

- **Ideal Front-End Filter for Wireless Receivers**
- **Low-Loss, Coupled-Resonator Quartz Design**
- **Simple External Impedance Matching**
- **Rugged, Hermetic, Low Profile F-11 Package**
- **Complies with Directive 2002/95/EC (RoHS Compliant)**

# SF610

ABSOLUTE MAXIMUM RATING ( $T_A=25^{\circ}\text{C}$ )			
Parameter		Rating	Unit
CW RF Power Dissipation	$P_{max}$	+10	dBm
DC Voltage $V_{DC}$ Between Any Two Pins	$V_{DC}$	10	V
Operating Temperature Range	$T_A$	-10 ~ +65	$^{\circ}\text{C}$
Storage Temperature Range	$T_{stg}$	-40 ~ +85	$^{\circ}\text{C}$

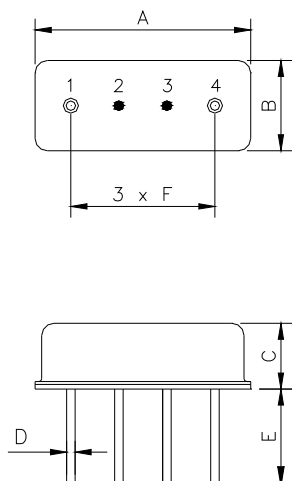
ELECTRONIC CHARACTERISTICS						
	Parameter	Sym	Minimum	Typical	Maximum	Unit
Frequency (25 $^{\circ}\text{C}$ )	Nominal Frequency	$f_C$	NS	610.00	NS	MHz
	Image Carrier Frequency	$f_{IMG}$	NS	607.15	NS	MHz
Insertion Loss Attenuation	607.25 MHz ... 613.75 MHz	$IL$	-	4.0	6.5	dB
3dB Passband		$BW_3$	-	10.0	-	MHz
Passband Ripple	607.25 MHz ... 613.75 MHz	-	-	$\pm 0.5$	$\pm 1.0$	dB
Relative Attenuation (relative to IL)						
	$f_C - 40.0$ MHz ... $f_C - 18.0$ MHz	-	36	48	-	dB
	600.75 MHz	-	35	48	-	dB
	$f_C + 12.0$ MHz ... $f_C + 40.0$ MHz	-	25	35	-	dB
Frequency Aging	Absolute Value during the First Year	$ fA $	-	-	10	ppm/yr
DC Insulation Resistance Between any Two Pins		-	1.0	-	-	$M\Omega$
Input / Output Impedance	Nominal	-	-	50 // 0		$\Omega//pF$

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 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.
- Unless noted otherwise, specifications apply over the entire specified operating temperature range.
- 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 to sales@vanlong.com.

PACKAGE DIMENSIONS (F-11)



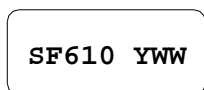
Electrical Connections

Terminals	Connection
1	Input/Output
2	Case Ground
3	Case Ground
4	Output/Input

Package Dimensions

Dimensions	Nom. (mm)	Tol. (mm)
A	11.0	±0.3
B	4.5	±0.3
C	3.2	±0.3
D	0.45	±0.1
E	5.0	±0.5
F	2.54	±0.2

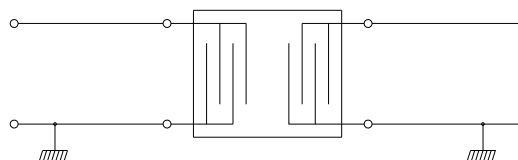
MARKING



SF610 – Part Number  
 YWW : Date code  
 Y : Last digit of year – 200X  
 WW: Week No.

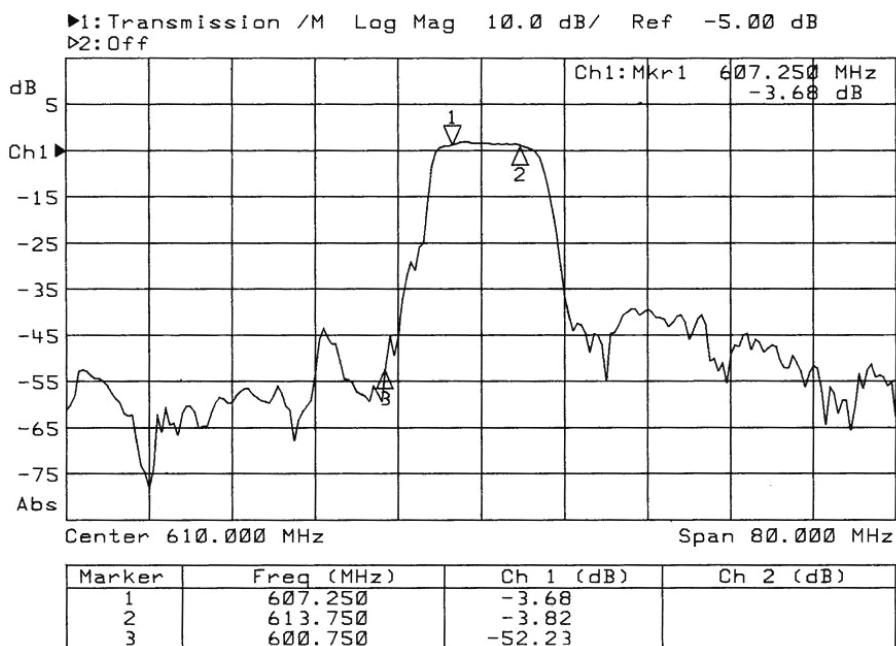
Laser or Ink Marking

TEST CIRCUIT



Nominal Source/Load Impedance: 50 Ω

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 a long 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 $270^{\circ}\text{C} \pm 10^{\circ}\text{C}$ for $10 \pm 1$ 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 $270^{\circ}\text{C} \pm 10^{\circ}\text{C}$ for $2 \pm 0.5$ seconds.	
High Temperature	After being placed in a chamber with $+85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for $96 \pm 4$ 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 $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for $96 \pm 4$ 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 $+40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for $96 \pm 4$ 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 $-40^{\circ}\text{C}$ for 30 minutes, then the Filter shall be immediately placed at temperature of $85^{\circ}\text{C}$ , after 30 minutes at temperature of $85^{\circ}\text{C}$ , the Filter shall be returned to $-40^{\circ}\text{C}$ 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.	

