



- **Ideal Front-End Filter for European Wireless Receivers**
- **Low-Loss, Coupled-Resonator Quartz Design**
- **Simple External Impedance Matching**
- **Wide Bandwidth for Multi-Channel Receiver Application**
- **Complies with Directive 2002/95/EC (RoHS)**

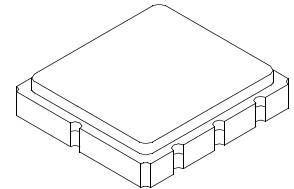


The RF1400D is a low-loss, compact, and economical surface-acoustic-wave (SAW) filter designed to provide front-end selectivity in 433.92 MHz receivers. Receiver designs using this filter include superhet with 10.7 MHz or 500 kHz IF, direct conversion and superregen. Wider bandwidth for channelized receiver applications.

This coupled-resonator filter (CRF) uses selective null placement to provide suppression, typically greater than 40 dB, of the LO and image spurious responses of superhet receivers with 10.7 MHz IF. RFM's advanced SAW design and fabrication technology is utilized to achieve high performance and very low loss with simple external impedance matching.

RF1400D

**433.92 MHz
SAW Filter**



**SM3838-8 Case
3.8 x 3.8**

Electrical Characteristics

| Characteristic | Sym | Notes | Minimum | Typical | Maximum | Units |
|--|-----------------|---------|---------|-----------------|---------|---------------------|
| Center Frequency at 25°C Absolute Frequency | f_c | 1, 2, 3 | | 433.92 | | MHz |
| Insertion Loss | IL | 1, 3 | | 2.0 | 3.0 | dB |
| 3 dB Bandwidth | BW ₃ | 1, 2, 3 | 1000 | 1150 | | kHz |
| Rejection | | | | | | |
| 10 - 414 MHz | | | 40 | 50 | | |
| 414 - 425 MHz | | | 30 | 40 | | |
| 426 - 432 MHz | | | 16 | 20 | | |
| 435 - 442 MHz | | | 10 | 15 | | |
| 442 - 550 MHz | | | 26 | 30 | | |
| 550 - 1000 MHz | | | 45 | 50 | | |
| Frequency Temperature Coefficient | FTC | | | 0.032 | | ppm/°C ² |
| Frequency Aging Absolute Value during the First Year | fA | 5 | | ≤10 | | ppm/yr |
| Impedance @ f _c | | | | | | |
| Input $Z_{IN} = R_{IN} C_{IN}$ | Z_{IN} | | | 279Ω 4.1pf | | |
| Output $Z_{OUT} = R_{OUT} C_{OUT}$ | Z_{OUT} | | | 279Ω 4.1pf | | |
| Lid Symbolization (Y=year WW=week D=day of week) | | | | 490 // YWWS | | |
| Standard Reel Quantity | | | | 500 Pieces/Reel | | |
| Reel Size 7 Inch | | | | | | |
| Reel Size 13 Inch | | | | | | |



CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

Notes:

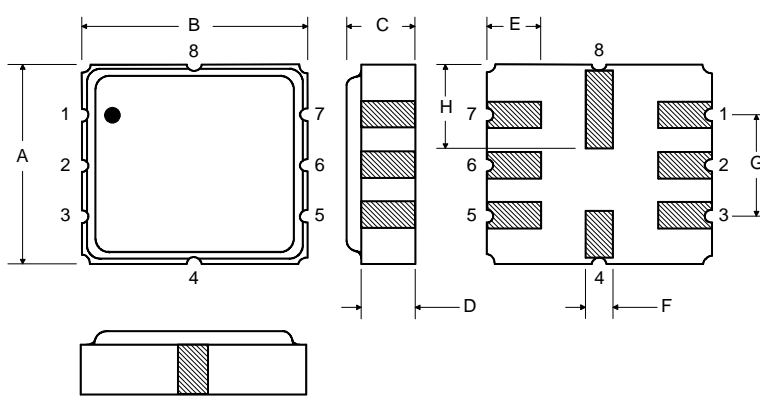
1. Unless noted otherwise, all measurements are made with the filter installed in the specified test fixture which is connected to a 50 Ω test system with VSWR ≤ 1.2:1. The test fixture L and C are adjusted for minimum insertion loss at the filter center frequency, f_c . Note that insertion loss and band-width and passband shape are dependent on the impedance matching component values and quality.
2. The frequency f_c is defined as the midpoint between the 3dB frequencies.
3. Where noted specifications apply over the entire specified operating temperature range of -40°C to +105°C.
4. The turnover temperature, T_O , is the temperature of maximum (or turnover) frequency, f_o . The nominal frequency at any case temperature, T_c , may be calculated from: $f = f_o [1 - FTC (T_o - T_c)^2]$.
5. 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 significantly in subsequent years.
6. The design, manufacturing process, and specifications of this device are subject to change.
7. One or more of the following U.S. Patents apply: 4,54,488, 4,616,197, and others pending.
8. All equipment designs utilizing this product must be approved by the appropriate government agency prior to manufacture or sale.
9. Tape and Reel Standard Per ANSI / EIA 481.

Absolute Maximum Ratings

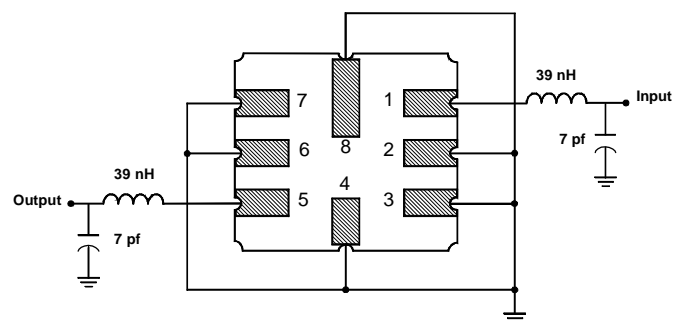
| Rating | Value | Units |
|-----------------------|------------------------------|--------|
| Input Power Level | 10 | dBm |
| DC Voltage | 12 | VDC |
| Storage Temperature | -40 to +125 | °C |
| Operable Temperature | -40 to +125 | °C |
| Soldering Temperature | (10 seconds / 5 cycles max.) | 260 °C |

Electrical Connections

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

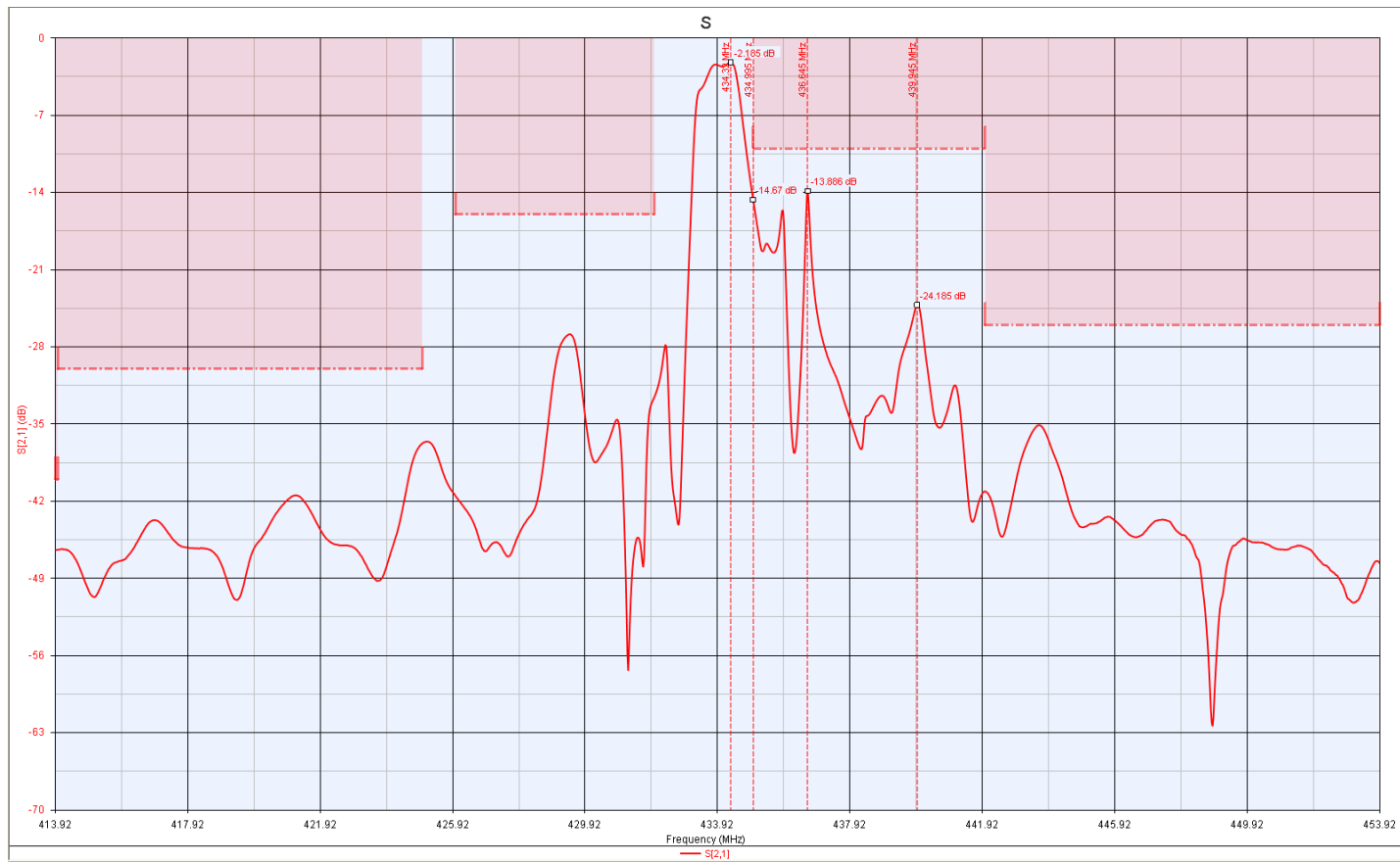
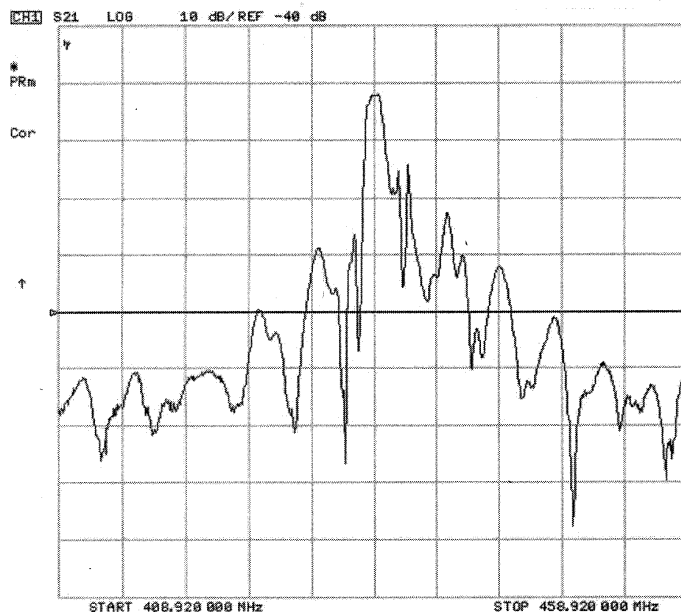
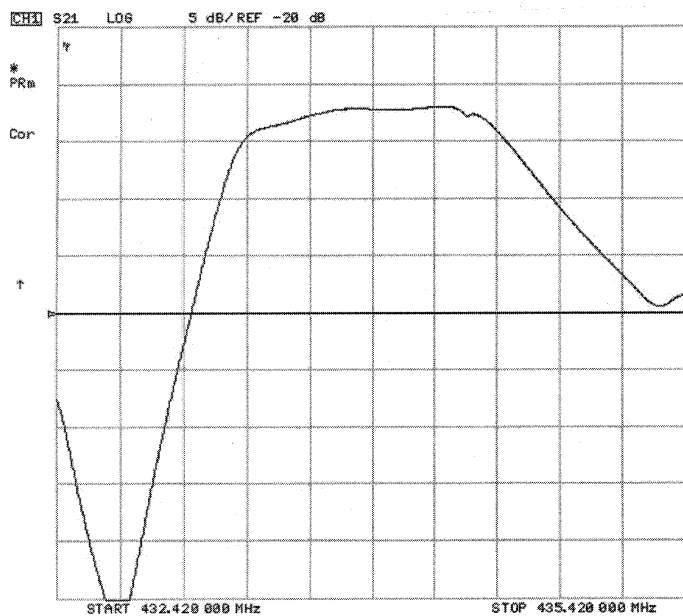


Matching Circuit to 50Ω



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 |



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