868.35 MHz One Port SAW Resonator

VANLONG

- Ideal for 868.35 MHz Transmitters
- Very Low Insertion Loss
- Quartz Stability
- Ultra Miniature Ceramic SMD Package (QCC4A)

SR5905

Absolute Maximum Rating (Ta=25°C)					
Parameter		Rating	Unit		
CW RF Power Dissipation	Р	0	dBm		
DC Voltage	V _{DC}	±30	V		
Operating Temperature Range	T _A	-10 ~ +60	°C		
Storage Temperature Range	$T_{ m stg}$	-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	-	1.7	2.3	dB
Quality Factor	Unloaded Q-Value	Qu	-	8,300	-	-
	50Ω Loaded Q-Value	Q_L	-	1,500	-	-
Temperature Stability	Turnover Temperature	To	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_	-	-	10	ppm/yr
DC Insulation Resistance Between any Two Pins		-	1.0	-	-	MΩ
RF Equivalent RLC Model	Motional Resistance	R _M	-	22.0	30.0	Ω
	Motional Inductance	$L_{\scriptscriptstyle M}$	-	33.5580	-	μH
	Motional Capacitance	$C_{\scriptscriptstyle M}$	-	1.0021	-	fF
	Shunt Static Capacitance	Co	2.3	2.6	2.9	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 50 Ω test system with VSWR \leq 1.2:1.
- 2. Unless noted otherwise, case temperature $TC = +25^{\circ}C \pm 2^{\circ}C$.
- 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

ww. Deap the resonant frequency and is provided for reference only. The capacitance C_0 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.
- 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.

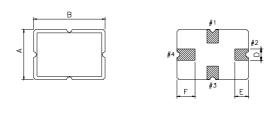
Phone: +86 10 6301 4184

Fax: +86 10 6301 9167

Email: sales@vanlong.com



Package Dimensions (QCC4A)



Marking

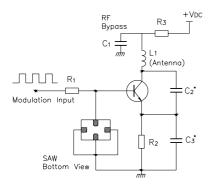
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	R5905	
	868.35	K
	YWW	
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R5905 - Part Code
 Frequency in MHz
 Date Code:

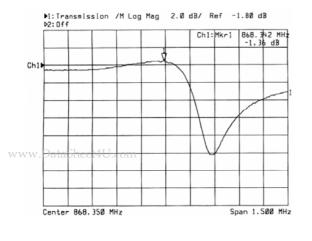
Y : Last digit of year WW : Week No.

Typical Application Circuit

Low Power Transmitter Application



Typical Frequency Response



Phone: +86 10 6301 4184	
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Fax: +86 10 6301 9167

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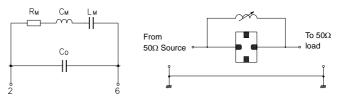
Electrical Connections

Terminals	Connection
1	Terminal 1
3	Terminal 2
2,4	Case-Ground

Package Dimensions

Dimensions	Nom (mm)	Dimensions	Nom (mm)
А	3.5	D	0.5
В	5.0	E	0.8
С	1.4	F	1.2

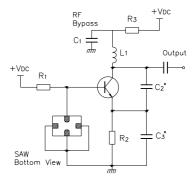
Equivalent LC Model and Test Circuit



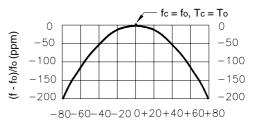
Equivalent LC Model

Typical Test Circiut

Local Oscillator Application



Temperature Characteristics



 $\Delta T = Tc - To (°C)$

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

Email: sales@vanlong.com

Web: http://www.vanlong.com SR5905