868.35 MHz Two Port SAW Resonator

- ***Ideal for 868.35 MHz Transmitters***
- ***Nominal Phase Shift of 180° at Resonance***
- ***Quartz Stability***
- ***Ultra Miniature Ceramic SMD Package (QCC8C)***

SQ5902

Absolute Maximum Rating (Ta=25°C)			
Parameter		Rating	Unit
CW RF Power Dissipation	P	10	dBm
DC Voltage	V_{DC}	±30	V
Operating Temperature Range	T_A	-10 ~ +60	°C
Storage Temperature Range	T_{stg}	-40 ~ +85	°C

Electronic Characteristics						
Parameter		Sym	Minimum	Typical	Maximum	Unit
Frequency (25°C)	Nominal Frequency	f_c	NS	868.35	NS	MHz
	Tolerance from 868.35 MHz	Δf_c	-	-	± 150	KHz
Insertion Loss		IL	-	5.5	8.0	dB
Quality Factor	Unloaded Q-Value	Q_u	-	6,260	-	-
	50Ω Loaded Q-Value	Q_L	-	3,300	-	-
Temperature Stability	Turnover Temperature	T_o	25	-	55	°C
	Turnover Frequency	f_o	-	f_c	-	KHz
	Frequency Temperature Coefficient	FTC	-	0.032	-	ppm/°C^2
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	-	111.35	151	Ω
	Motional Inductance	L_M	-	127.8974	-	μH
	Motional Capacitance	C_M	-	0.2629	-	fF
	Shunt Static Capacitance	C_o	1.20	1.35	1.50	pF

NS = Not Specified

Note:

1. The frequency f_c is the frequency of minimum IL with the resonator in the specified test fixture in a 50Ω test system with VSWR ≤ 1.2:1.
2. Unless noted otherwise, case temperature TC = +25°C±2°C.
3. Frequency aging is the change in fC with time and is specified at +65°C or less. Aging may exceed the specification for prolonged temperatures above +65°C. Typically, aging is greatest the first year after manufacture, decreasing in subsequent years.
4. Turnover temperature, T0, is the temperature of maximum (or turnover) frequency, f0. The nominal frequency at any case temperature, TC, may be calculated from: $f = f_o [1 - FTC (T_O - T_C)^2]$.
5. This equivalent RLC model approximates resonator performance near the resonant frequency and is provided for reference only. The capacitance C_O is the measured static (nonmotional) capacitance between input terminal and ground or output terminal and ground. The measurement includes case parasitic capacitance.
6. Derived mathematically from one or more of the following directly measured parameters: f_c, IL, 3 dB bandwidth, f_C versus T_C, and Co.
7. The specifications of this device are based on the test circuit shown above and subject to change or obsolescence without notice.
8. Typically, equipment utilizing this device requires emissions testing and government approval, which is the responsibility of the equipment manufacturer.
9. Our liability is only assumed for the Surface Acoustic Wave (SAW) component(s) per se, not for applications, processes and circuits implemented within components or assemblies.
10. For questions on technology, prices and delivery, please contact our sales offices or e-mail to sales@vanlong.com.

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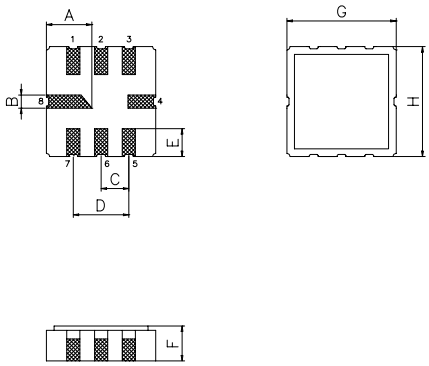
Package Dimensions (QCC8C)



Electrical Connections

Terminals	Connection
2	Terminal 1
6	Terminal 2
4,8	Case-Ground
1,3,5,7	NC

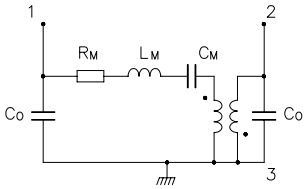
Package Dimensions

Dimensions	Nom (mm)	Dimensions	Nom (mm)
A	2.08	E	1.20
B	0.60	F	1.35
C	1.27	G	5.00
D	2.54	H	5.00

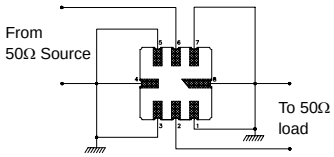
Marking

1. Q5902 - Part Code
2. Frequency in MHz
3. Date Code:
   Y : Last digit of year
   WW : Week No.

Equivalent LC Model and Test Circuit



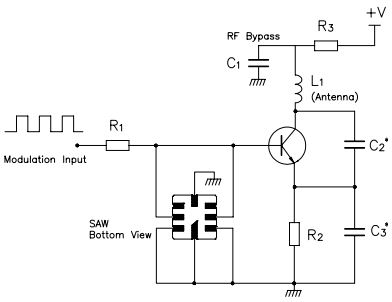
Equivalent LC Model



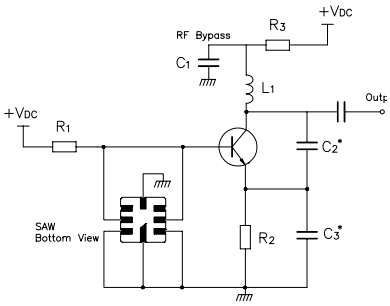
Test Circuit

Typical Application Circuit

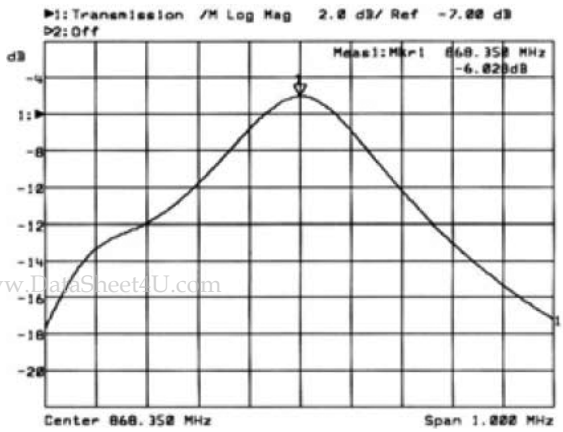
Low Power Transmitter Application



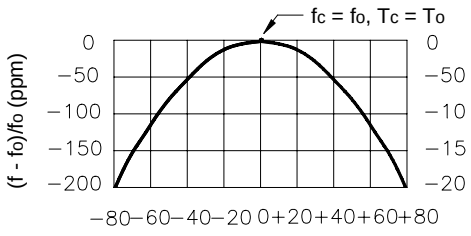
Local Oscillator Application



Typical Frequency Response



Temperature Characteristics



ΔT= Tc –To (°C)

The curve shown above accounts for resonator contribution only and does not include oscillator temperature characteristics.

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