



# APPROVAL SHEET

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

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|          |   |           |
|----------|---|-----------|
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|                     |    |
|---------------------|----|
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| <b>Checked by:</b>  |    |
| <b>Approved by:</b> |    |

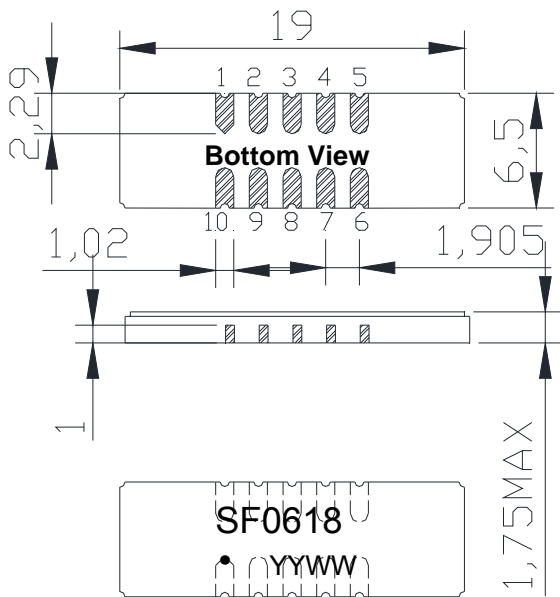
**Application**

- Low -loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Usable Passband 1.0 MHz

**Features**

- Ceramic Package for **Surface Mounted Technology (SMT)**
- **RoHS** compatible
- Package size 19.00x6.50x1.75mm<sup>3</sup>
- Package Code SMD19
  
- **Electrostatic Sensitive Device(ESD)**

**Package Dimensions (Unit: mm)**



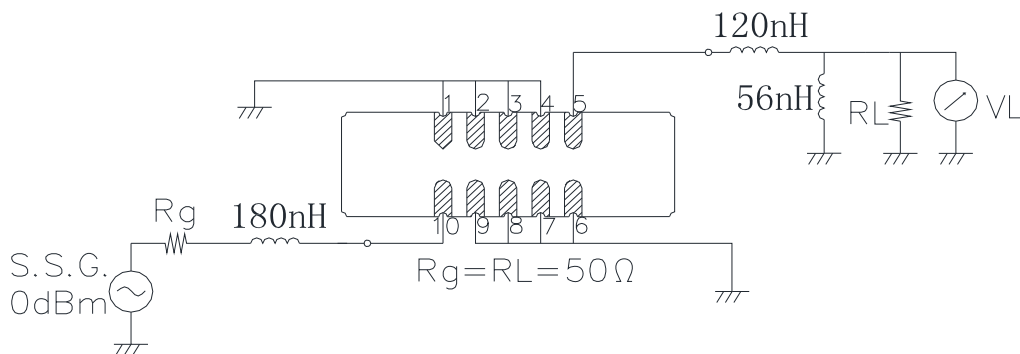
**Pin Configuration**

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

**Marking Description**

|             |                       |
|-------------|-----------------------|
| <b>S</b>    | Trademark             |
| <b>F</b>    | SAW Filter            |
| <b>0618</b> | Part Number           |
| ●           | Pin 1                 |
| <b>YYWW</b> | Year Code & Week Code |

**Test Circuit(Bottom View)**



\*Fig: If the products produced in 06<sup>th</sup> week of 2012, The year code & week code is 1206.

**Performance****Maximum Rating**

| Item                  |           | Value      | Unit |
|-----------------------|-----------|------------|------|
| DC Voltage            | $V_{DC}$  | 3          | V    |
| Operation Temperature | T         | -40 ~ +70  | °C   |
| Storage Temperature   | $T_{stg}$ | -55 ~ +125 | °C   |
| RF Power Dissipation  | P         | 10         | dBm  |

**Electronic Characteristics**

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

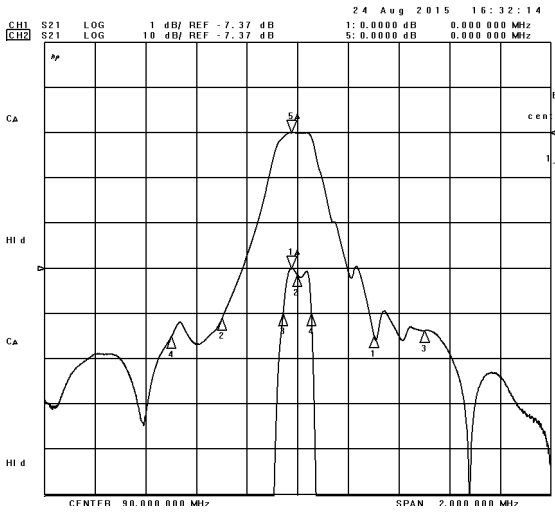
Terminating source impedance:  $50\Omega$

Terminating load impedance:  $50\Omega$

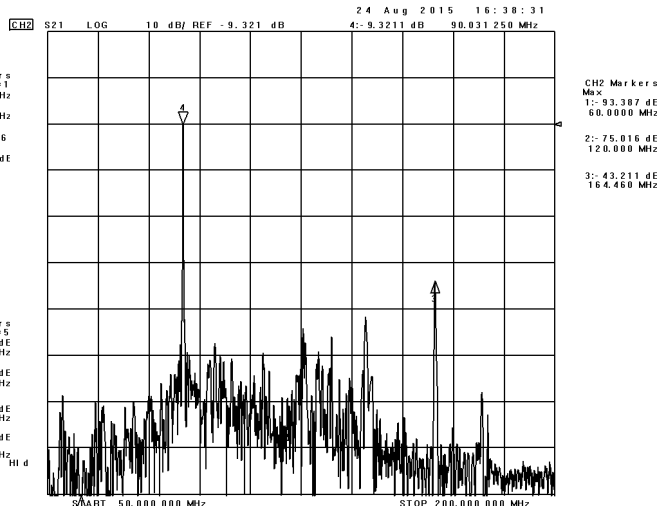
| Item                 |                 | Minimum | Typical | Maximum | Unit |
|----------------------|-----------------|---------|---------|---------|------|
| Center Frequency     | $f_c$           |         | 90.0    |         | MHz  |
| Insertion Loss(min)  | IL              |         | 7.5     | 10.0    | dB   |
| Amplitude Ripple     | $\Delta\alpha$  |         | 0.4     | 1.0     | dB   |
|                      | 89.95-90.05 MHz |         |         |         |      |
| 1 dB Bandwidth       | $BW_{1dB}$      | 100     | 120     |         | KHz  |
| Absolute Attenuation | $\alpha$        |         |         |         |      |
|                      | 89.50MHz        | 42.0    | 43.0    |         | dB   |
|                      | 89.70MHz        | 30.0    | 40.0    |         | dB   |
|                      | 90.30MHz        | 30.0    | 40.0    |         | dB   |
|                      | 90.50MHz        | 42.0    | 43.0    |         | dB   |

Frequency Characteristics

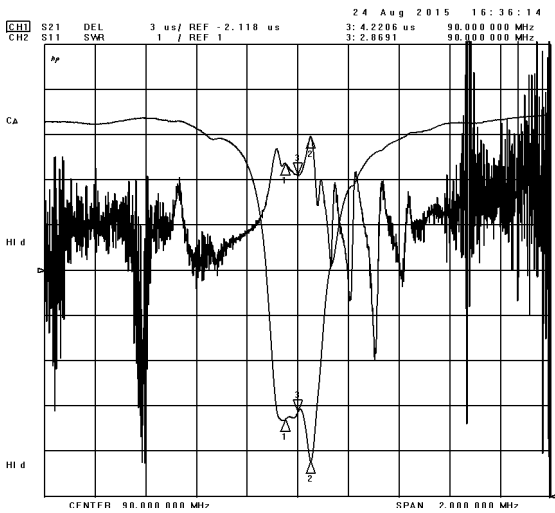
Frequency Response



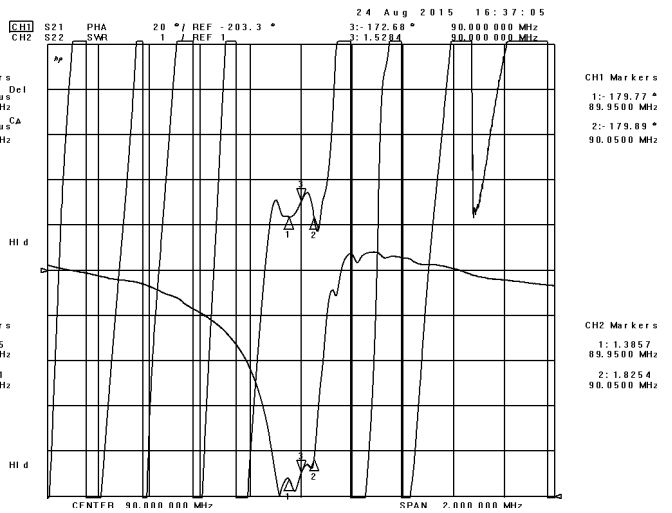
Frequency Response (wideband)



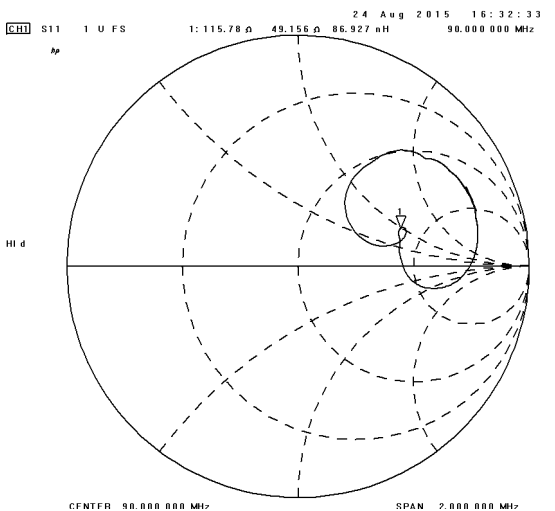
Delay Ripple & S11 VSWR



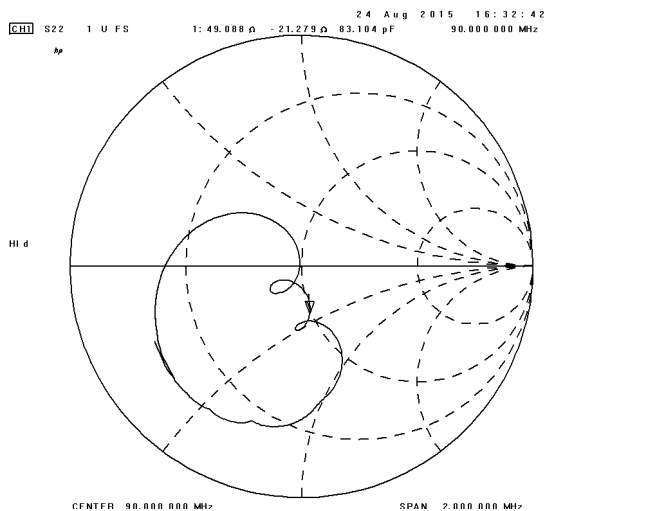
Phase Linearity & S22 VSWR



S11 Smith Chart



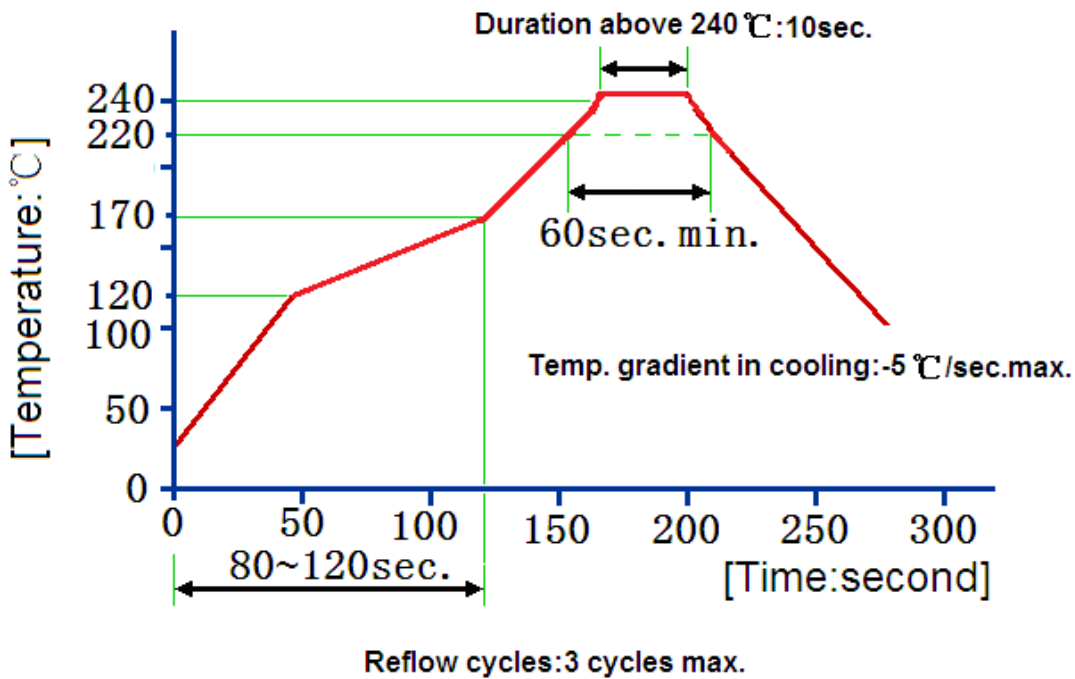
S22 Smith Chart



**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<br>(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<br>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<br>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<br>(2)Temperature of Soldering Iron: 350°C±10°C , Duration: 3~4s ,<br>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.