SHENZHEN CRYSTAL TECHNOLOGY INDUSTRIAL CO., LTD

APPROVAL SHEET

Approval Specification		Customer's Approval Certificate
TO: **Part No.:** **Customer's Part No.:**		Please return this copy as a certification of your approval **Checked & Approved by:** **Date:**

RoHS compliance Pb free

Prepared by:	王招林
Checked by:	杨宗伟
Approved by:	蒋燕港

Part No.	:	SFD9010
Pages	:	6
Date	:	2015/12/23
Revision	:	1.0

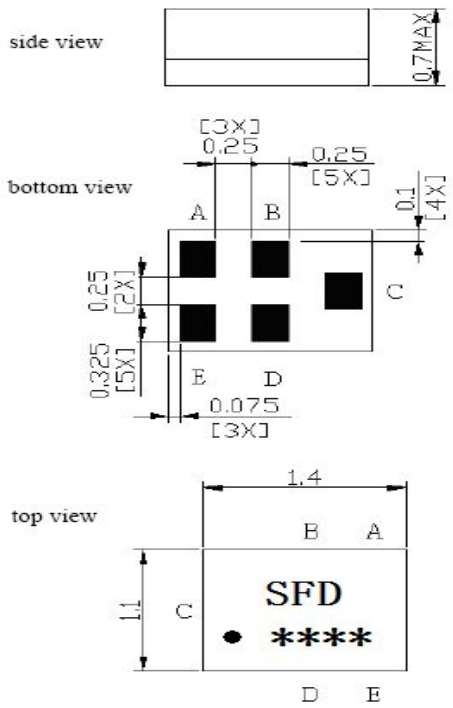
Application

- Low-loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Usable passband 2.0 MHz

Features

- Ceramic Package for **S**urface **M**ounted **T**echnology (**SMT**)
- **RoHS** compatible
- Package size 1.40x1.10x0.70mm^3
- Package Code QCS5C
- **E**lectrostatic **S**ensitive **D**evice(**ESD)**

Package Dimensions (Unit: mm)



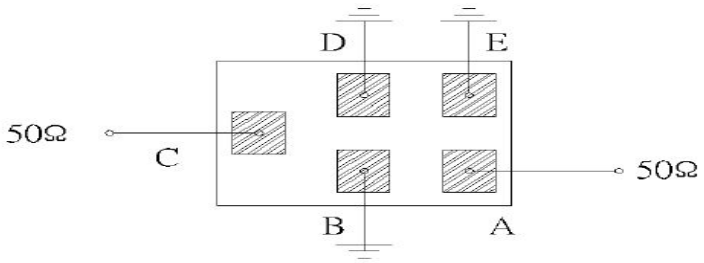
Pin Configuration

Pin No.	Description
C	Input
A	Output
B,D,	Case Ground
E	To be Grounded

Marking Description

SF	**SF**	Trademark
	F	Trademark
D	Flip-Chip	
9010	Part Number	
YYWW	Year Code & Week Code	

Test Circuit(Bottom View)



Performance

Maximum Rating

Item		Value	Unit
DC Voltage	V_{DC}	3	V
Operation Temperature	T	-40 ~ +85	℃
Storage Temperature	T_{stg}	-55 ~ +125	℃
RF Power Dissipation	P	10	dBm

Electronic Characteristics

Test Temperature: 25℃±2℃

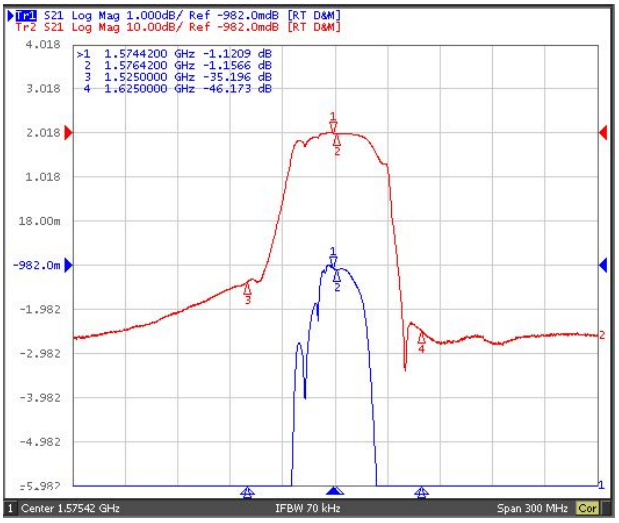
Terminating source impedance: 50Ω

Terminating load impedance: 50Ω

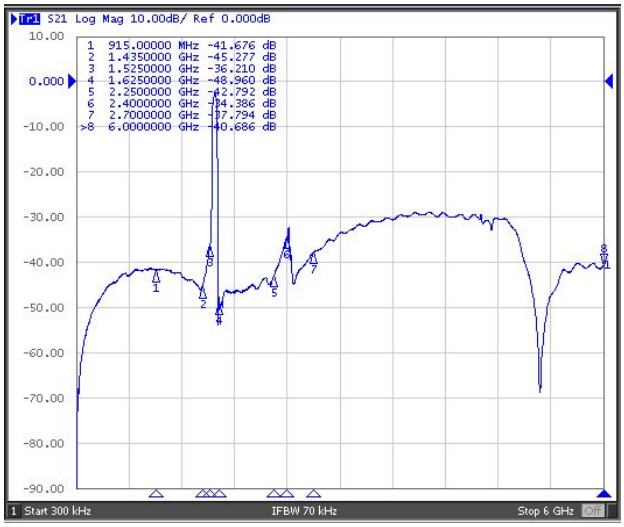
Item		Minimum	Typical	Maximum	Unit
Center Frequency	fc		1575.42		MHz
Insertion Loss 1574.42 – 1576.42 MHz	IL		0.9	1.3	dB
Amplitude Ripple (p-p) 1574.42 – 1576.42 MHz	△α		0.05	0.6	dB
Group Delay Ripple 1574.42 – 1576.42 MHz	GDR		5.0	20.0	ns
Absolute Attenuation	α				
DC - 880.00 MHz		41.0	46.0		dB
880.00 - 915.00 MHz		41.0	46.0		dB
915.00 - 1435.00 MHz		40.0	46.0		dB
1435.00 - 1525.00 MHz		35.0	40.0		dB
1625.00 - 1710.00 MHz		40.0	52.0		dB
1710.00 - 2050.00 MHz		45.0	50.0		dB
2050.00 - 2250.00 MHz		40.0	50.0		dB
2250.00 - 2400.00 MHz		30.0	35.0		dB
2400.00 - 2700.00 MHz		30.0	35.0		dB
2700.00 - 6000.00 MHz		25.0	28.0		dB
Input VSWR 1574.42 – 1576.42 MHz			1.2:1	2.0:1	/
Output VSWR 1574.42 – 1576.42 MHz			1.2:1	2.0:1	/

Frequency Characteristics

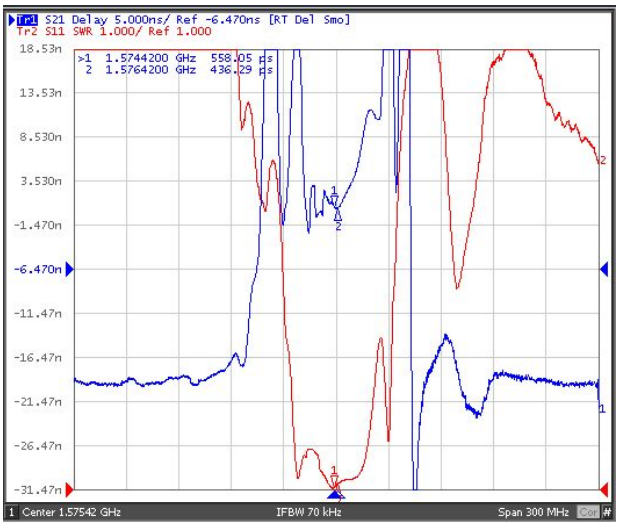
Frequency Response



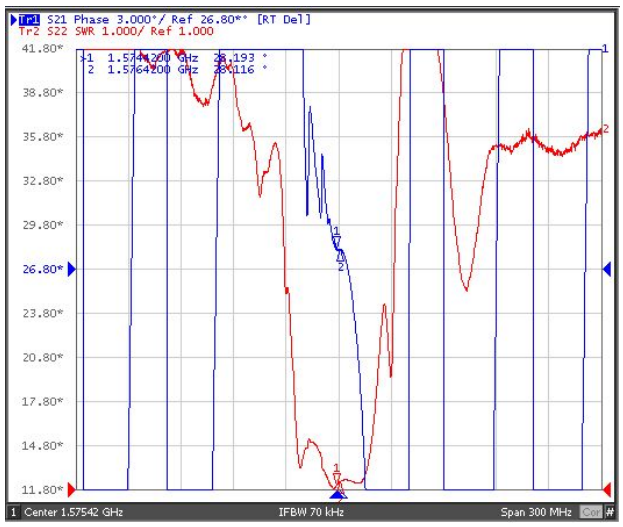
Frequency Response（wideband）



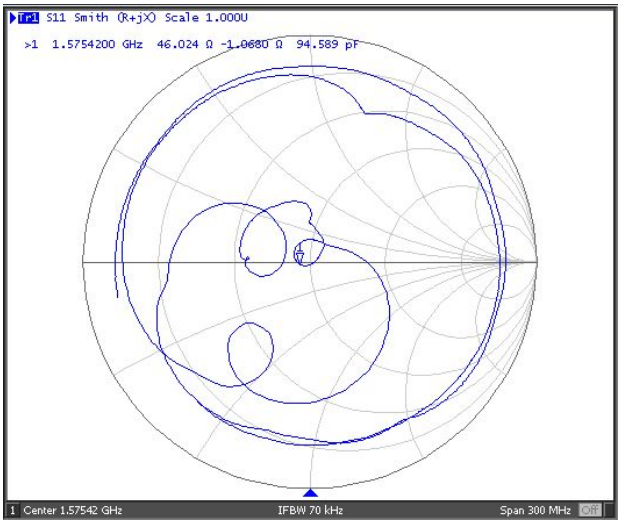
Delay Ripple & S11 VSWR



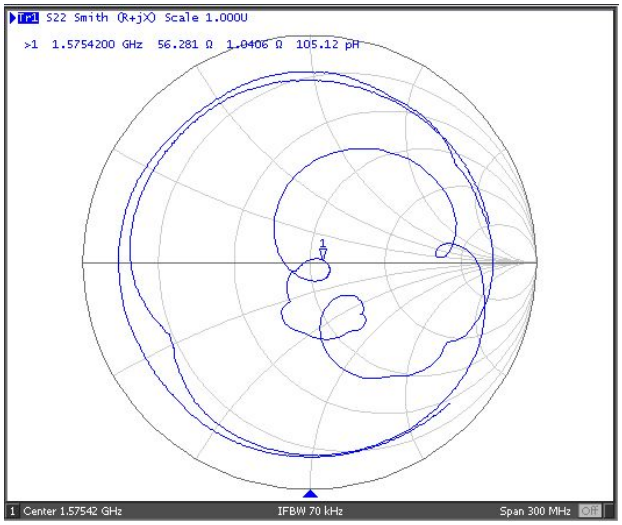
Phase Linearity & S22 VSWR



S11 Smith Chart



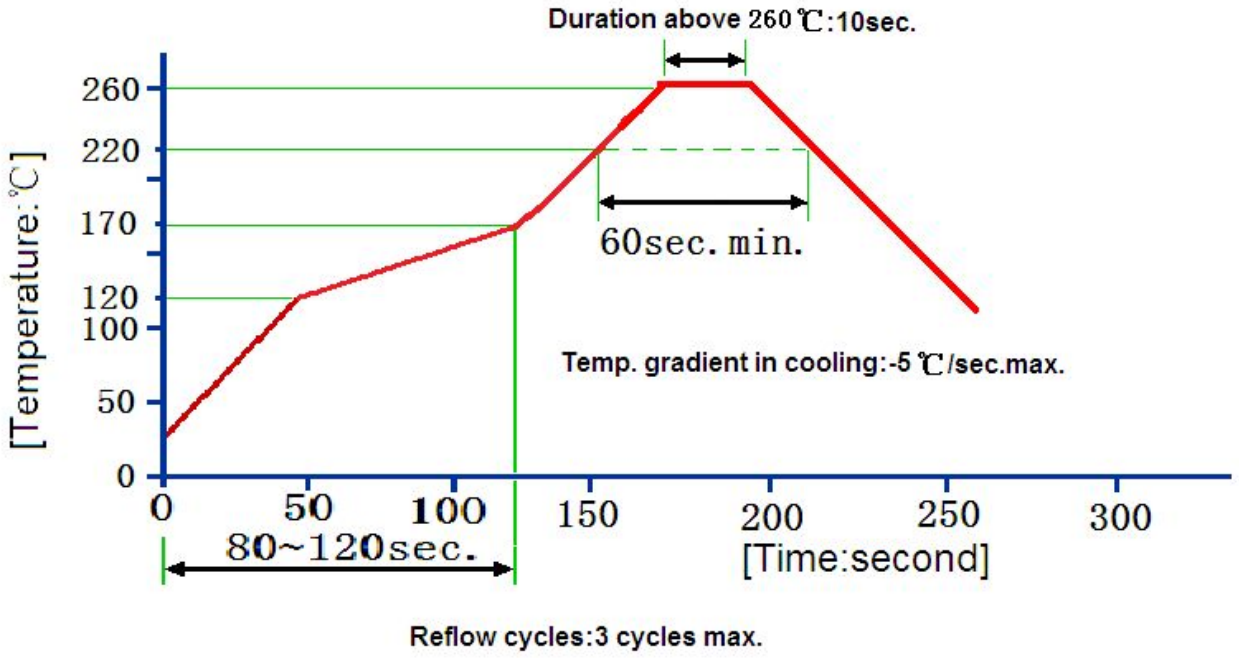
S22 Smith Chart



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

No.	Test item	Test condition
1	Temperature Storage	(1) Temperature: 85℃±2℃ , Duration: 250h , Recovery time: 2h±0.5h (2) Temperature: –55℃±3℃ , Duration: 250h ,Recovery time: 2h±0.5h
2	Humidity Test	Conditions: 60℃±2℃ , 90~95% RH Duration: 250h
3	Thermal Shock	Heat cycle conditions: TA=-55℃±3℃, TB=85℃±2℃, 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℃±5℃ 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℃±5℃ , Duration: 10±1s (2)Temperature of Soldering Iron: 350℃±10℃ , Duration: 3~4s , Recovery time : 2 ± 0.5h

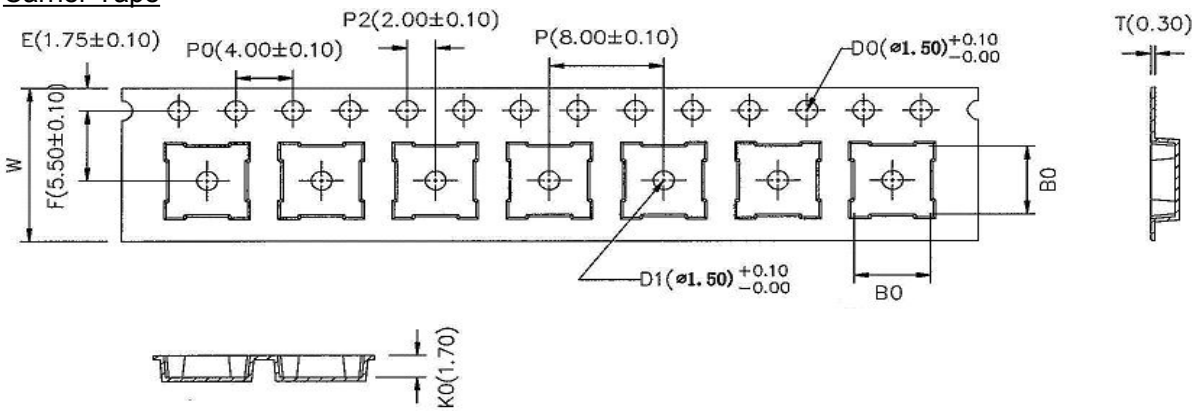
Recommended Reflow Soldering Diagram



Reflow cycles:3 cycles max.

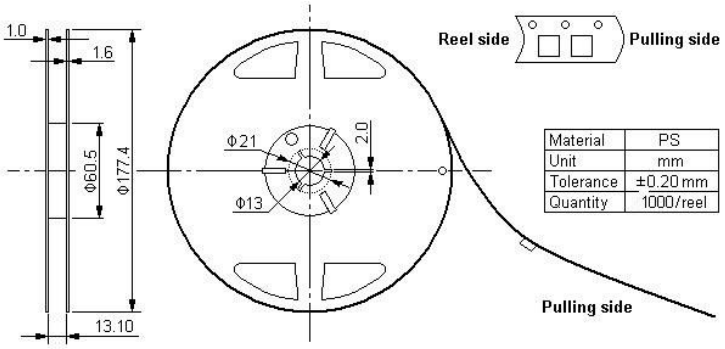
Packing Information

Carrier Tape



* B0: 5.35 for QCC8C; 4.15 for DCC6/QCC8B; 3.35 for DCC6C/QCC8D/QCS5C

Reel Dimensions



Outer Packing

Type	Quantity	Dimension	Description	Weight
Internal box	1000	190×188×42	carton box 2 reel / internal box 5 boxes / external box	0.18
External box	10000	235×205×210		1.80
		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.