



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.	:	SF1313
Pages	:	6
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Revision	:	1.0

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Application

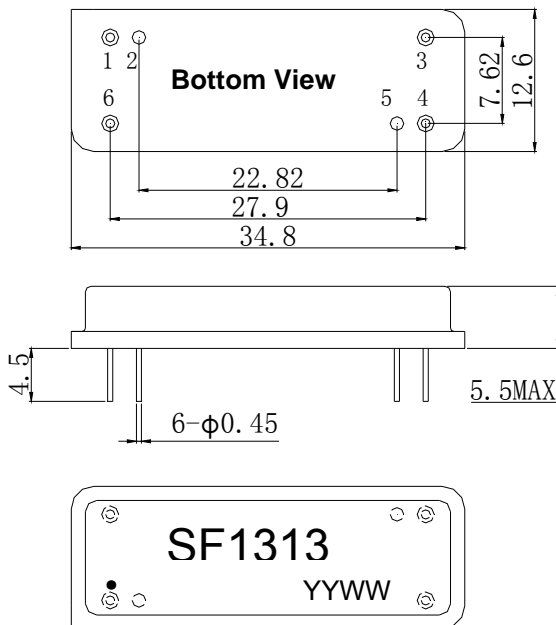
- Low-loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Usable passband 9.55 MHz



Features

- RoHS compatible
- Package size 34.8x12.6x5.50mm³
- Package Code DIP3512J
- Electrostatic Sensitive Device(ESD)

Package Dimensions (Unit: mm)



Pin Configuration

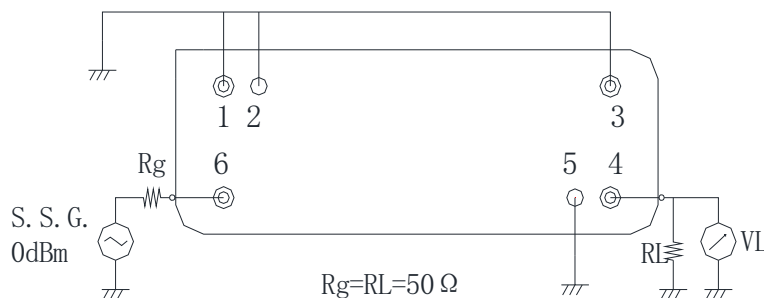
Pin No.	Description
6	Input
4	Output
1,2,3,5	Ground

Marking Description

S	Trademark
F	SAW Filter
1313	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°C ± 2°C

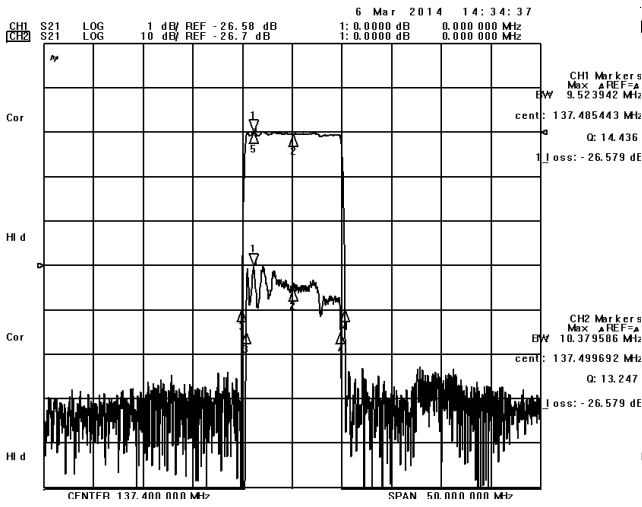
Terminating source impedance: 50Ω

Terminating load impedance: 50Ω

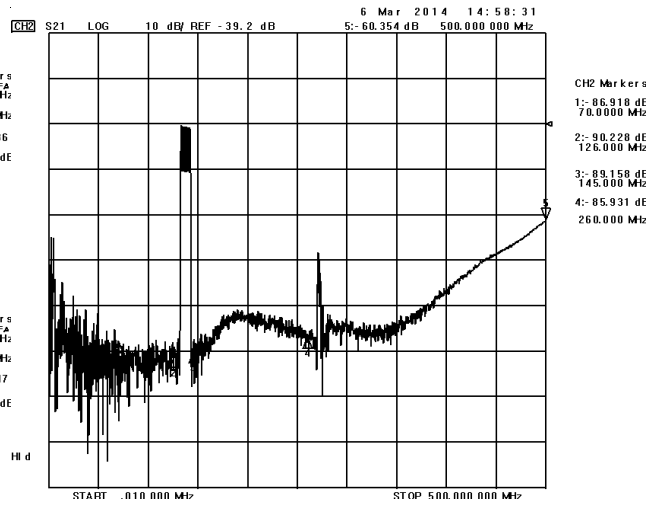
Item		Minimum	Typical	Maximum	Unit
Center Frequency	f _c	137.40	137.50	137.60	MHz
Insertion Loss(min)	IL	-	26.50	28.00	dB
Amplitude Ripple	Δα	-	1.00	1.50	dB
1.5 dB Bandwidth	BW _{1.5dB}	-	9.55	-	MHz
3 dB Bandwidth	BW _{3dB}	9.60	9.67	-	MHz
35 dB Bandwidth	BW _{35dB}	-	10.34	10.40	MHz
45 dB Bandwidth	BW _{45dB}	-	10.39	-	MHz
50 dB Bandwidth	BW _{50dB}	-	10.42	-	MHz
Absolute Delay	AD	-	3.80	-	us
Phase Linearity		-	5.00	10.00	deg
Absolute Attenuation	α				
	127.70MHz	50.00	60.00	-	dB
	131.70MHz	50.00	55.00	-	dB
	132.10MHz	45.00	50.00	-	dB
	132.30MHz	30.00	44.00	-	dB
	142.70MHz	30.00	44.00	-	dB
	142.90MHz	45.00	50.00	-	dB
	143.30MHz	50.00	55.00	-	dB
	147.30MHz	50.00	60.00	-	dB

Frequency Characteristics

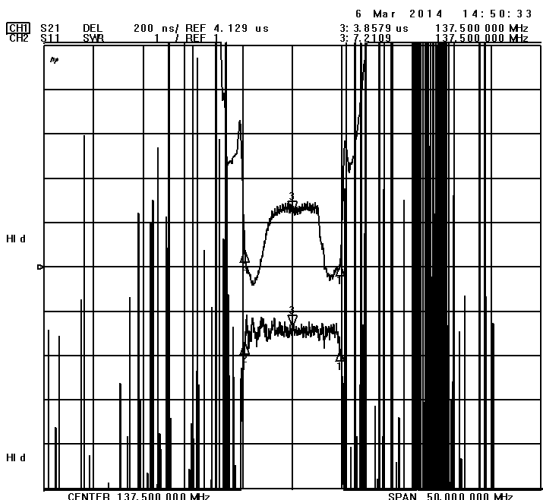
Frequency Response



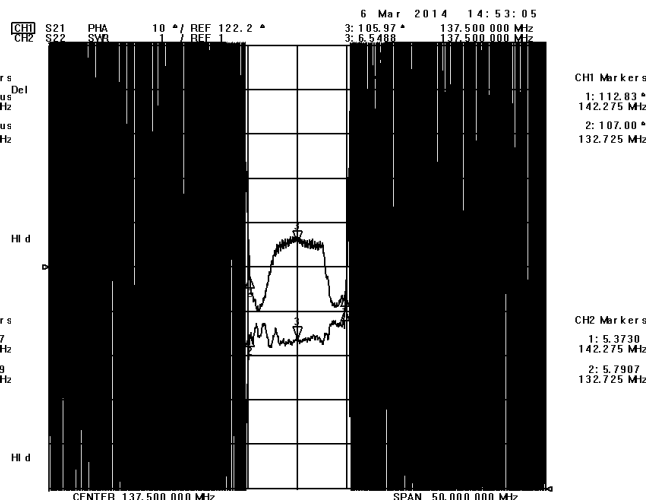
Frequency Response (wideband)



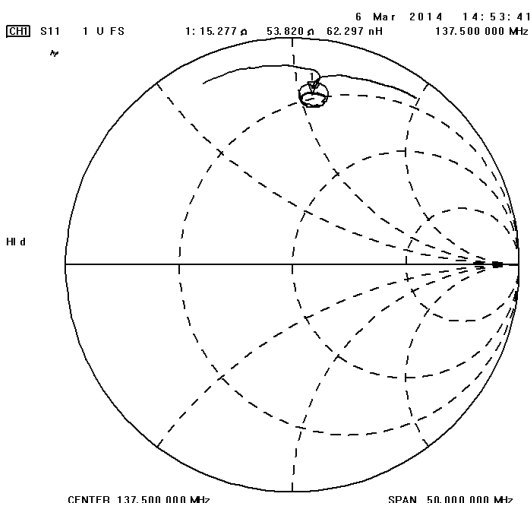
Delay Ripple & S11 VSWR



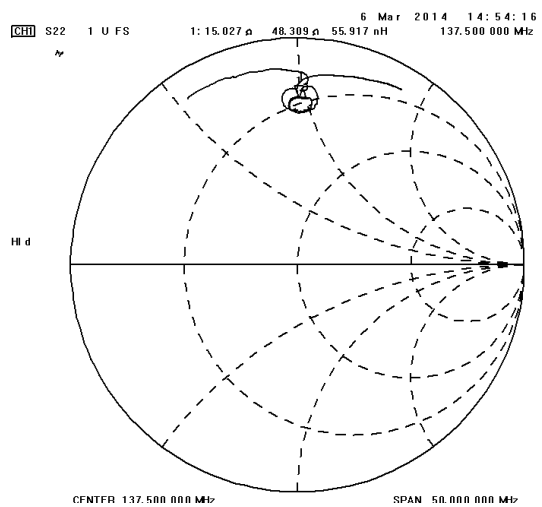
Phase Linearity & S22 VSWR



S11 Smith Chart



S22 Smith Chart



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

No.	Test item	Test condition
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.