Win-win To Long

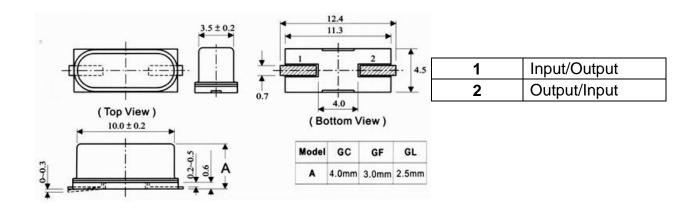
Features

- 1-port Resonator
- Metal Case for HC-49S-SMD
- RoHS compatible
- Package size 10.24x3.70x4.0mm³
- Electrostatic Sensitive Device(ESD)

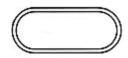


Package Dimensions (HC-49S-SMD)

Pin Configuration



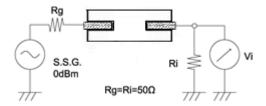
Marking



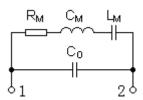
WTL	Trademark	
R SAW Resonator		
433	Part number	



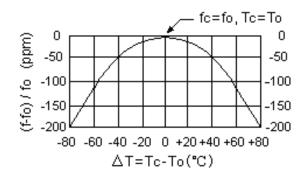
Test Circuit



Equivalent LC Model

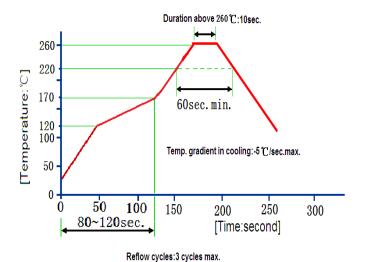


Temperature Characteristics Diagram



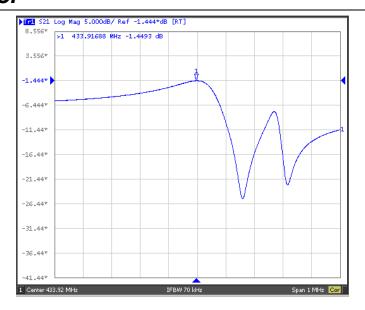
The curve shown above accounts for resonator contribution only and does not include LC component

Recommended Reflow Soldering



Frequency Response





Performance

Maximum Rating

Item		Value	Unit
DC Voltage	V_{DC}	10	V
Operation Temperature	Т	-40 ~ +85	$^{\circ}$ C
Storage Temperature	T _{stg}	-55 ~ +125	$^{\circ}$ C
RF Power Dissipation	Р	10	dBm

Electronic Characteristics

Test Temperature: 25°C±2°C

Terminating source impedance: 50Ω Terminating load impedance: 50Ω

Item		Minimu	Typical	Maximu	Unit	
			m		m	
Center	Absolute Frequency	f _c		433.920		MHz
Frequency	Tolerance from 433.920MHz	Δ f _c		±75		KHz
Insertion Loss(min)		IL		1.8	2.4	dB
Quality	Unloaded Q	Q_U		18362		
Factor	50Ω Loaded Q	Q_L		2150		
Temperatu	Turnover Temperature	T ₀	25	40	55	$^{\circ}\!\mathbb{C}$



re Turnover Frequency		f_0		f _c		
Stability	Frequency Temperature Coefficient	FTC		0.032		ppm/℃
Frequency	Absolute Value during the	f _A		≤10		ppm/yr
Aging	First Year					
DC Insulation Resistance between Any			1.0			МΩ
Two Pins						
RF	Motional Resistance	R _M		13.2	18.0	Ω
Equivalent	Motional Inductance	L _M		89.4	110.2	μH
RLC	Motional Capacitance	См		1.5		fF
Model	Static Capacitance	C ₀	1.45	1.75	2.05	pF

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

No	Test item	Test condition		
1	Temperature Storage	 (1) Temperature: 85°C±2°C, Duration: 250h,Recovery time: 2h±0.5h (2) Temperature: -55°C±3°C, 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°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	Frequency of vibration: 10~55Hz Amplitude:1.5mm		
4	Fatigue	Directions: X,Y and Z Duration: 2h		
5	Drop Test	Cycle time: 10 times Height: 1.0m		
6	Solder Ability	Temperature: 245°C±5°C Duration: 3.0s5.0s		
0	Test	Depth: DIP2/3 , SMD1/5		
7	Resistance to	(1)Thickness of PCB:1mm,Solder condition: 260 ℃±5 ℃,Duration: 10±1s		
/	Soldering Heat	(2)Temperature of Soldering Iron: 350°C±10°C , Duration: 3~4s ,		



Recovery time: 2 ± 0.5h	
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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.