



APPROVAL SHEET

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

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Part No.	:	SFR315K
Pages	:	7
Date	:	2015/1/21
Revision	:	1.0

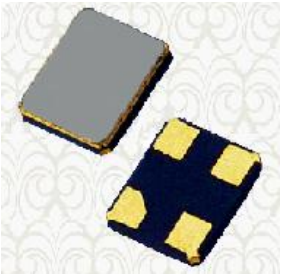
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History Record

Date	Part No.	Version No.	Modify Content	Remark

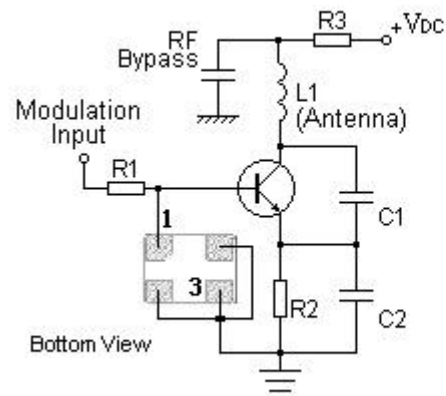
Features

- 1-port Resonator
- Ceramic Package for Surface Mounted Technology (SMT)
- RoHS compatible
- Package size 3.20x2.50x0.70mm³
- Electrostatic Sensitive Device(ESD)

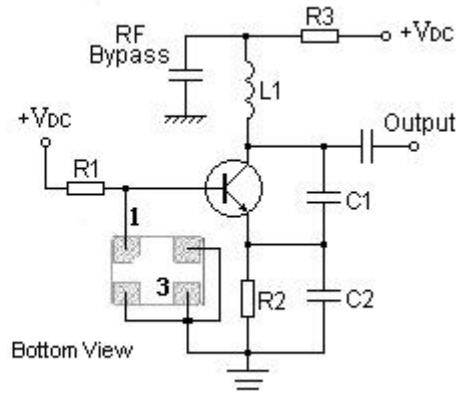


Application

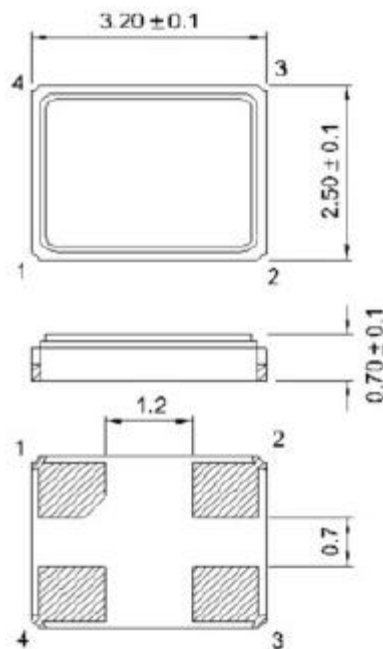
Typical Low-Power Transmitter Application



Typical Local Oscillator Application



Package Dimensions (DCC4C)



Pin Configuration

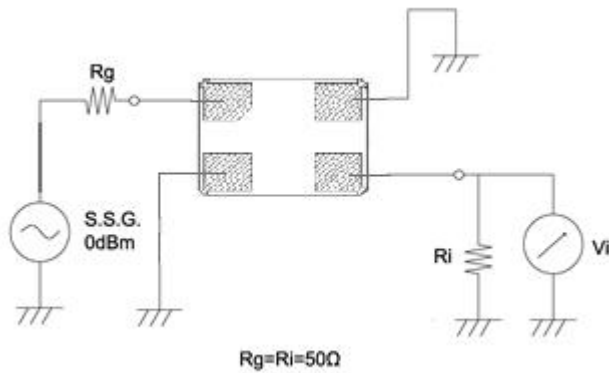
1	Input/ Output
3	Output/ Input
2,4	Ground

Marki

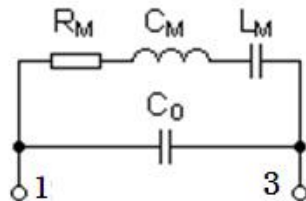


SF	Trademark
R	SAW Resonator
315K	Part number

Test Circuit



Equivalent LC Model



Performance

Maximum Rating

Item		Value	Unit
DC Voltage	V_{DC}	± 30	V
Operation Temperature	T	-40 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +85	°C
RF Power Dissipation	P	15	dBm

Electronic Characteristics

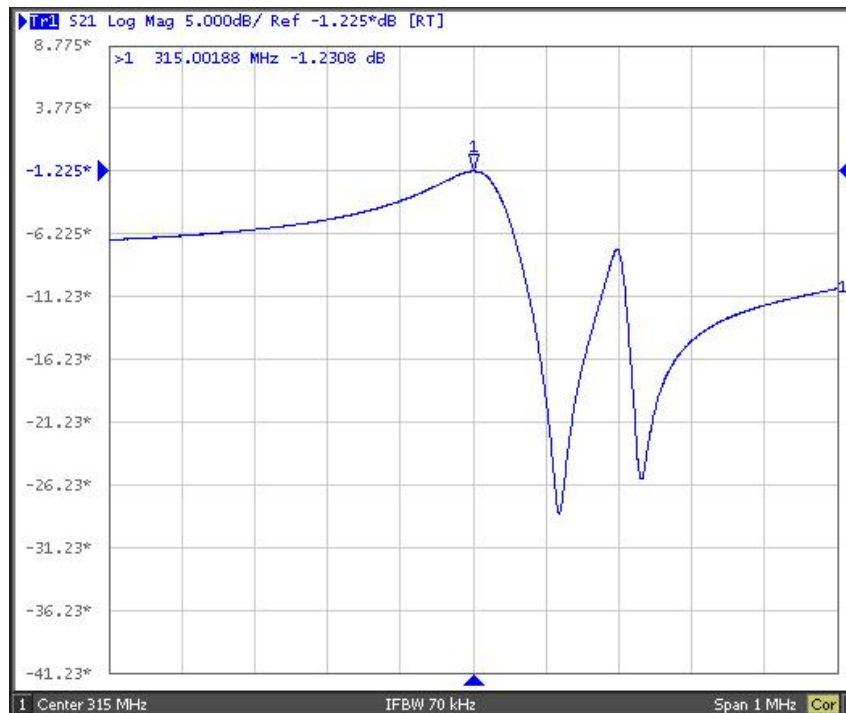
Test Temperature: 25°C±2°C

Terminating source impedance: 50Ω

Terminating load impedance: 50Ω

Item			Minimum	Typical	Maximum	Unit
Center Frequency	Absolute Frequency	f_c		315.00		MHz
	Tolerance from 315.00MHz	Δf_c		±75		KHz
Insertion Loss(min)		IL		1.3	2.0	dB
Quality Factor	Unloaded Q	Q_U		21571		
	50Ω Loaded Q	Q_L		3559		
Frequency Aging	Absolute Value during the First Year	$ f_A $		≤10		ppm/yr
DC Insulation Resistance between Any Two Pins			1.0			MΩ
RF Equivalent RLC Model	Motional Resistance	R_M		19.7	22.0	Ω
	Motional Inductance	L_M		215.5		μH
	Motional Capacitance	C_M		1.18		fF
	Static Capacitance	C_0	1.80	2.08	2.4	pF

Frequency Response



No.	Test item	Test condition
1	Temperature Storage	(1) Temperature: 85°C±2°C , Duration: 250h , Recovery time: 2h±0.5h (2) Temperature: -40°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=-40°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

The graph illustrates a two-stage heating process. The temperature starts at 35°C at 0 seconds. It rises to 180°C at 150 seconds, which is labeled as 'Pre-heating 50-180°C 60-90sec'. From 150 seconds, it continues to rise to a peak of 260°C at 220 seconds, labeled as 'Max peak 260±0.5°C 20-40sec'. After the peak, the temperature decreases to 80°C at 380 seconds, labeled as 'heating 220°C 50-80sec'.

Time (Sec)	Temperature (Deg °C)
0	35
20	80
40	120
60	150
80	160
100	165
120	170
140	175
150	180
160	190
180	220
200	250
220	260
240	240
260	200
280	160
300	120
320	90
340	70
360	60
380	50

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.