



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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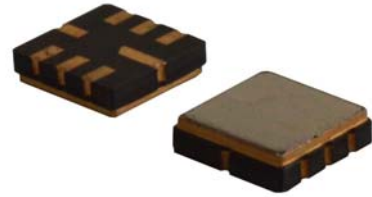


Part No.	:	SF4163
Pages	:	6
Date	:	2013/2/25
Revision	:	1.0

Prepared by:	
Checked by:	
Approved by:	

Application

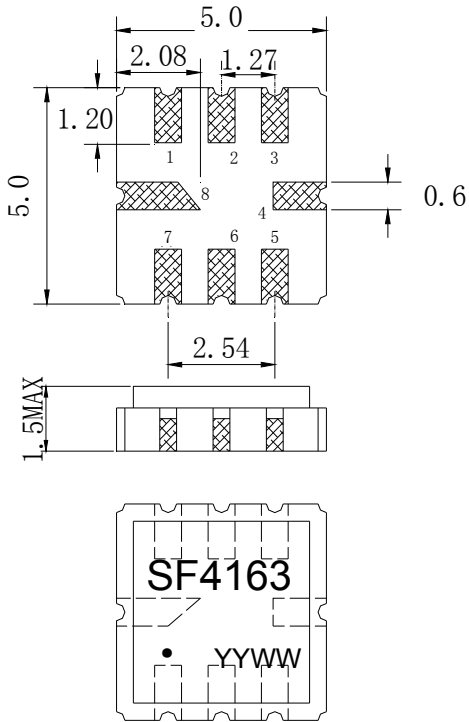
- Low-loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Usable passband 13 MHz



Features

- Ceramic Package for **Surface Mounted Technology (SMT)**
- **RoHS** compatible
- Package size 5.00x5.00x1.50mm³
- Package Code QCC8C
- **Electrostatic Sensitive Device(ESD)**

Package Dimensions (Unit: mm)



Pin Configuration

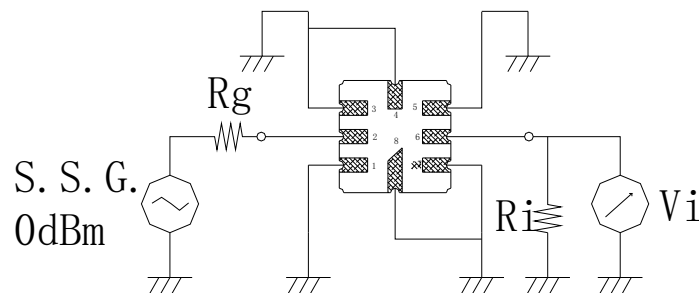
Pin No.	Description
2	Input
6	Output
1,3,4,5,7,8	Ground

Marking Description

S	Trademark
F	SAW Filter
4163	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



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

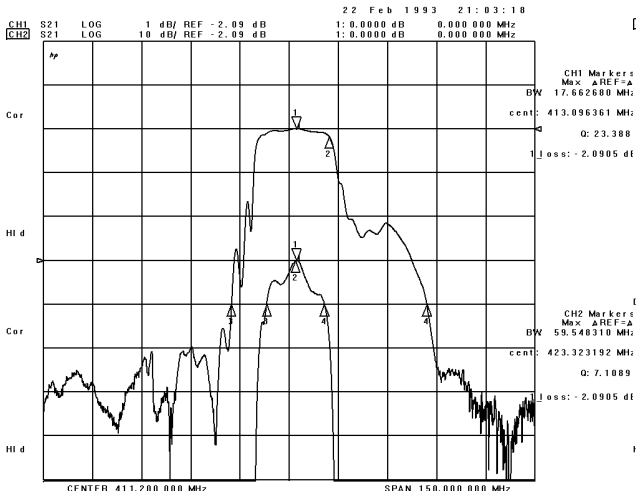
Terminating source impedance: 50Ω

Terminating load impedance: 50Ω

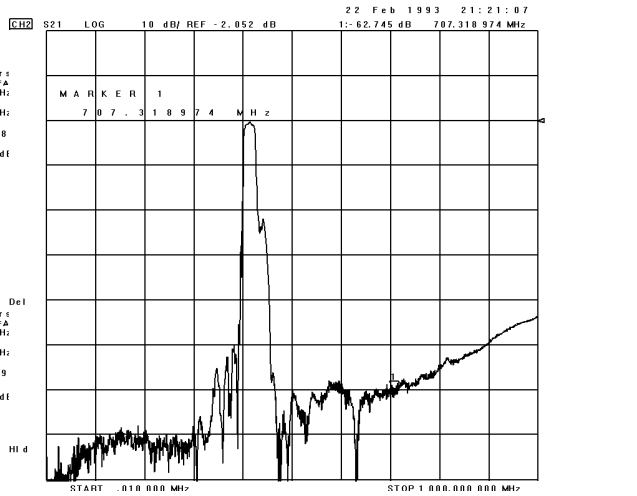
Item		Minimum	Typical	Maximum	Unit
Center Frequency	f _c	409.20	411.20	413.20	MHz
Insertion Loss(min)	IL		2.1	3.5	dB
Amplitude Ripple (p-p) 404.70-417.70 MHz	Δα		0.8	1.0	dB
1 dB Bandwidth	BW _{1dB}	13.0	17.0		MHz
40 dB Bandwidth	BW _{40dB}		59.5	60.0	MHz
Group Delay Ripple 404.70-417.70 MHz	GDR		30.0	100.0	ns
Absolute Delay 411.20 MHz			50.0	150.0	ns
Absolute Attenuation	α				
DC -387.00 MHz		50.0	51.0		dB
460.00-500.00 MHz		50.0	58.0		dB
500.00-1000.00 MHz		40.0	42.0		dB
Input VSWR 404.70-417.70 MHz			1.9:1	2.2:1	/
Output VSWR 404.70-417.70 MHz			1.9:1	2.2:1	/

Frequency Characteristics

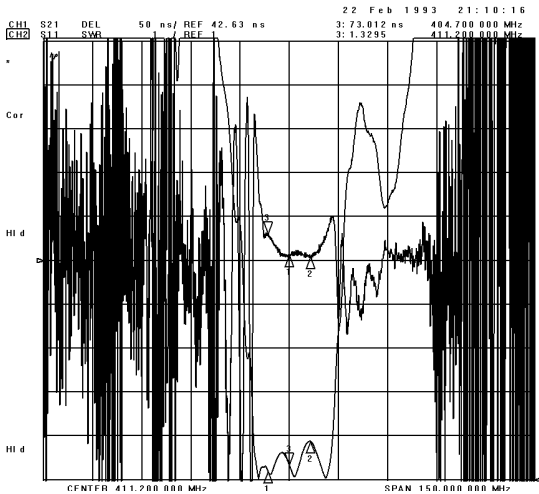
Frequency Response



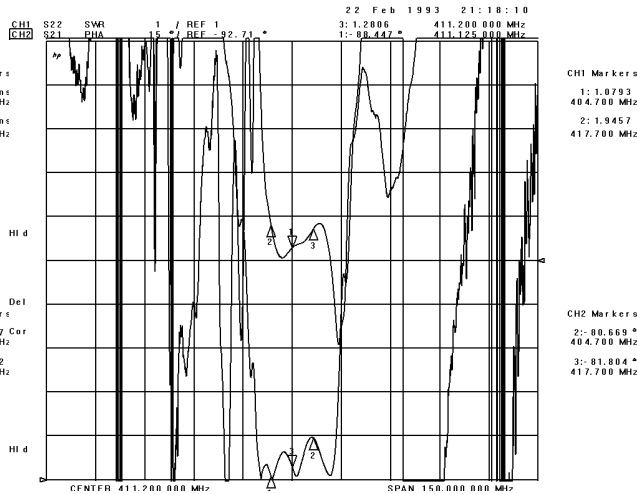
Frequency Response (wideband)



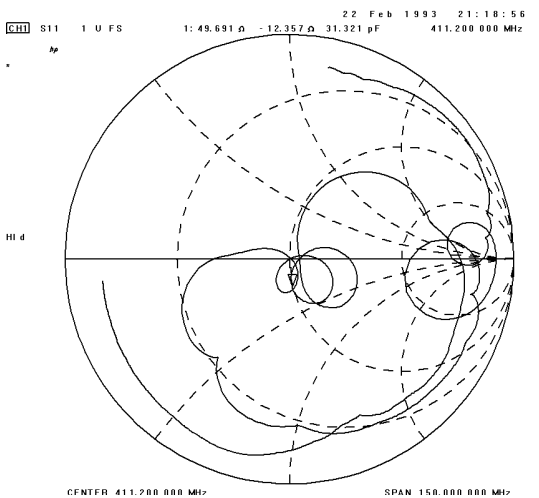
Delay Ripple & S11 VSWR



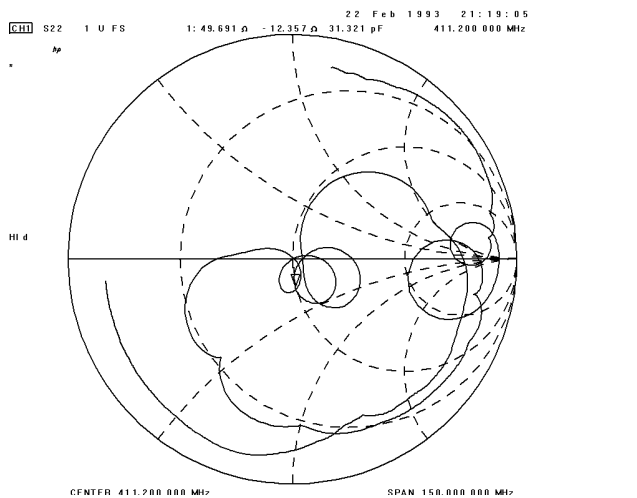
Phase Linearity & S22 VSWR



S11 Smith Chart

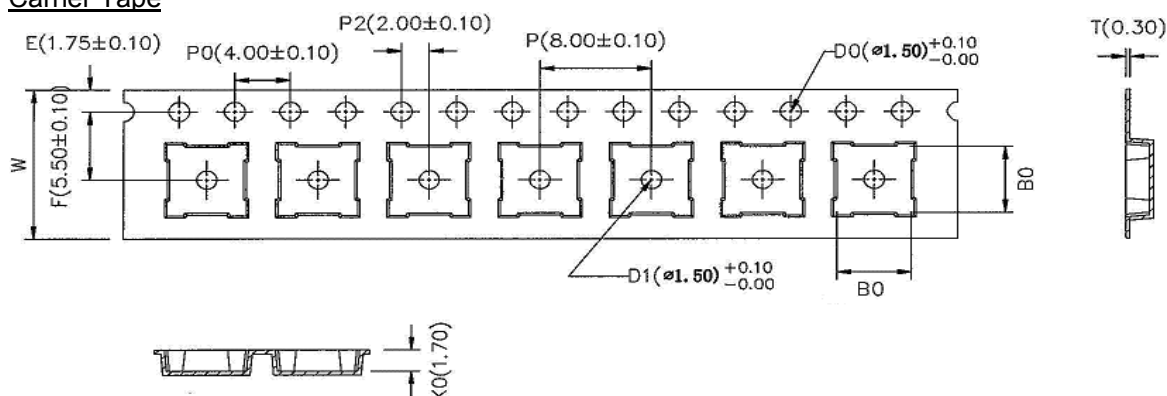


S22 Smith Chart



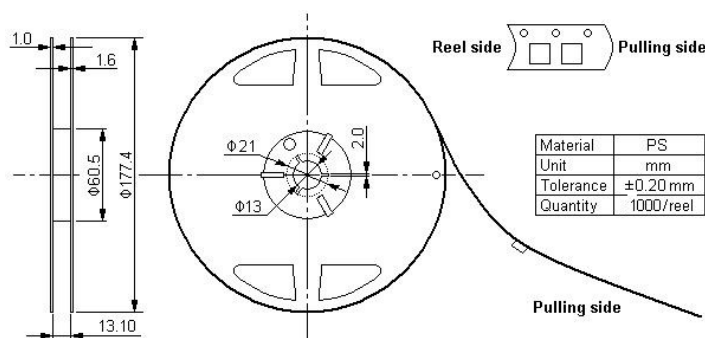
Packing Information

Carrier Tape



* B0: 5.35 for QCC8C; 4.15 for DCC6/QCC8B; 3.35 for DCC6C/QCC8D

Reel Dimensions



Outer Packing

Type	Quantity	Dimension	Description	Weight
Internal box	1000	190×188×42	carton box	0.18
External box	10000	235×205×210	2 reel / internal box 5 boxes / external box	

Unit: mm

Unit: kg

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.