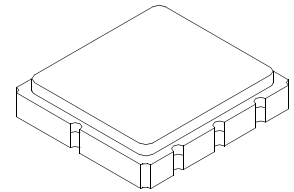


RF1408D

447.7 MHz SAW Filter



SM3838-8 Case
3.8 x 3.8

- **Ideal Front-End Filter for Domestic Wireless Receivers**
- **Low-Loss, Coupled-Resonator Quartz Design**
- **Simple External Impedance Matching**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Tape and Reel Standard per ANSI/EIA-481**

The RF1408D is a low-loss, compact, and economical surface-acoustic-wave (SAW) filter designed to provide front-end selectivity in 447.7 MHz receivers. Receiver designs using this filter include superhet with 10.7 MHz or 500 kHz IF, direct conversion and superregen. Typical applications of these receivers are wireless remote-control and security devices (especially for automotive keyless entry) operating in the USA under FCC Part 15, in Canada under RSS-210, and in Italy

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. RFMi's advanced SAW design and fabrication technology is utilized to achieve high performance and very low loss with simple external impedance matching.

| Characteristic | Sym | Notes | Minimum | Typical | Maximum | Units |
|--|------------------|-------|---------|---------------------|---------|---------------------|
| Center Frequency at 25°C Absolute Frequency | f_c | | | 447.7 | | MHz |
| Insertion Loss | IL_{MIN} | | | 1.5 | 2.0 | dB |
| 3 dB Bandwidth | BW_3 | | 500 | 840 | 1100 | kHz |
| Rejection Attenuation: (relative to IL_{min}) | | | | | | dB |
| 10 - 409 MHz | | | 45 | 60 | | |
| 409 - 434 MHz | | | 40 | 55 | | |
| 434 - 443 MHz | | | 33 | 35 | | |
| 443 - 445 MHz | | | 20 | 33 | | |
| 445 - 446.7 MHz | | | 9 | 12 | | |
| 448.7 - 449.7 MHz | | | 9 | 15 | | |
| 449.7 - 456 MHz | | | 16 | 20 | | |
| 456 - 458 MHz | | | 31 | 38 | | |
| 458 - 487 MHz | | | 38 | 40 | | |
| 487 - 1000 MHz | | | 39 | 55 | | |
| Temperature Freq. Temp. Coefficient | FTC | | | 0.032 | | ppm/°C ² |
| Frequency Aging Absolute Value during the First Year | fAI | | | ≤10 | | ppm/yr |
| Impedance @ f_c Input $Z_{IN}=R_{IN} C_{IN}$ | Z_{IN} | | | 221.86Ω // 1.25pf | | |
| Output $Z_{OUT}=R_{OUT} C_{OUT}$ | Z_{OUT} | | | 172.02Ω // 126.49fF | | |
| Lid Symbolization (Y=year WW=week S=shift) | 511, <u>YWWS</u> | | | | | |
| Standard Reel Quantity Reel Size 7 Inch | 500 Pieces/Reel | | | | | |
| Reel Size 13 Inch | 3000 Pieces/Reel | | | | | |



CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

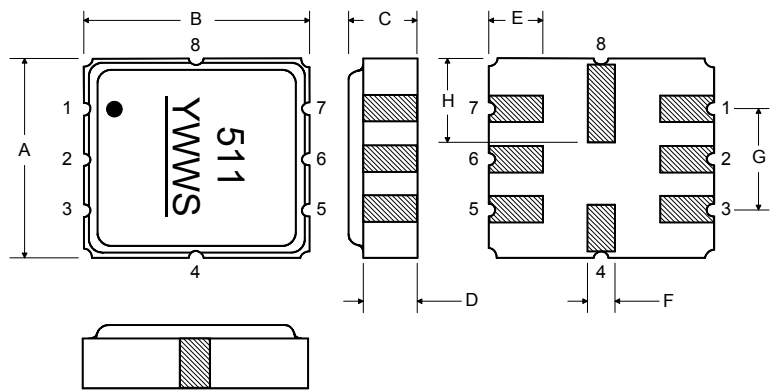
NOTES:

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

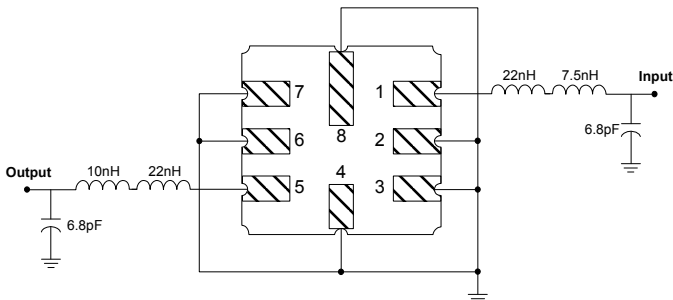
| Rating | Value | Units |
|--|-------------|-------|
| Input Power Level | 10 | dBm |
| DC Voltage | 12 | VDC |
| Storage Temperature | -40 to +125 | °C |
| Operable Temperature Range | -40 to +125 | °C |
| Soldering Temperature (10 seconds / 5 cycles Max.) | 260 | °C |

Electrical Connections

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



Matching Circuit to 50Ω



Case Dimensions

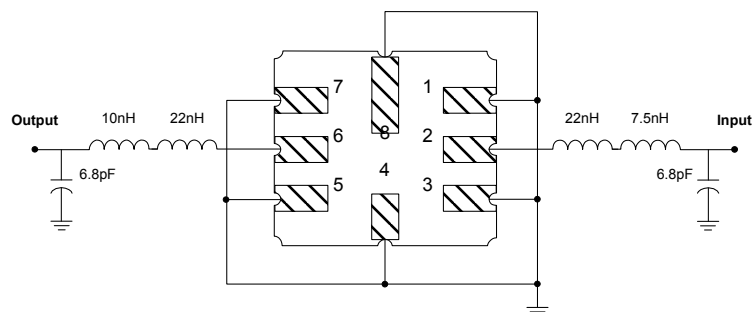
| Dimension | mm | | | Inches | | |
|-----------|------|------|------|--------|-------|-------|
| | Min | Nom | Max | Min | Nom | Max |
| A | 3.6 | 3.8 | 4.0 | 0.14 | 0.15 | 0.16 |
| B | 3.6 | 3.8 | 4.0 | 0.14 | 0.15 | 0.16 |
| C | 1.00 | 1.20 | 1.40 | 0.04 | 0.05 | 0.055 |
| D | 0.95 | 1.10 | 1.25 | 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 |

Optional

Electrical Connections

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

Matching Circuit to 50Ω



Recommended Reflow Profile

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 260°C +0/-5°C peak (10 seconds).
4. Time: 5 times maximum.

