

# P/N: WTL6A20775

## Saw Resonator

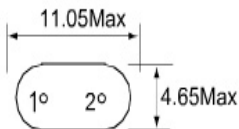
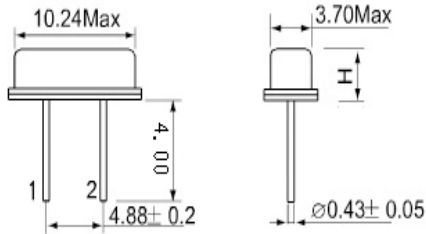


### Features

- 1-port Resonator
- Metal Case for HC-49S
- **RoHS** compatible
- Package size 10.24x3.70x11.05mm<sup>3</sup>
- **Electrostatic Sensitive Device(ESD)**



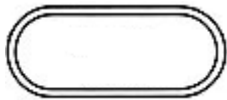
### Package Dimensions (HC-49S)



### Pin Configuration

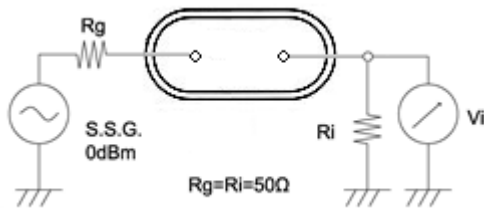
1	Input/Output
2	Output/Input

**Marking**

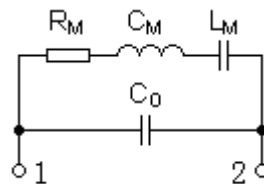


<b>WTL</b>	Trademark
<b>R</b>	SAW Resonator
<b>315</b>	Part number

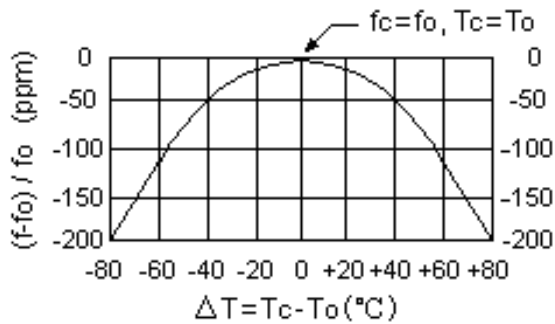
**Test Circuit**



**Equivalent LC Model**

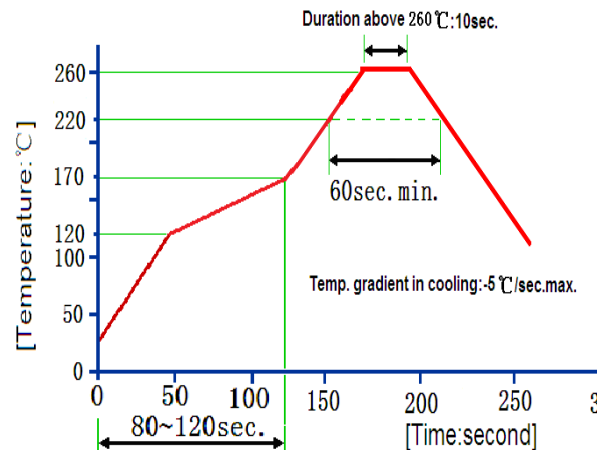


**Temperature Characteristics Diagram**



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

**Recommended Reflow Soldering**

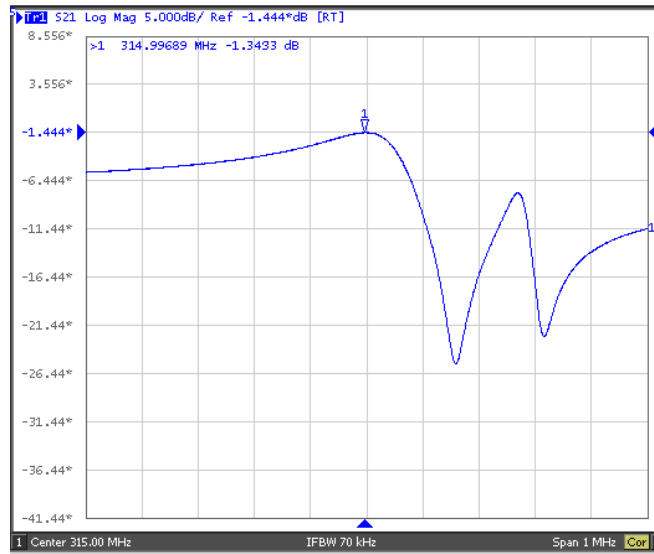


Reflow cycles: 3 cycles max.

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## Frequency Response



## Performance

### Maximum Rating

Item		Value	Unit
DC Voltage	$V_{DC}$	10	V
Operation Temperature	T	-40 ~ +85	°C
Storage Temperature	$T_{stg}$	-55 ~ +125	°C
RF Power Dissipation	P	10	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	$\Delta f_c$		±75		KHz
Insertion Loss(min)		IL		1.8	2.3	dB
Quality Factor	Unloaded Q	$Q_U$		21566		

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	50Ω Loaded Q	$Q_L$		3554		
Temperature Stability	Turnover Temperature	$T_0$	25	40	55	°C
	Frequency Temperature Coefficient	FTC		0.032		ppm/°C
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

**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°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 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°C±5°C Duration: 3.0s--5.0s Depth: DIP--2/3, SMD--1/5

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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
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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.