

- **Designed to Provide Front-end Selectivity in 868.35 MHz**
- **Low-Loss, Coupled-Resonator Quartz Design**
- **Simple External Impedance Matching**
- **Ultra Miniature Ceramic QCC8C SMD Package**

# SF5904

Absolute Maximum Rating (Ta=25°C)			
Parameter		Rating	Unit
Input Power Level	$P_{in}$	10	dBm
DC Voltage VDC Between Any Two Pins	$V_{DC}$	12	V
Operating Temperature Range	$T_A$	-10 ~ +60	°C
Storage Temperature Range	$T_{stg}$	-40 ~ +85	°C

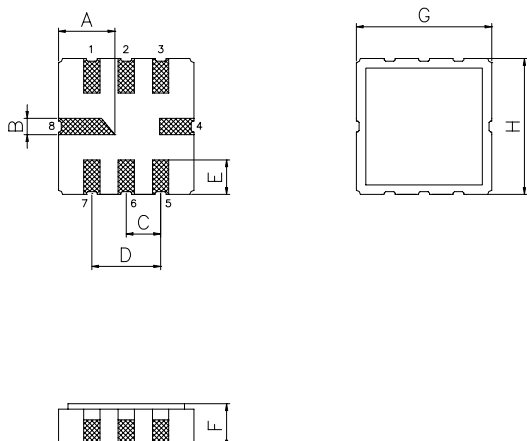
Electronic Characteristics						
Parameter		Sym	Minimum	Typical	Maximum	Unit
Nominal Frequency (at 25°C) (Center frequency between 3dB point)		$f_c$	NS	868.35	NS	MHz
Insertion Loss Attenuation		$IL$	-	3.5	5.5	dB
3dB Passband		$BW_3$	-	1.2	-	MHz
Passband Ripple		-	-	-	±1.0	dB
Rejection	At $f_c - 21.4$ MHz (Image)	-	30	42	-	dB
	At $f_c - 10.7$ MHz (LO)	-	20	35	-	dB
	Ultimate	-	-	60	-	dB
Temperature Stability	Operating Temperature Range	$T_C$	-10	-	+60	°C
	Turnover Temperature	$T_O$	25	-	55	°C
	Turnover Frequency	$f_O$	-	$f_c$	-	MHz
	Frequency Temperature Coefficient	$FTC$	-	0.032	-	ppm/C <sup>2</sup>
Frequency Aging	Absolute Value during the First Year	$ fA $	-	-	10	ppm/yr
DC Insulation Resistance Between any Two Pins		-	1.0	-	-	MΩ

NS = Not Specified

**Notes:**

- The frequency  $f_c$  is defined as the midpoint between the 3dB frequencies.
- Unless noted otherwise, all measurements are made with the filter installed in the specified test fixture that is connected to a 50Ω test system with VSWR ≤ 1.2:1. The test fixture L and C are adjusted for minimum insertion loss at the filter center frequency,  $f_c$ . Note that insertion loss, bandwidth, and passband shape are dependent on the impedance matching component values and quality.
- Unless noted otherwise, specifications apply over the entire specified operating temperature range.
- Frequency aging is the change in  $f_c$  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.
- Turnover temperature,  $T_O$ , is the temperature of maximum (or turnover) frequency,  $f_O$ . The nominal frequency at any case temperature,  $T_C$ , may be calculated from:  $f = f_O [1 - FTC (T_O - T_C)^2]$ .
- The specifications of this device are based on the test circuit shown above and subject to change or obsolescence without notice.
- All equipment designs utilizing this product must be approved by the appropriate government agency prior to manufacture or sale.
- 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.
- For questions on technology, prices and delivery please contact our sales offices or e-mail sales@vanlong.com.

Package Dimensions (QCC8C)



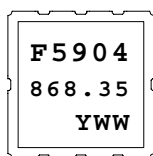
Electrical Connections

Terminals	Connection
1	Input
2	Input Ground
5	Output
6	Output Ground
3,7	To be Grounded
4,8	Case Ground

Package Dimensions

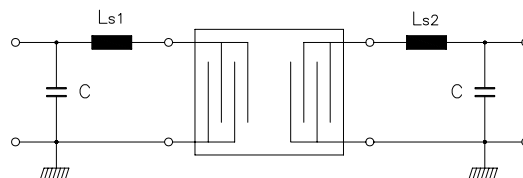
Dimensions	Nom (mm)	Dimensions	Nom (mm)
A	2.08	E	1.20
B	0.60	F	1.35
C	1.27	G	5.00
D	2.54	H	5.00

Marking



1. F5904 - Part Code
2. Frequency (MHz) in 5 digits
3. Date Code:  
 Y : Last digit of year  
 WW : Week No.

Test Circuit



C = 4 ~6 pF  
 Ls1 = Ls2 = 2 turns of 0.5mm insulated copper, 3.0mm ID

Typical Frequency Response

