ZXSF®

APPROVAL SHEET

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

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RoHS compliance

Pb Pb free

Part No.	:	SFR433K
Pages	:	6
Date	:	2014/9/11
Revision	:	1.0

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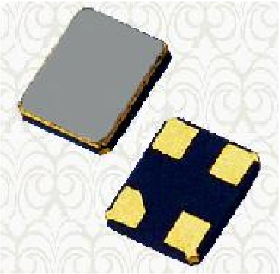
Approved by:	薛燕港

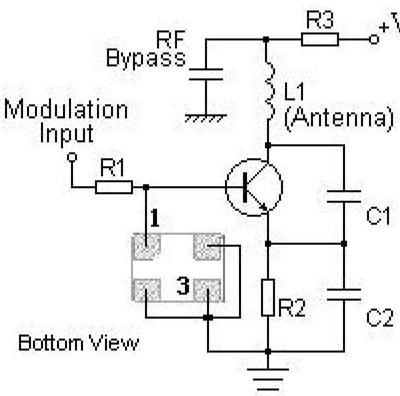
Features



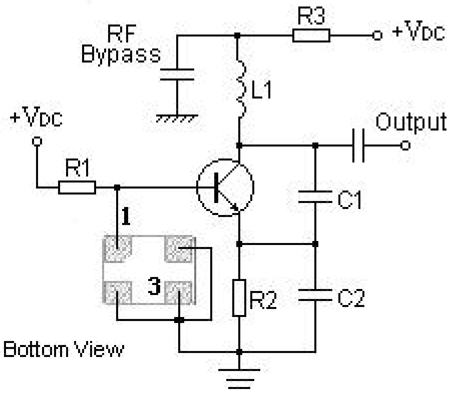
- 1-port Resonator
- Ceramic Package for **S**urface **M**ounted **T**echnology (**SMT**)
- **RoHS** compatible
- Package size 3.20x2.50x0.70mm^3
- **E**lectrostatic **S**ensitive **D**evice(**ESD)**

Application

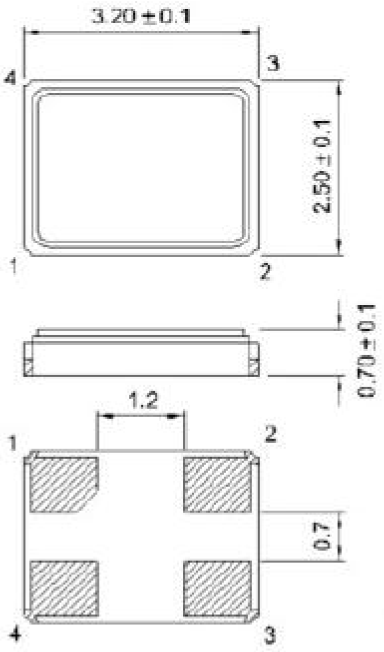
Typical Low-Power Transmitter Application



Typical Local Oscillator Application



Package Dimensions (DCC4C)



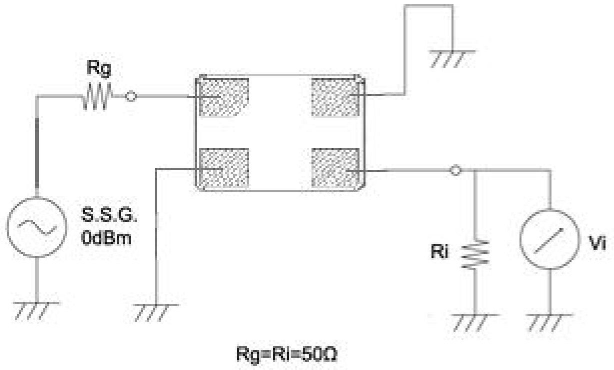
Pin Configuration

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

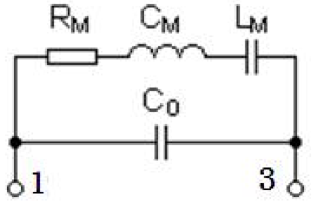
Marking

SF	Trademark
R	SAW Resonator
433K	Part number

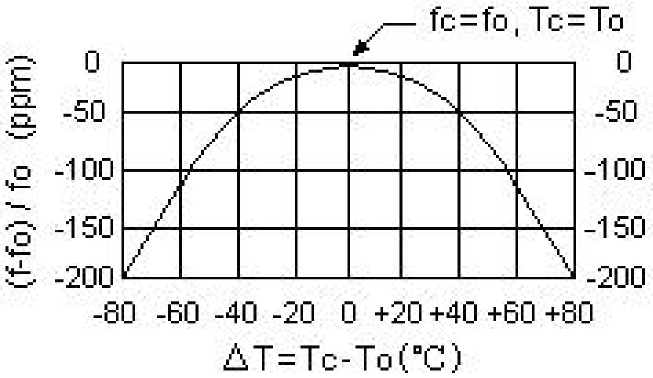
Test Circuit



Equivalent LC Model



Temperature Characteristics



The curve shown above accounts for resonator contribution only and does not include LC component temperature contributions.

Performance

Maximum Rating

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

Electronic Characteristics

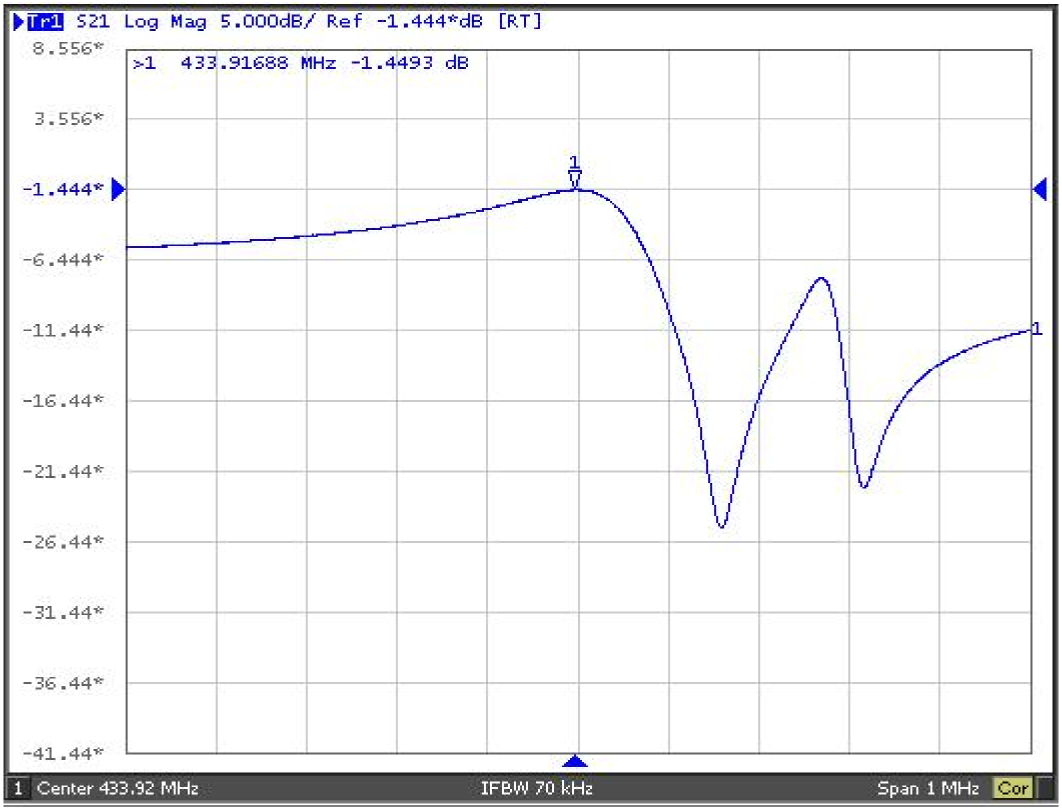
Test Temperature: 25℃±2℃

Terminating source impedance: 50Ω

Terminating load impedance: 50Ω

Item			Minimum	Typical	Maximum	Unit
Center Frequency	Absolute Frequency	f_c		433.920		MHz
	Tolerance from 433.920MHz	$\triangle f_c$		±75		KHz
Insertion Loss(min)		IL		1.5	2.0	dB
Quality Factor	Unloaded Q	Q_U		18362		
	50Ω Loaded Q	Q_L		2150		
Temperature Stability	Turnover Temperature	T_0	25	40	55	℃
	Turnover Frequency	f_0		f_c		
	Frequency Temperature Coefficient	FTC		0.032		ppm/℃
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		13.2	18.0	Ω
	Motional Inductance	L_M		89.4	110.2	μH
	Motional Capacitance	C_M		1.5		fF
	Static Capacitance	C_0	1.45	1.75	2.05	pF

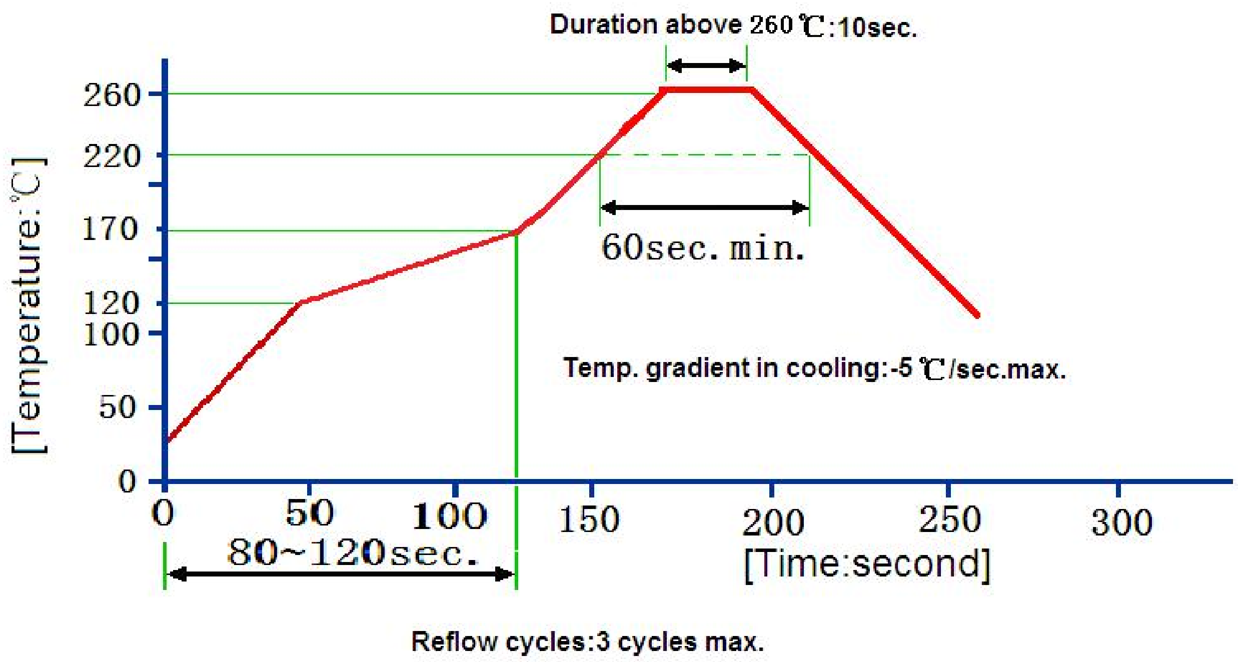
Frequency Response



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=-40℃±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



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.