

# SAW Resonator UNIT

SR DCC6 Series



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# SPECIFICATION

P/N: SJKWNAW315000DCC6

**深圳市晶科鑫实业有限公司**  
SHENZHEN CRYSTAL TECHNOLOGY INDUSTRIAL CO., LTD.

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## Features

- n 1-port Resonator
- n Ceramic Package for **Surface Mounted Technology (SMT)**
- n **RoHS** compatible
- n Package size 3.80x3.80x1.50mm<sup>3</sup>
- n Package Code DCC6
- n **Electrostatic Sensitive Device(ESD)**

## Performance

### 1-1. Maximum Ratings

Item		Value	Unit
DC Voltage	V <sub>DC</sub>	30	V
Operation Temperature	T	-40 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-55 ~ +125	°C
RF Power Dissipation	P	15	dBm

### 1-2. Electronic Characteristics

Test Temperature: 25°C ± 2°C Terminating source impedance: 50Ω Terminating load impedance: 50Ω

Item			Minimum	Typical	Maximum	Unit
Center Frequency	Absolute Frequency	f <sub>c</sub>		315.000		MHz
	Tolerance from 315.000MHz	Δf <sub>c</sub>		± 75		KHz
Insertion Loss(min)		IL		1.4	2.0	dB
Quality Factor	Unloaded Q	Q <sub>U</sub>		14956		
	50Ω Loaded Q	Q <sub>L</sub>		2145		
Temperature Stability	Turnover Temperature	T <sub>0</sub>	25	40	55	°C
	Turnover Frequency	f <sub>0</sub>		f <sub>c</sub>		
	Frequency Temperature Coefficient	FTC		0.032		ppm/°C
Frequency Aging	Absolute Value during the First Year	f <sub>A</sub>		≤ 10		ppm/yr
DC Insulation Resistance between Any Two Pins			1.0			MΩ
RF Equivalent RLC Model	Motional Resistance	R <sub>M</sub>		16.6	23.5	Ω
	Motional Inductance	L <sub>M</sub>		129		μH
	Motional Capacitance	C <sub>M</sub>		1.95		fF
	Static Capacitance	C <sub>0</sub>	2.80	3.00	3.20	pF

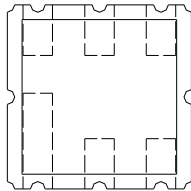
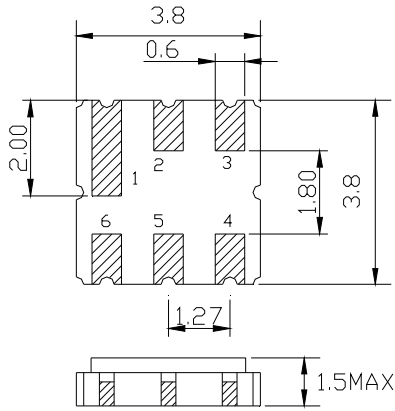
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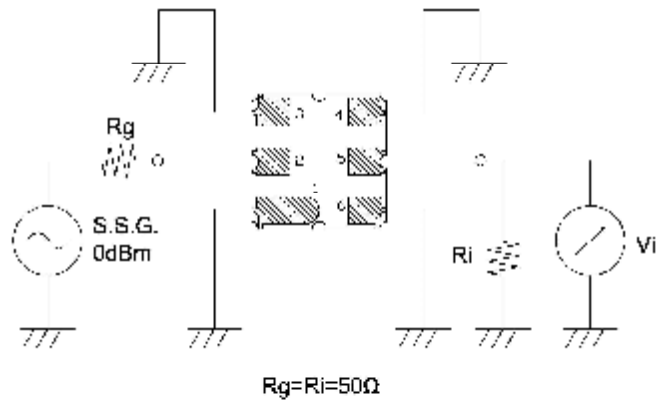
## Package Dimension (DCC6)



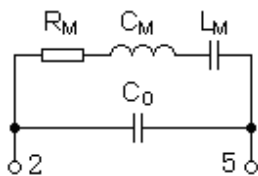
## Pin Configuration

2	Input
5	Output
1,3,4,6	Ground

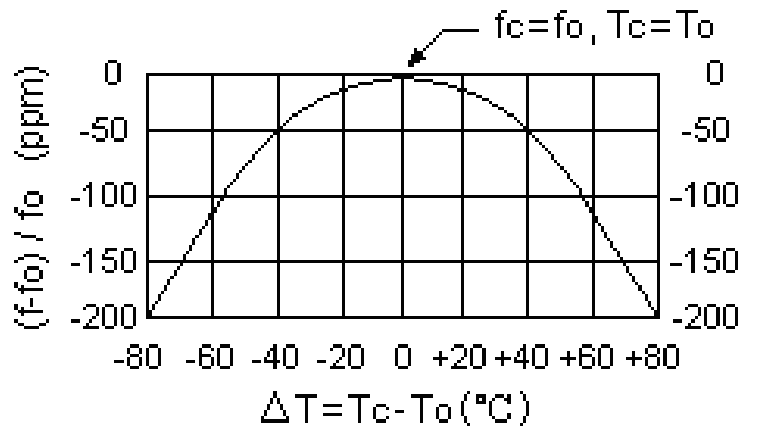
## Test Circuit



## Equivalent LC Model



## Temperature Characteristics



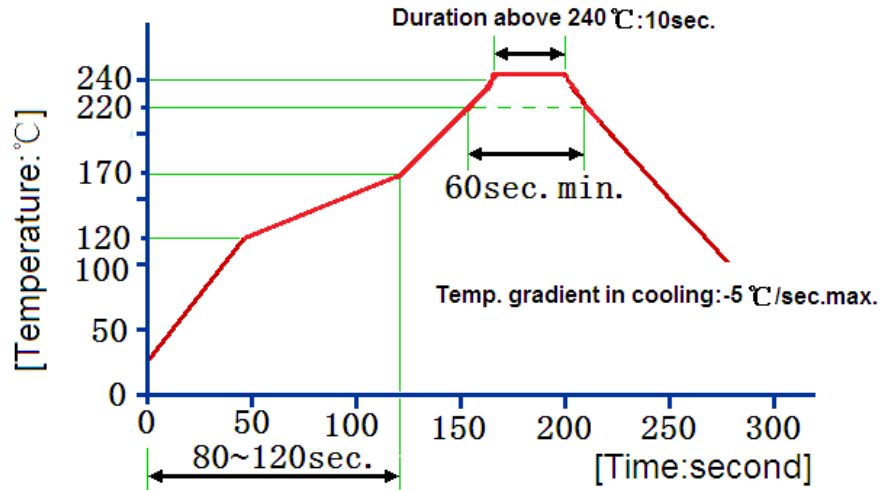
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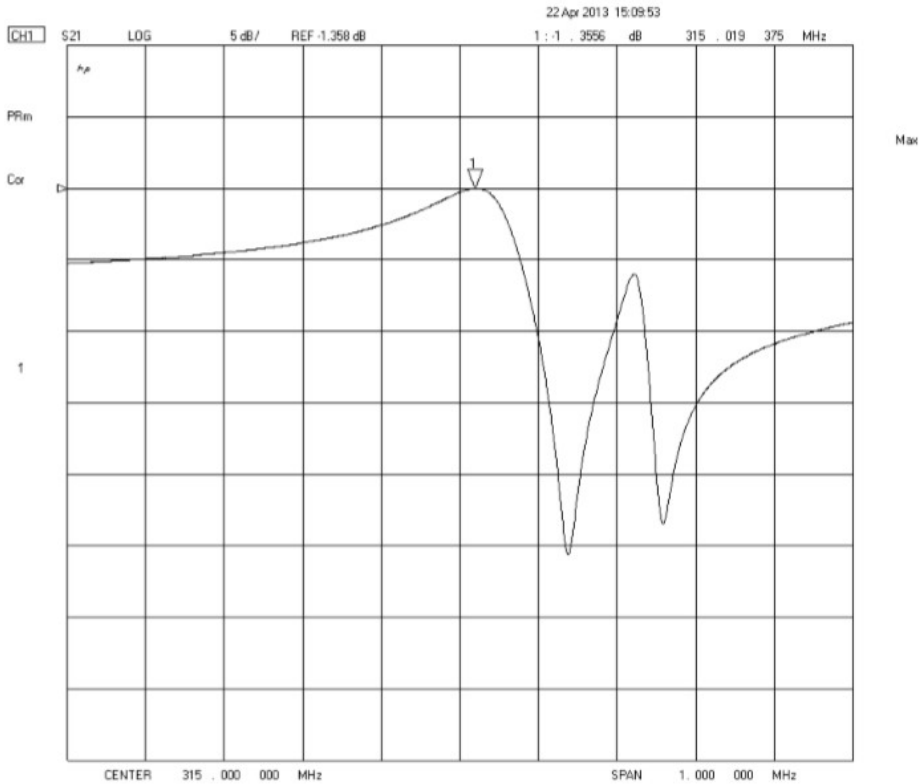


## Recommended Reflow Soldering Diagram



Reflow cycles: 3 cycles max.

## Typical Frequency Response



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

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No.	Test item	Test condition
1	Temperature Storage	(1) Temperature: $85^{\circ}\text{C}\pm 2^{\circ}\text{C}$ , Duration: 250h , Recovery time: $2\text{h}\pm 0.5\text{h}$ (2) Temperature: $-55^{\circ}\text{C}\pm 3^{\circ}\text{C}$ , Duration: 250h ,Recovery time: $2\text{h}\pm 0.5\text{h}$
2	Humidity Test	Conditions: $60^{\circ}\text{C}\pm 2^{\circ}\text{C}$ , 90~95% RH      Duration: 250h
3	Thermal Shock	Heat cycle conditions: $\text{TA}=-40^{\circ}\text{C}\pm 3^{\circ}\text{C}$ , $\text{TB}=85^{\circ}\text{C}\pm 2^{\circ}\text{C}$ , $t_1=t_2=30\text{min}$ , Switch time: $\leq 3\text{min}$ , Cycle time: 100 times , Recovery time : $2\text{h}\pm 0.5\text{h}$ .
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: $245^{\circ}\text{C}\pm 5^{\circ}\text{C}$ Duration: 3.0s--5.0s Depth: DIP--2/3 , SMD--1/5
7	Resistance to Soldering Heat	(1)Thickness of PCB:1mm , Solder condition: $260^{\circ}\text{C}\pm 5^{\circ}\text{C}$ , Duration: $10\pm 1\text{s}$ (2)Temperature of Soldering Iron: $350^{\circ}\text{C}\pm 10^{\circ}\text{C}$ , Duration: 3~4s , Recovery time : $2 \pm 0.5\text{h}$

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