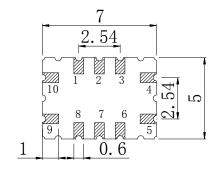
### **Application**

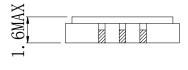
- Low-loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Usable passband 60 kHz

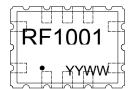
### **Features**

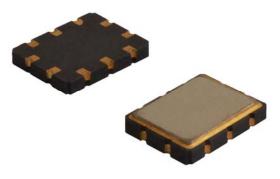
- Ceramic Package for Surface Mounted Technology (SMT)
- RoHS compatible
- Package size 7.00x5.00x1.60mm³
- Package Code QCC12C
- Electrostatic Sensitive Device(ESD)

# Package Dimensions (Unit: mm)









# **Pin Configuration**

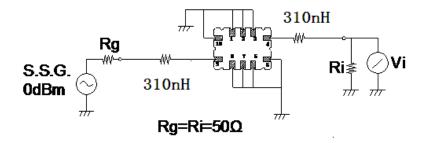
Pin No.	Description
9	Input
4	Output
1,2,3,5,6,7,8,10	Ground

## **Marking Description**

R	Manufacturer	
F	SAW Filter	
1001	Part Number	
•	Pin 1	
YYWW	Year Code & Week Code	

\*Fig: If the products produced in 06<sup>th</sup> 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	Т	-40 ~ +85	$^{\circ}$
Storage Temperature	T <sub>stg</sub>	-55 ~ +125	${\mathbb C}$
RF Power Dissipation	Р	10	dBm

### **Electronic Characteristics**

Test Temperature: 25  $^{\circ}$ C  $\pm 2$   $^{\circ}$ C

Terminating source impedance:  $50\Omega$  Terminating load impedance:  $50\Omega$ 

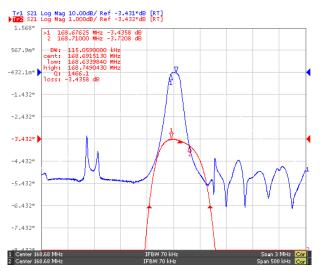
Item			Minimum	Typical	Maximum	Unit
Center Frequency		fc		168.68		MHz
Insertion Loss(min)		IL		3.8	4.5	dB
Insertion Loss 168.65 - 168.71MHz		IL		4.4	5.0	dB
Pass bandwidth	arel ≤1 dB	BW₁	60.0	80.0		kHz
rass balluwidili	a <sub>rel</sub> ≤3 dB	BW₃	90.0	110.0		kHz
Amplitude Ripple (p-p)  168.65 - 168.71MHz  Group Delay Ripple  168.65 - 168.71MHz		Δa		0.5	1.0	dB
		GDR		1.5	2.0	us
Absolute Attenuation		а				
DC - 130.00MHz			50.0	55.0		dB
130.00 - 163.68MHz			40.0	45.0		dB
163.68 MHz			35.0	45.0		dB
166.68 MHz			30.0	40.0		dB
170.68 MHz			30.0	40.0		dB

DEVCONNIC	CAM Eiltor	DE1001
REYCONNS	S SAW Filter	<i>RF1001</i>

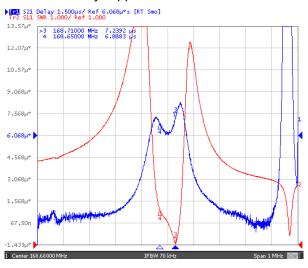
173.68 MHz	35.0	45.0		dB
173.68 - 250.00MHz	40.0	45.0		dB
250.00 - 800.00MHz	50.0	55.0		dB
Input VSWR 168.65 - 168.71MHz		2.5:1	3.0:1	/
Output VSWR 168.65 - 168.71MHz		2.5:1	3.0:1	/

# **Frequency Characteristics**

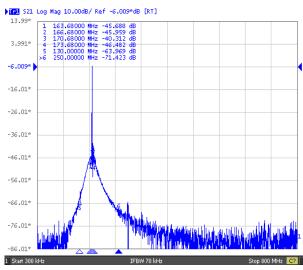
# Frequency Response



# Delay Ripple & S11 VSWR



# Frequency Response (wideband)



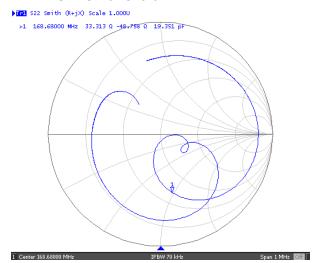
## Phase Linearity & S22 VSWR



### S11 Smith Chart

# \$1 168.68000 MHz 47.570 n -60-849 n 15.582 pr

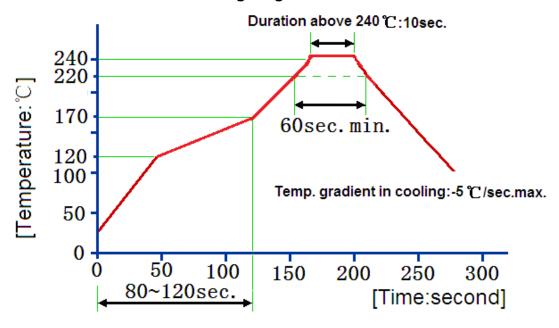
## S22 Smith Chart



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

No.	Test item	Test condition	
1 Temperature		(1) Temperature: 85℃±2℃ , Duration: 250h , Recovery time: 2h±0.5h	
1	Storage	(2) Temperature: –55℃±3℃ , Duration: 250h ,Recovery time: 2h±0.5h	
2	Humidity Test	Conditions: 60℃±2℃, 90~95% RH Duration: 250h	
2	The result Cheek	Heat cycle conditions: TA=-55°C±3°C, TB=85°C±2°C, t1=t2=30min, Switch	
3 Thermal Shock		time: ≤3min, Cycle time: 100 times, Recovery time: 2h±0.5h.	
4	4 Vibration Fatigue	Frequency of vibration: 10~55Hz Amplitude:1.5mm	
4		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.

### **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.