# RF1391C-1

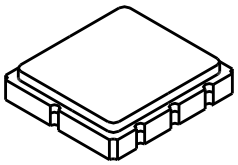
# 433.42 MHz SAW Filter

- ***Ideal Front-End Filter for 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***

RoHS Compliant

The RF1391C-1 is a low-loss, compact, and economical surface-acoustic-wave (SAW) filter designed to provide front-end selectivity in 433.42 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 operating in Europe under ETSI I-ETS 300 220.

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.



**SM5050-8 Case**
**5 x 5**

| Characteristic | | Sym | Notes | Minimum | Typical | Maximum | Units |
|---|---|---|---|---|---|---|---|
| Center Frequency at 25°C | Absolute Frequency | $f_c$ | | | 433.42 | | MHz |
| | Tolerance from 433.42 MHz | $\Delta f_C$ | | | | ±75 | kHz |
| Insertion Loss | | IL | | | 3.0 | 5.0 | dB |
| 3 dB Bandwidth | | $BW_3$ | | 500 | 600 | 750 | kHz |
| Rejection | at $f_c$ - 21.4 MHz (Image) | | | 40 | 50 | | dB |
| | at $f_c$ - 10.7 MHz (LO) | | | 30 | 40 | | |
| | Ultimate | | | | 80 | | |
| Temperature | Operating Case Temp. | $T_C$ | | -40 | | +85 | °C |
| | Turnover Temperature | $T_O$ | | 15 | 25 | 35 | °C |
| | Turnover Frequency | $f_O$ | | | $f_c$ | | MHz |
| | Freq. Temp. Coefficient | FTC | | | 0.032 | | ppm/°C$^2$ |
| Frequency Aging | Absolute Value during the First Year | \|fA\| | | | ≤10 | | ppm/yr |
| Impedance @ fc | Input $Z_{IN} = R_{IN}//C_{IN}$ | $Z_{IN}$ | | 212 Ω // 3.1 pF | | | |
| | Output $Z_{OUT} = R_{OUT}//C_{OUT}$ | $Z_{OUT}$ | | 212 Ω // 3.1 pF | | | |
| Lid Symbolization (Y=year WW=week S=Shift) | | 792, YWWS | | | | | |
| Standard Reel Quantity | 7 Inch Reel | 500 pieces/reel | | | | | |
| Standard Reel Quantity | 13 Inch Reel | 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.

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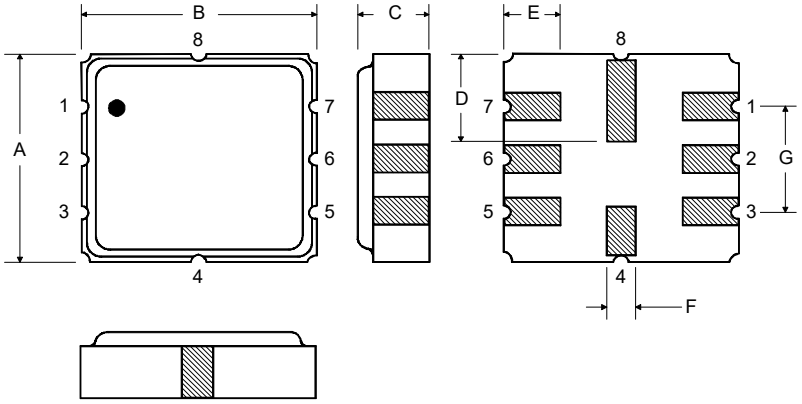
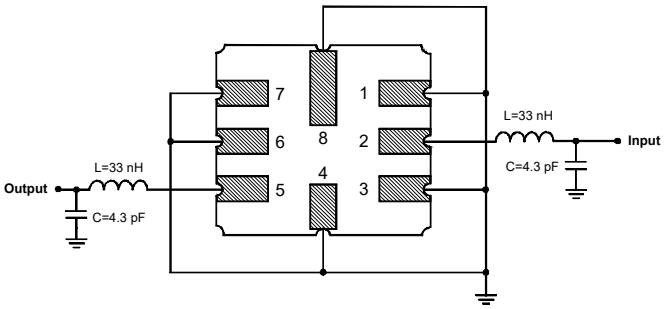
| Rating | | Value | Units |
|---|---|---|---|
| Input Power Level | | 10 | dBm |
| DC Voltage | | 12 | VDC |
| Storage Temperature | | -40 to +85 | °C |
| Soldering Temperature | (10 seconds / 5 cycles max.) | 260 | °C |

Electrical Connections

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




**Matching Circuit to 50Ω**

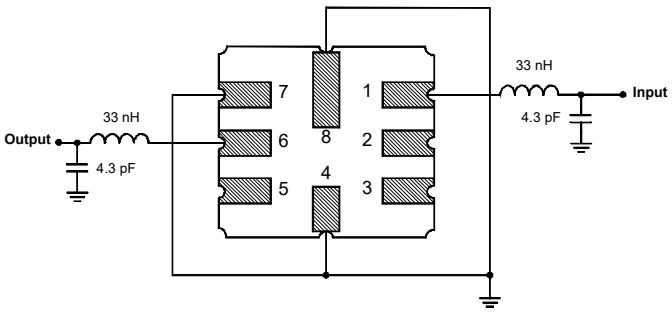



Case Dimensions

| Dimension | mm | | | Inches | | |
|---|---|---|---|---|---|---|
| | Min | Nom | Max | Min | Nom | Max |
| **A** | 4.8 | 5.0 | 5.2 | 0.189 | 0.197 | 0.205 |
| **B** | 4.8 | 5.0 | 5.2 | 0.189 | 0.197 | 0.205 |
| **C** | | | 1.7 | | | 0.067 |
| **D** | | 2.08 | | | 0.082 | |
| **E** | | 1.17 | | | 0.046 | |
| **F** | | 0.64 | | | 0.025 | |
| **G** | 2.39 | 2.54 | 2.69 | 0.094 | 0.100 | 0.106 |

Optional

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

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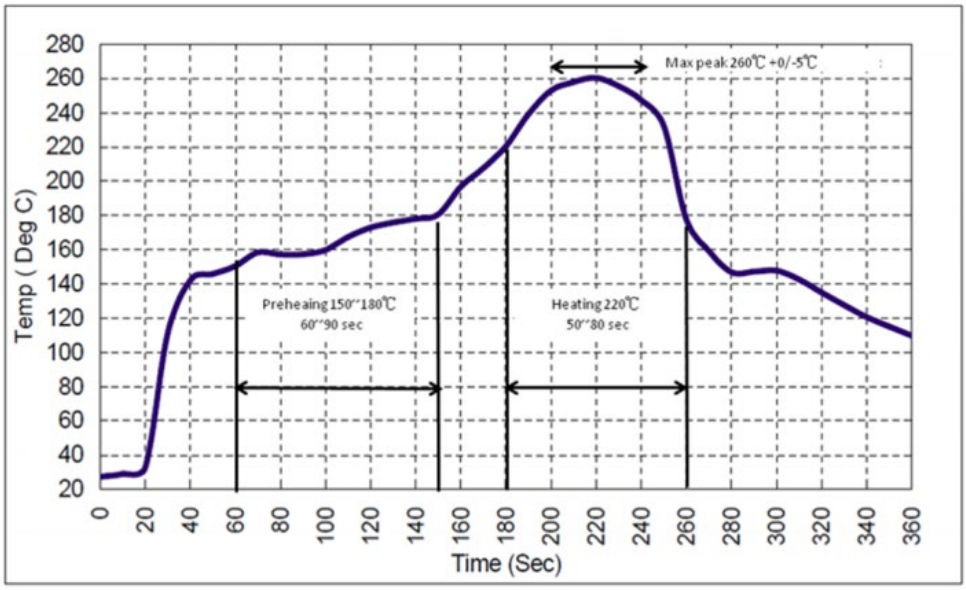
## Recommended Reflow Profile

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

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