

- **Designed to Band Pass in 868.30 MHz**
- **Low-Loss, High Attenuation**
- **Simple External Impedance Matching**
- **Ultra Miniature Ceramic QCC8C SMD Package**
- **Complies with Directive 2002/95/EC (RoHS Compliant)**

# SF5902

ABSOLUTE MAXIMUM RATING ( $T_A=25^{\circ}\text{C}$ )		
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	$^{\circ}\text{C}$
Storage Temperature Range $T_{stg}$	-40 ~ +85	$^{\circ}\text{C}$

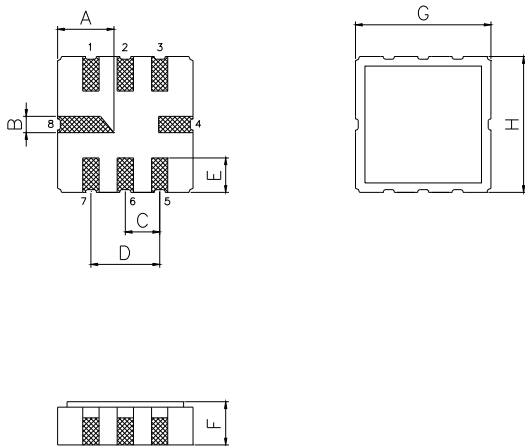
ELECTRONIC CHARACTERISTICS					
Parameter	Sym	Minimum	Typical	Maximum	Unit
Nominal Frequency (at 25 $^{\circ}\text{C}$ ) (Center frequency between 3dB point)	$f_c$	NS	868.30	NS	MHz
Insertion Loss Attenuation 855.30 ... 881.30 MHz	$IL$	-	3.5	5.0	dB
3dB Bandwidth	$BW_3$	-	36.0	-	MHz
Passband Ripple 863.00 ... 865.00 MHz	$\Delta\alpha$	-	1.5	-	dB
Absolute Attenuation					
DC ... 753.30 MHz	$\alpha_{rel}$	25	27	-	dB
753.30 ... 833.30 MHz		30	35	-	dB
903.30 ... 1033.30 MHz		30	40	-	dB
1033.30 ... 1953.30 MHz		20	25	-	dB
Frequency Aging Absolute Value during the First Year	$ f_A $	-	-	10	ppm/yr
DC Insulation Resistance Between any Two Pins	-	1.0	-	-	$M\Omega$
Input / Output Impedance (nominal)	-	-	50	-	$\Omega$

NS = Not Specified

**Notes:**

1. The frequency  $f_c$  is defined as the midpoint between the 3dB frequencies.
2. Unless noted otherwise, all measurements are made with the filter installed in the specified test fixture that is connected to a 50 $\Omega$  test system with VSWR  $\leq 1.2:1$ . 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.
3. Unless noted otherwise, specifications apply over the entire specified operating temperature range.
4. The specifications of this device are based on the test circuit shown above and subject to change or obsolescence without notice.
5. All equipment designs utilizing this product must be approved by the appropriate government agency prior to manufacture or sale.
6. 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.
7. 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 Ground
2	Input
5	Output Ground
6	Output
3,7	To be Grounded
4,8	Case Ground

Package Dimensions

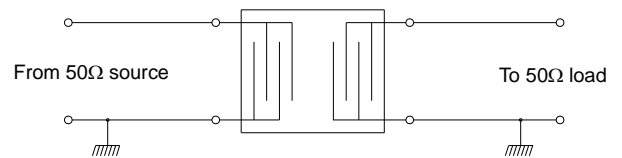
Dimensions	Nom (mm)	Dimensions	Nom (mm)
A	2.08	E	1.20
B	0.60	F	1.35
C	1.27	G	5.00
D	2.54	H	5.00

MARKING

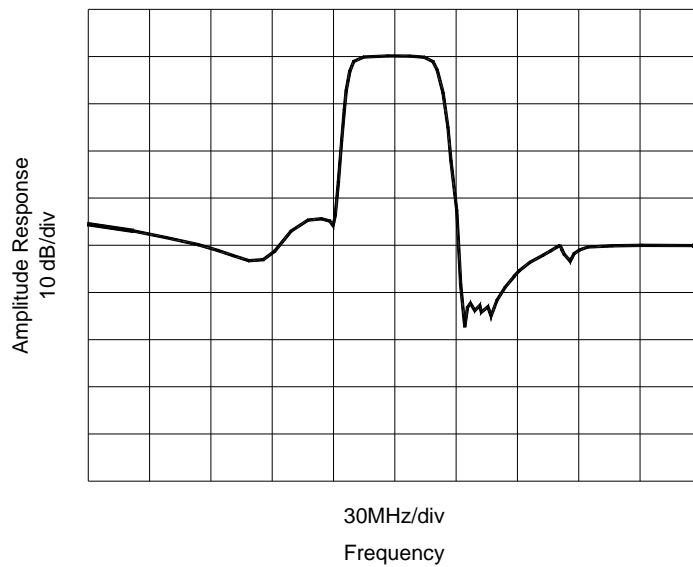


- Laser or ink marking
- SF5902 - Part Code
  - Date Code:  
Y : Last digit of year  
WW : Week No.

TEST CIRCUIT



TYPICAL FREQUENCY RESPONSE



ENVIRONMENTAL CHARACTERISTICS		
Item	Condition of Test	Requirements
Random Drop	The Filter shall be measured after 3 times random drops from the height of 1.0M on concrete floor.	No visible damage and the measured values shall meet the Electronic Characteristics
Vibration	The Filter shall be measured after being applied vibration of amplitude of 1.5mm with 10 to 55Hz bands of vibration frequency to each of 3 perpendicular directions for 1 hour.	
Lead Pulling Test	Weight along with the direction of lead without any shock 1.0 Kg.	
Lead bending Test	Lead shall be subject to withstand against 90 bending at its stem. This operation shall be done toward both directions.	
Resistance to Soldering Heat	Lead terminals are immersed up to 1.5mm from the Filter's body in solder bath of 270°C ± 10°C for 10 ± 1 seconds, and then the Filter shall be measured after being placed in natural condition for 2 hour.	
Solderability	Lead terminals are immersed in resin for 5 seconds and then immersed in soldering bath of 270°C ± 10°C for 2 ± 0.5 seconds.	
High Temperature	After being placed in a chamber with +85°C ± 2°C for 96 ± 4 hours and then being placed in natural condition for 2 hour. The Filter shall be measured.	
Low Temperature	After being placed in a chamber with -40°C ± 2°C for 96 ± 4 hours and then being placed in natural condition for 2 hour. The Filter shall be measured.	
Humidity	After being placed in a chamber with 90 to 95% R.H. at +40°C ± 2°C for 96 ± 4 hours and then being placed in natural condition for 2 hour. The Filter shall be measured.	
Heat Shock	After being kept at room temperature, the Filter shall be placed at temperature of -40°C for 30 minutes, then the Filter shall be immediately placed at temperature of 85°C, after 30 minutes at temperature of 85°C, the Filter shall be returned to -40°C again. After 5 times above cycles, the Filter shall be returned to room temperature, after 2 hour in natural condition, the Filter shall be measured.	

