

- **Surface Acoustic Wave Resonator Filter**
- **Low-Loss, Coupled-Resonator Quartz Design**
- **Simple External Impedance Matching**
- **F-16 Metal Thru-Hole Package**

SF90.5B

| Absolute Maximum Rating (Ta=25°C) | | |
|-------------------------------------|-----------|-----------|
| Parameter | Rating | Unit |
| Input Power Level | P_{in} | 0 |
| DC Voltage VDC Between Any Two Pins | V_{dc} | 30 |
| Operating Temperature Range | T_A | -10 ~ +60 |
| Storage Temperature Range | T_{stg} | -40 ~ +85 |

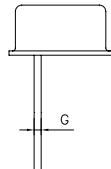
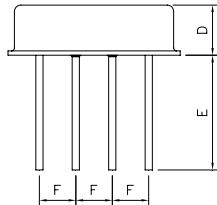
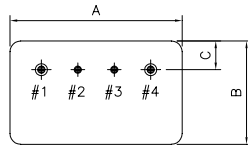
| Electrical Characteristics | | | | | | |
|---|-----------------------------------|--------------|---------|---------|------|--------|
| Parameter | Sym | Minimum | Typical | Maximum | Unit | |
| Center Frequency (25°C) | f_c | NS | 90.50 | NS | MHz | |
| Insertion Loss at f_c | IL | - | 2.0 | 4.0 | dB | |
| 3dB Bandwidth | BW_3 | 45 | 62 | - | KHz | |
| Passband Ripple ($f_c \pm 15$ KHz) | $\Delta\alpha$ | - | 0.2 | 1.0 | dB | |
| Stopband Attenuation | $f_c \pm 60$ KHz | α | 15 | 21 | - | dB |
| | $f_c \pm 120$ KHz | | 42 | 47 | - | dB |
| | $f_c - 930 \dots f_c - 890$ KHz | | 55 | 62 | - | dB |
| | $f_c - 4020 \dots f_c - 3980$ KHz | | 70 | 80 | - | dB |
| Temperature Stability | Turnover Temperature | T_0 | 25 | - | 55 | °C |
| | Frequency Temperature Coefficient | FTC | - | 0.032 | - | ppm/°C |
| Group Delay | Absolute at f_c | τ | 10 | 15 | 18 | μSec |
| | Deviation $f_c \pm 10$ KHz | $\Delta\tau$ | - | 2.0 | 8.0 | μSec |
| 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 $\leq 1.2:1$. 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.
- 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_0 , is the temperature of maximum (or turnover) frequency, f_0 . The nominal frequency at any case temperature, T_c , may be calculated from: $f = f_0 [1 - FTC (T_0 - T_c)^2]$.
- 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 (F-16)



Electrical Connections

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

Package Dimensions

| Dimensions | Nom (mm) | Dimensions | Nom (mm) |
|------------|----------|------------|----------|
| A | 12.0 | E | 5.0 |
| B | 7.2 | F | 2.54 |
| C | 2.0 | G | 0.5 |
| D | 3.5 | | |

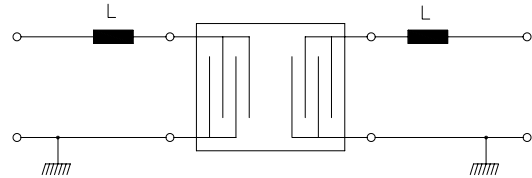
Marking



Ink Marking

Color: Black or Blue

Test Circuit



L = 12~20 turns of 0.51mm insulated copper, 4.0mm ID

Typical Frequency Response

