



# APPROVAL SHEET

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

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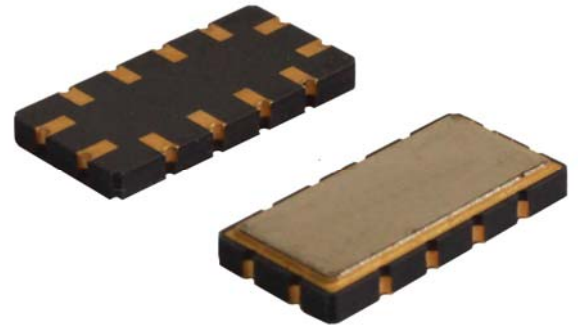


Part No.	:	SF1618
Pages	:	6
Date	:	2017/2/20
Revision	:	1.0

<b>Prepared by:</b>	
<b>Checked by:</b>	
<b>Approved by:</b>	

**Application**

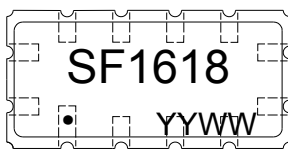
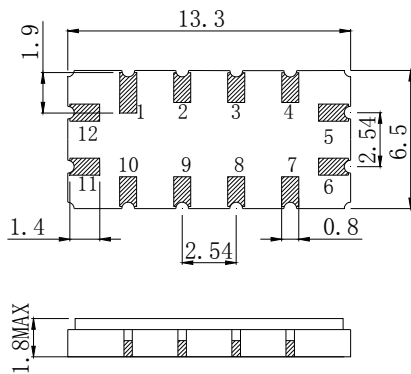
- Low-loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Usable passband 60.1 MHz



**Features**

- Ceramic Package for **Surface Mounted Technology (SMT)**
- **RoHS** compatible
- Package size 13.30x6.50x1.80mm<sup>3</sup>
- Package Code QCC12
- **Electrostatic Sensitive Device(ESD)**

**Package Dimensions (Unit: mm)**



**Pin Configuration**

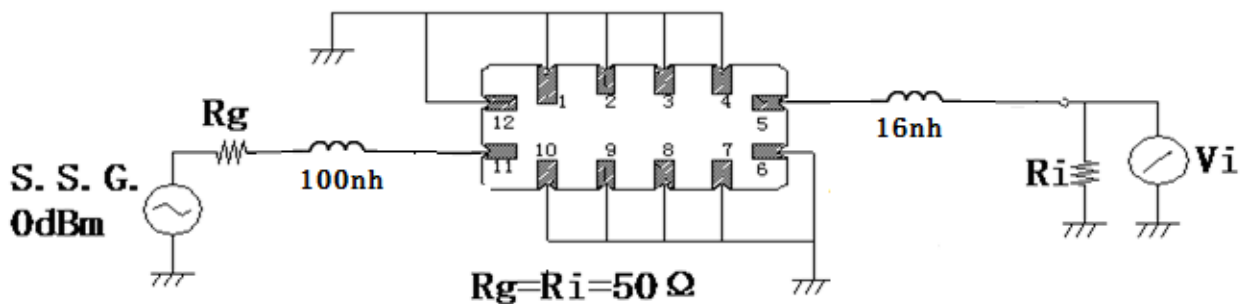
Pin No.	Description
11	Input
5	Output
1,2,3,4,7,8,9,10	Case Ground
6,12	To be Grounded

**Marking Description**

<b>SF</b>	<b>SF</b>	Trademark
	<b>F</b>	SAW Filter
<b>1618</b>	Part Number	
●	Pin 1	
<b>YYWW</b>	Year Code & Week Code	

\*Fig: If the products produced in 06<sup>th</sup> week of 2015, The year code & week code is 1506.

**Test Circuit (Bottom View)**



**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	15	dBm

**Electronic Characteristics**

Test Temperature: 25°C ± 2°C

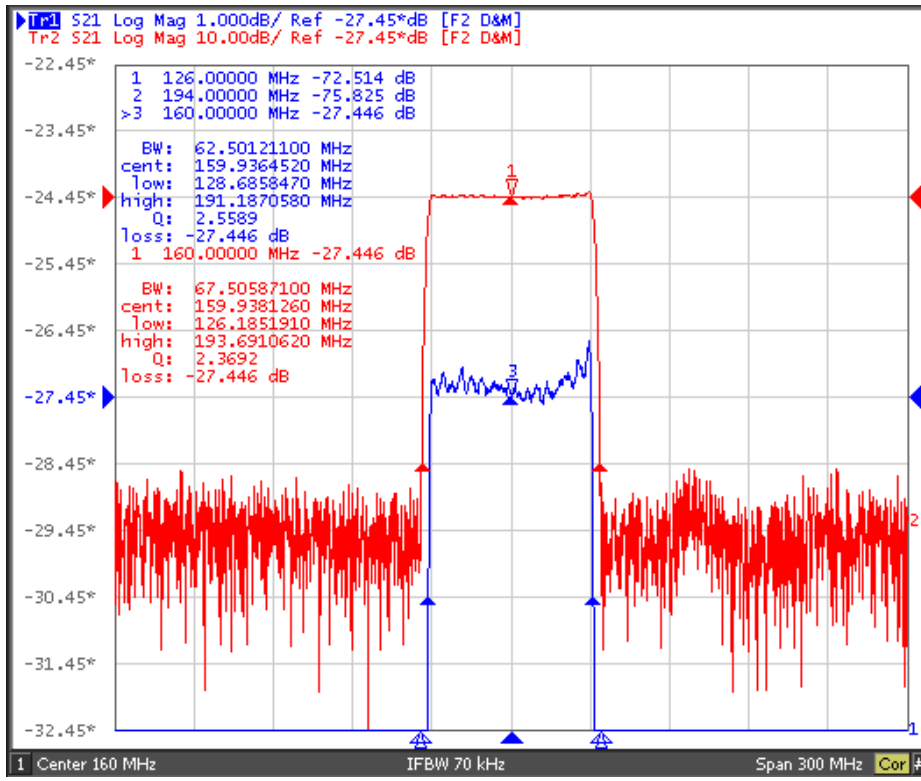
Terminating source impedance: 50Ω

Terminating load impedance: 50Ω

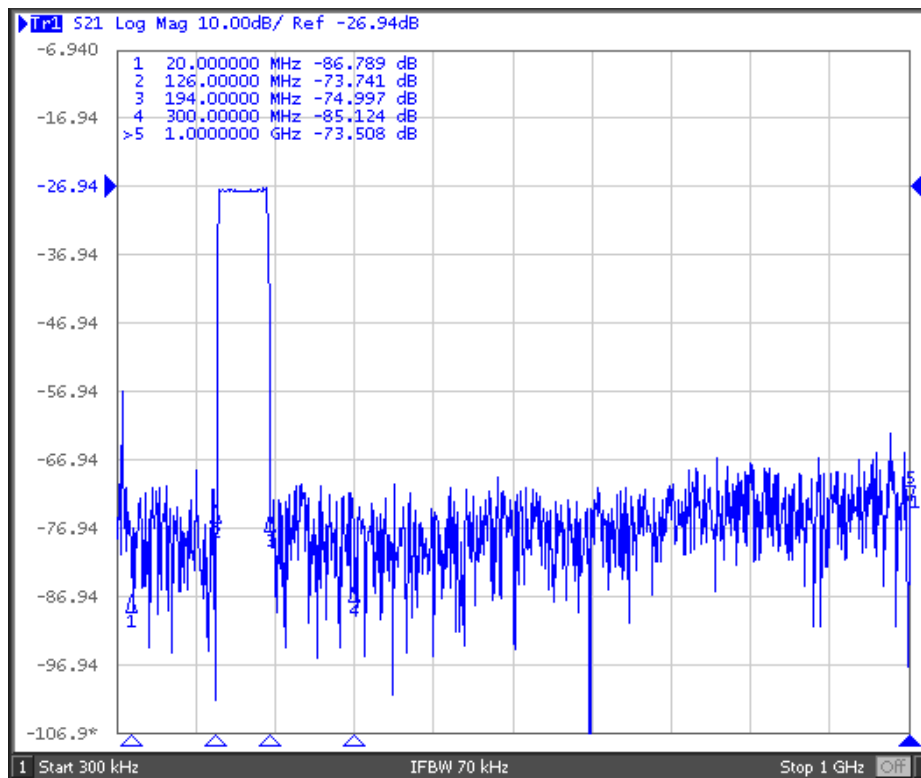
Item		Minimum	Typical	Maximum	Unit
Center Frequency	f <sub>c</sub>		160.0		MHz
Insertion Loss(min)	IL		27.5	33.0	dB
1 dB Bandwidth	@160.0 MHz BW <sub>1dB</sub>	60.1	61.5		MHz
3 dB Bandwidth	@160.0 MHz BW <sub>3dB</sub>	60.5	62.5		MHz
40 dB Bandwidth	@160.0 MHz BW <sub>40dB</sub>		67.5	68.0	MHz
Amplitude Ripple (p-p)	Δα		1.0		dB
Absolute Group Delay	@160.0 MHz AD		1.02		μs
Absolute Attenuation	α				
	20.00 – 126.00 MHz	40.0	42.0		dB
	194.00 – 302.00 MHz	40.0	42.0		dB
	302.00 – 1000.00 MHz	35.0	40.0		dB

Frequency Characteristics

Frequency Response



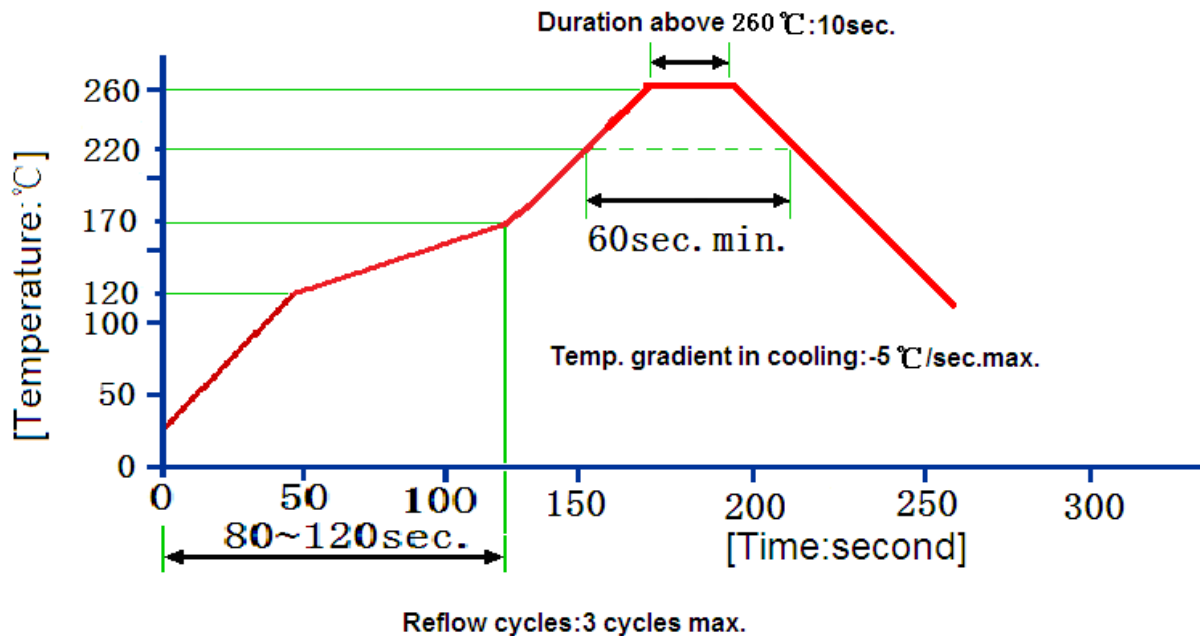
Frequency Response (wideband)



**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.