- ***Designed to Provide Front-end selectivity in 859.15 MHz***
- ***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)***

SF859

ABSOLUTE MAXIMUM RATING (T_A=25°C)			
Parameter		Rating	Unit
CW RF Power Dissipation	P_{max}	+10	dBm
DC Voltage V_{DC} Between Any Two Pins	V_{DC}	±30	V
Operating Temperature Range	T_A	-10 ~ +60	°C
Storage Temperature Range	T_{stg}	-40 ~ +85	°C

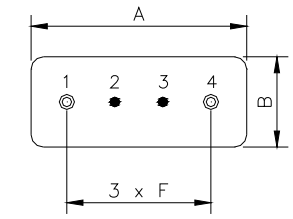
ELECTRONIC CHARACTERISTICS						
Parameter		Sym	Minimum	Typical	Maximum	Unit
Nominal Frequency (at 25°C) (Center frequency between 3dB point)		f_C	NS	859.15	NS	MHz
Insertion Loss		*IL*	-	4.0	5.5	dB
3dB Passband		BW_3	-	1.0	-	MHz
Passband Ripple		$\Delta\alpha$	-	-	±1.0	dB
Rejection	at f_C - 21.4 MHz (Image)	-	40	50	-	dB
	at f_C - 10.7 MHz (LO)	-	25	40	-	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^2
Frequency Aging	Absolute Value during the First Year	|fA|	-	-	10	ppm/yr
DC Insulation Resistance Between any Two Pins		-	1.0	-	-	MΩ

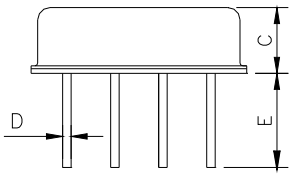
NS = Not Specified

Notes:

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 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.
3. Unless noted otherwise, specifications apply over the entire specified operating temperature range.
4. 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.
5. Turnover temperature, T_0, is the temperature of maximum (or turnover) frequency, f_0. The nominal frequency at any case temperature, T_C, may be calculated from: $f = f_0 [1 - FTC (T_0 - T_C)^2]$.
6. The specifications of this device are based on the test circuit shown above and subject to change or obsolescence without notice.
7. All equipment designs utilizing this product must be approved by the appropriate government agency prior to manufacture or sale.
8. 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.
9. For questions on technology, prices and delivery please contact our sales offices or email 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

SF859 YWW

SF859 – Part Number

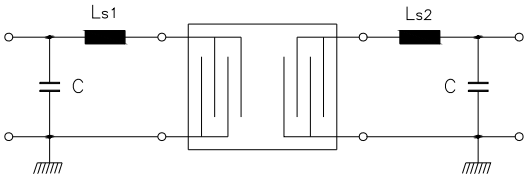
YWW : Date code

Y : Last digit of year – 200X

WW: Week No.

Laser or Ink Marking

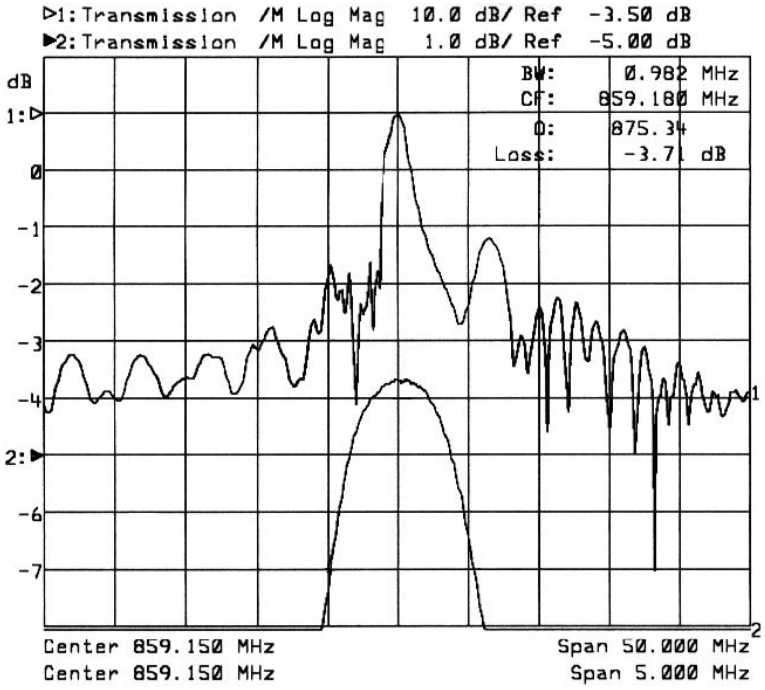
TEST CIRCUIT



C = 4 ~ 8 pF*

Ls1 = Ls2 = 2 tunes of 0.5mm insulated copper, 2.0mm ID

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°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.	

REFLOW SOLDERING TEMPERATURE PROFILE