APPROVAL SHEET

RoHS Compliant

CUSTOMER：	
DESCRIPTION：	SAW RESONATOR
MANUFACTURER PART NO.:	SAW Resonator 433.920MHz 3.2*2.5*0.7mm SMD
CUSTOMER PART NO:	
USED IN MODEL:	
REVISION	A1

承　　认　　APPROVAL		
工程部 TECHNOLOGY DEPT.	品质部 QUALITY DEPT.	采购部 PURCHASING DEPT.

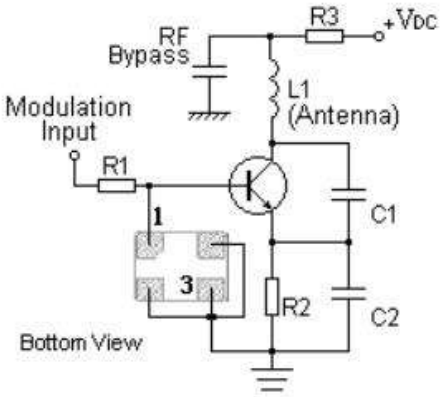
Date: January 22, 2024

Features

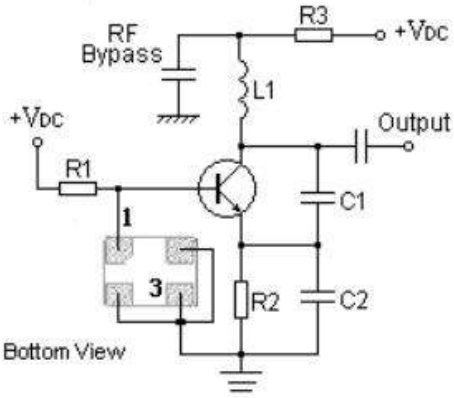
- 1-port Resonator
- Ceramic Package for **S**urface **M**ounted **T**echnology (**SMT**)
- **RoHS** compatible
- Package size 3.20x2.50x0.70mm^3
- Electrostatic Sensitive Device(ESD)

Application

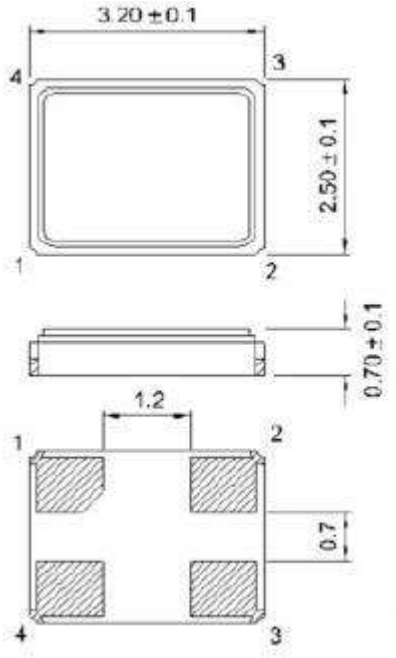
Typical Low-Power Transmitter Application



Typical Local Oscillator Application



Package Dimensions (QCC4A)



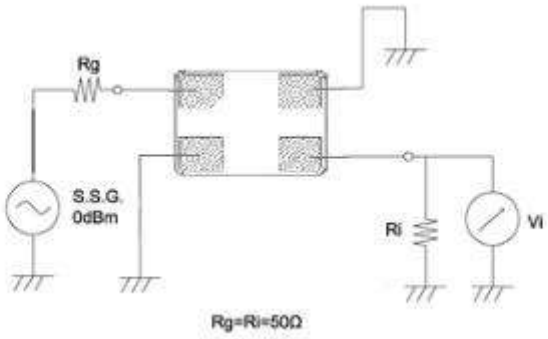
Pin Configuration

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

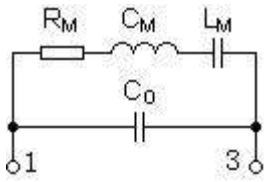
Marking Description

●	Pin 2
R	SAW Resonator
433	Part Number

Test Circuit



Equivalent LC Model



Performance

Maximum Rating

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

Electronic Characteristics

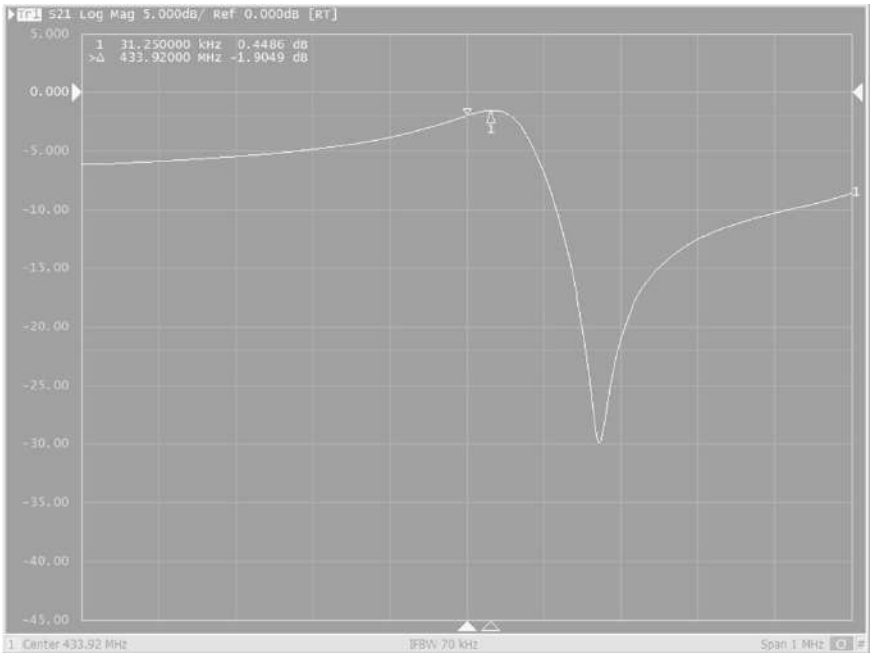
Test Temperature: 25℃±2℃

Terminating source impedance: 50Ω

Terminating load impedance: 50Ω

Item			Minimum	Typical	Maximum	Unit
Center Frequency	Absolute Frequency	f_c		433.920		MHz
	Tolerance from 433.92MHz	$\triangle f_c$		±75		KHz
Insertion Loss(min)		IL			1.5	2.0
Quality Factor	Unloaded Q	Q_U		18362		
	50Ω Loaded Q	Q_L		2150		
Frequency Aging	Absolute Value during the First Year	$\|f_A\|$		≤10		ppm/yr
DC Insulation Resistance between Any Two Pins			1.0	1.0		
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	bF

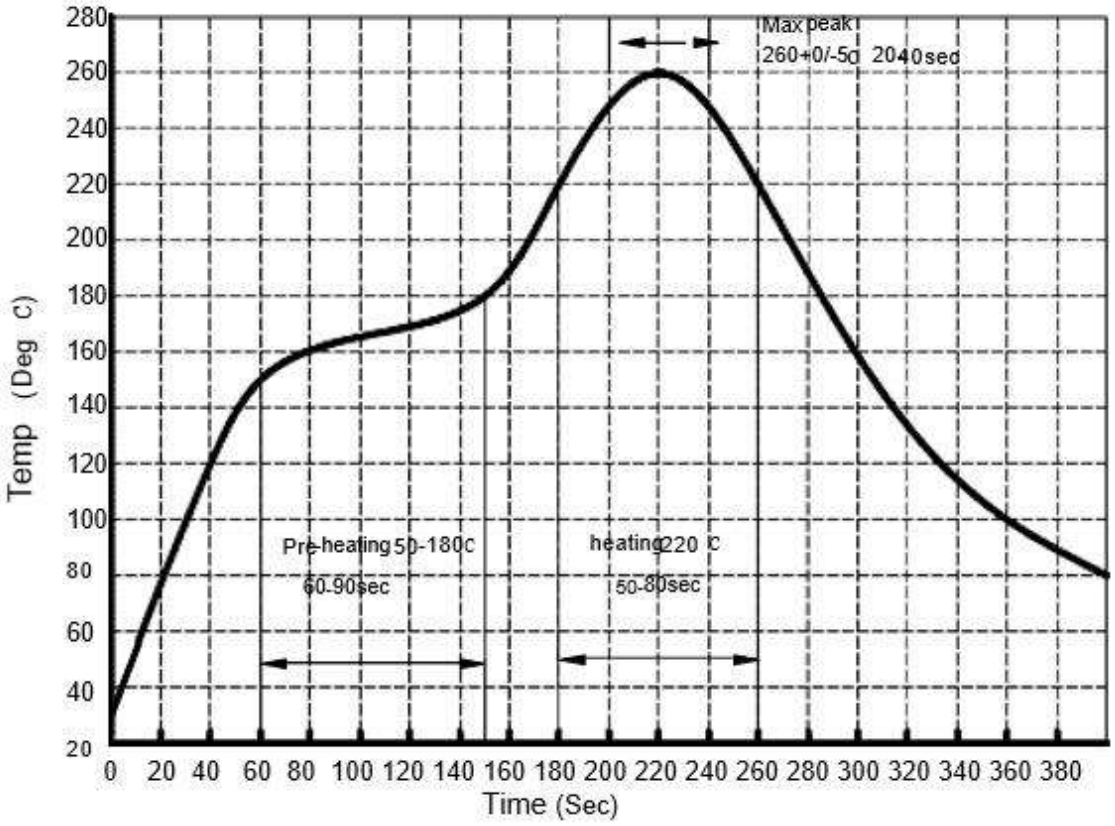
Frequency Response



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: –40℃±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: 10~55 Hz Directions: X,Y and Z	Amplitude:1.5mm Duration: 2h
5	Drop Test	Cycle time: 10 times	Height: 1.0m
6	Solder Ability Test	Temperature: 245℃±5℃ Depth: DIP--2/3 , SMD-- 1/5	Duration: 3.0s--5.0s
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.