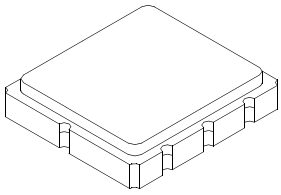
muRata
INNOVATOR IN ELECTRONICS

# RF3619D

## 404.0 MHz SAW Filter

- *402 to 405 MHz Medical Band Front-end Filter*
- *Single-ended Input/Outout Operation*
- *Complies with Directive 2002/95/EC (RoHS)*



**SM3838-8 Case**
**3.8 x 3.8**

**Absolute Maximum Ratings**

| Rating | Value | Units |
|---|---|---|
| Input Power Level | +10 | dBm |
| DC Voltage on any Non-ground Pin | 3 | V |
| Operating Temperature Range | -10 to +60 | °C |
| Storage Temperature Range in Tape and Reel | -40 to +85 | °C |
| Solder Reflow Temperature, 10 seconds, 5 cycles maximum | 260 | °C |

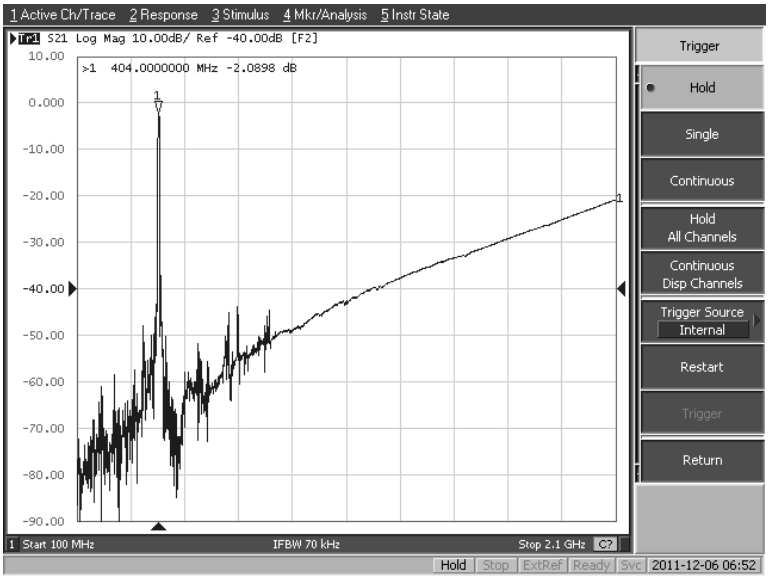
| Characteristic | Sym | Notes | Minimum | Typical | Maximum | Units |
|---|---|---|---|---|---|---|
| Center Frequency at 25 °C | $f_c$ | 1, 2, 3 | | 404.0 | | MHz |
| Insertion Loss | $IL_{MIN}$ | 1, 3 | | 2.1 | 2.3 | dB |
| Passband Ripple, 402-405 MHz | | 1, 3 | | 0.6 | 0.8 | dB |
| 3 dB Bandwidth | $BW_3$ | 1 | 5.0 | 6.0 | | MHz |
| Attenuation relative to $IL_{MIN}$: | | | | | | |
| 398.5 MHz | | 1, 3 | 30 | 35 | | dB |
| 408.5 MHz | | | 25 | 45 | | |
| 383.5 MHz | | | 40 | 50 | | |
| 423.5 MHz | | | 38 | 48 | | |
| Freq. Temp. Coefficient | FTC | | | -37 | | ppm/k |
| Frequency Aging, First Year | \|fA\| | 5 | | ≤10 | | ppm |
| Single-ended Input/Output Impedance Match | | 1 | | 50 | | ohms |
| Differential Input/Output Impedance Match | | 1 | | 150 | | ohms |
| Lid Symbolization (Y=year WW=week S=shift) | A15, YWWS | | | | | |
| Standard Reel Quantity Reel Size 7 Inch | | 9 | 500 Pieces/Reel | | | |
| Reel Size 13 Inch | | | 3000 Pieces/Reel | | | |

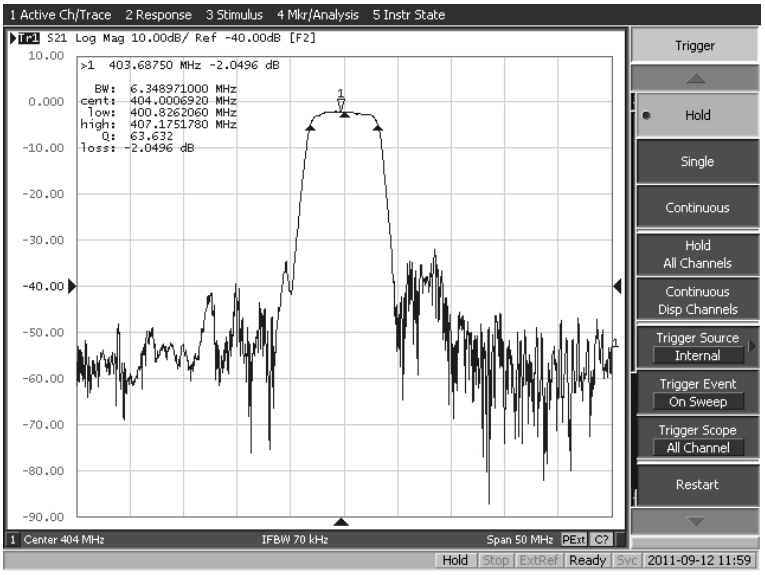
**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

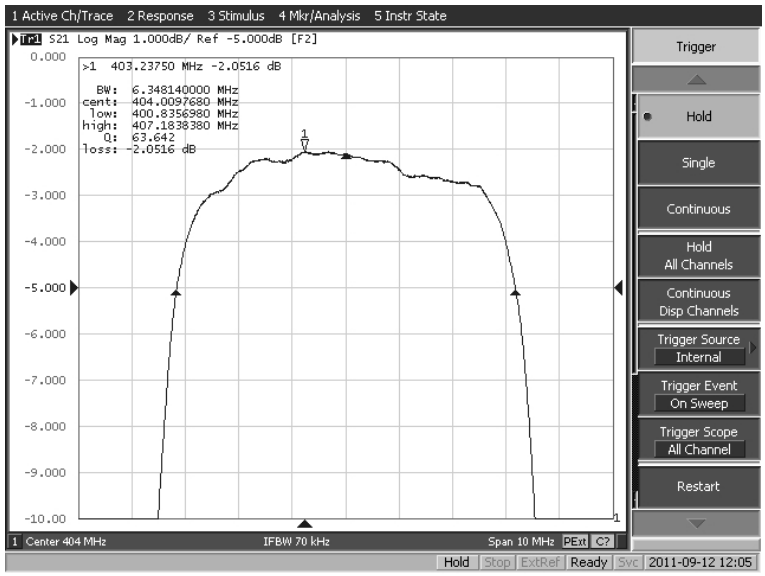
**NOTES:**

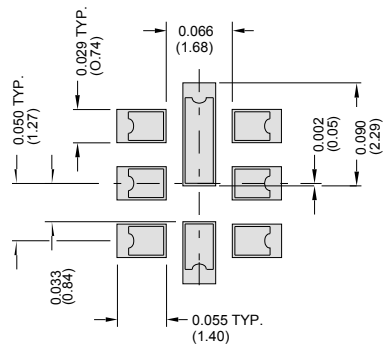
1. Unless noted otherwise, all measurements are made with the filter installed in the specified test fixture which is connected to a 50 Ω test system.
2. The frequency $f_c$ is defined as the midpoint between the 3 dB frequencies.
3. Where noted specifications apply over the entire specified operating temperature range of -10 °C to +60 °C.
4. Frequency aging is the change in fc 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 significantly in subsequent years.
5. The design, manufacturing process, and specifications of this device are subject to change.
6. One or more of the following U.S. Patents apply: 4,54,488, 4,616,197, and others pending.
7. All equipment designs utilizing this product must be approved by the appropriate government agency prior to manufacture or sale.
8. Tape and Reel Standard Per ANSI / EIA 481.
9. This product complies with Directive 2002/95/EC of the European Parlament and of the Council of 27 January 2003 on the restriction of the use of certain hazadous substances in electrical and electronic equipment.

## Filter Response Plots



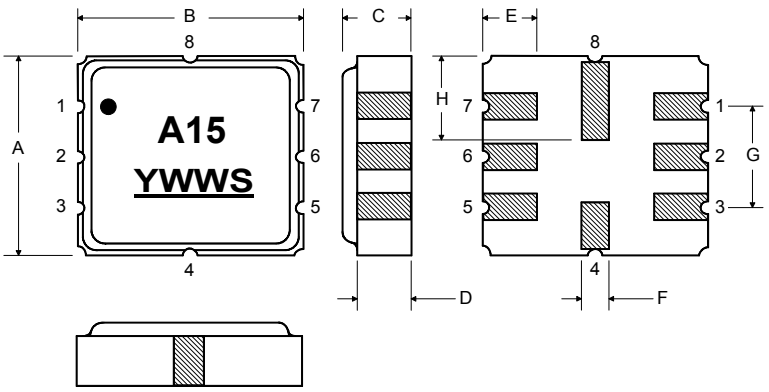






**PCB Land Pattern**

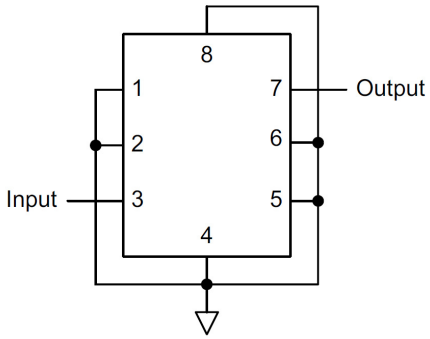
**Filter Primary**
**Electrical Connections**

| Pin | Connection |
|---|---|
| 1 | Ground |
| 2 | Ground |
| 3 | Input |
| 4 | Ground |
| 5 | Ground |
| 6 | Ground |
| 7 | Output |
| 8 | Ground |




**Case Dimensions**

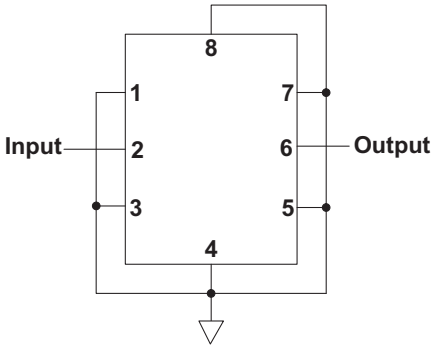
| Dimension | mm | | | Inches | | |
|---|---|---|---|---|---|---|
| | Min | Nom | Max | Min | Nom | Max |
| A | 3.6 | 3.8 | 4.0 | 0.14 | 0.15 | 0.16 |
| B | 3.6 | 3.8 | 4.0 | 0.14 | 0.15 | 0.16 |
| C | 1.00 | 1.20 | 1.40 | 0.04 | 0.05 | 0.055 |
| D | 0.95 | 1.10 | 1.25 | 0.033 | 0.043 | 0.05 |
| E | 0.90 | 1.0 | 1.10 | 0.035 | 0.04 | 0.043 |
| F | 0.50 | 0.6 | 0.70 | 0.020 | 0.024 | 0.028 |
| G | 2.39 | 2.54 | 2.69 | 0.090 | 0.100 | 0.110 |
| H | 1.40 | 1.75 | 2.05 | 0.055 | 0.069 | 0.080 |




**Single-ended**
**Input and Output**
**Filter Primary**
**Connection Diagram**

**Filter Alternate**
**Electrical Connections**

| Pin | Connection |
|---|---|
| 1 | Ground |
| 2 | Input |
| 3 | Ground |
| 4 | Ground |
| 5 | Ground |
| 6 | Output |
| 7 | Ground |
| 8 | Ground |




**Single-ended**
**Input and Output**
**Filter Alternate**
**Connection Diagram**