

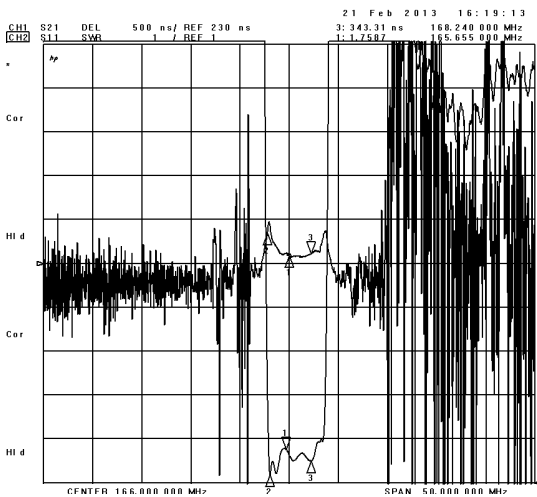
Frequency Response



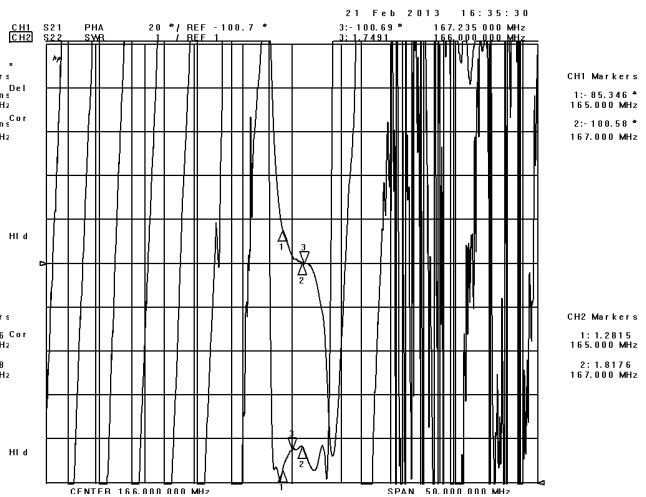
Frequency Response (wideband)



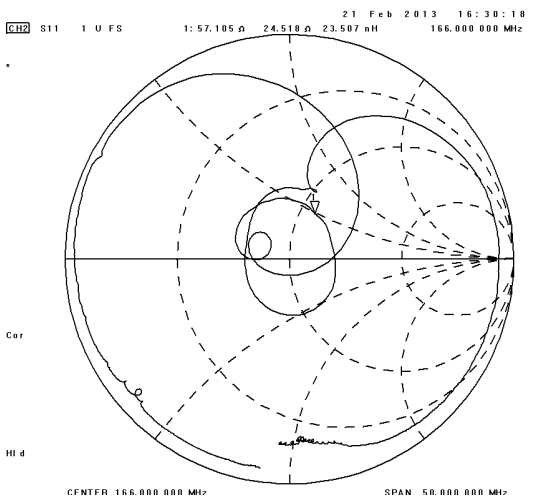
Delay Ripple & S11 VSWR



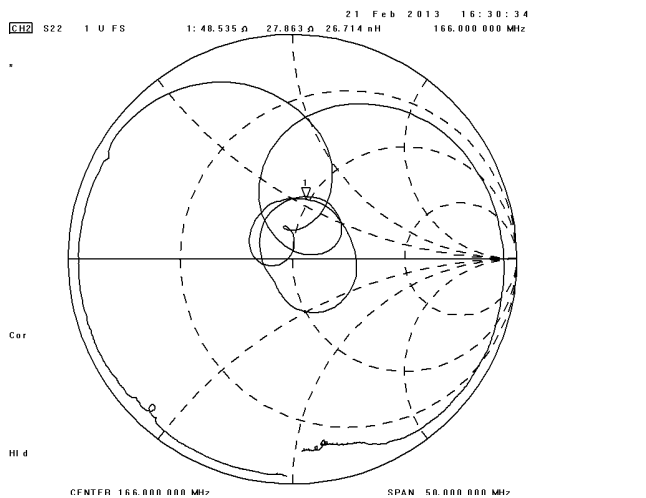
Phase Linearity & S22 VSWR



S11 Smith Chart



S22 Smith Chart



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.