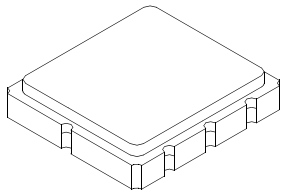
Discontinued

RFM products are now Murata products.

# SF2172C

## 280 MHz SAW Filter

- ***Precision SAW Filter***
- ***5.0 X 5.0 mm Surface-mount Case***
- ***Single Ended Input and Output***
- ***Complies with Directive 2002/95/EC (RoHS)***



**SM5050-8**

### Absolute Maximum Ratings

| Rating | Value | Units |
|---|---|---|
| Maximum Incident Power in Passband | +13 | dBm |
| Maximum DC Voltage Between any two Non-ground Terminals | 30 | VDC |
| Storage Temperature Range in Tape and Reel | -40 to +85 | °C |
| Suitable for Lead-free Soldering - Maximum Soldering Temperature | 260 °C for 30 s | |

### Electrical Characteristics

| Characteristic | Sym | Notes | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|
| Nominal Center Frequency | $f_C$ | 1 | | 280 | | MHz |
| Insertion Loss | $IL_{MIN}$ | 1 | | 8.8 | 11 | dB |
| Passband Ripple, $f_C$ ± 7.5 MHz | | 1 | | 0.4 | 1.0 | $dB_{P-P}$ |
| Passband Rippl2, $f_C$ ± (7.5 to 8.5) MHz | | | | 0.7 | 2.0 | $dB_{P-P}$ |
| 1 dB Bandwidth | $BW_1$ | 1 | 15 | 19.8 | | MHz |
| Group Delay Deviation, $f_C$ ± 7.5 MHz | | 1 | | 24 | 50 | ns |
| 40 dB Bandwidth | | | | 29.5 | 31.0 | MHz |
| Attenuation Referenced to $IL_{MIN}$ | | | | | | |
| Fc ±(15 to 17) MHz | | | 10 | 40 | | dB |
| Fc ±(17 to 100) MHz | | | 40 | 45 | | dB |
| Operating Temperature Range | | | -40 | | 85 | °C |
| Case Style | | SM5050-8 5 x 5 mm Nominal Footprint | | | | |
| Lid Symbolization, Y=year, WW=week, S=shift | | RFM 852 YWWS | | | | |

### Electrical Connections

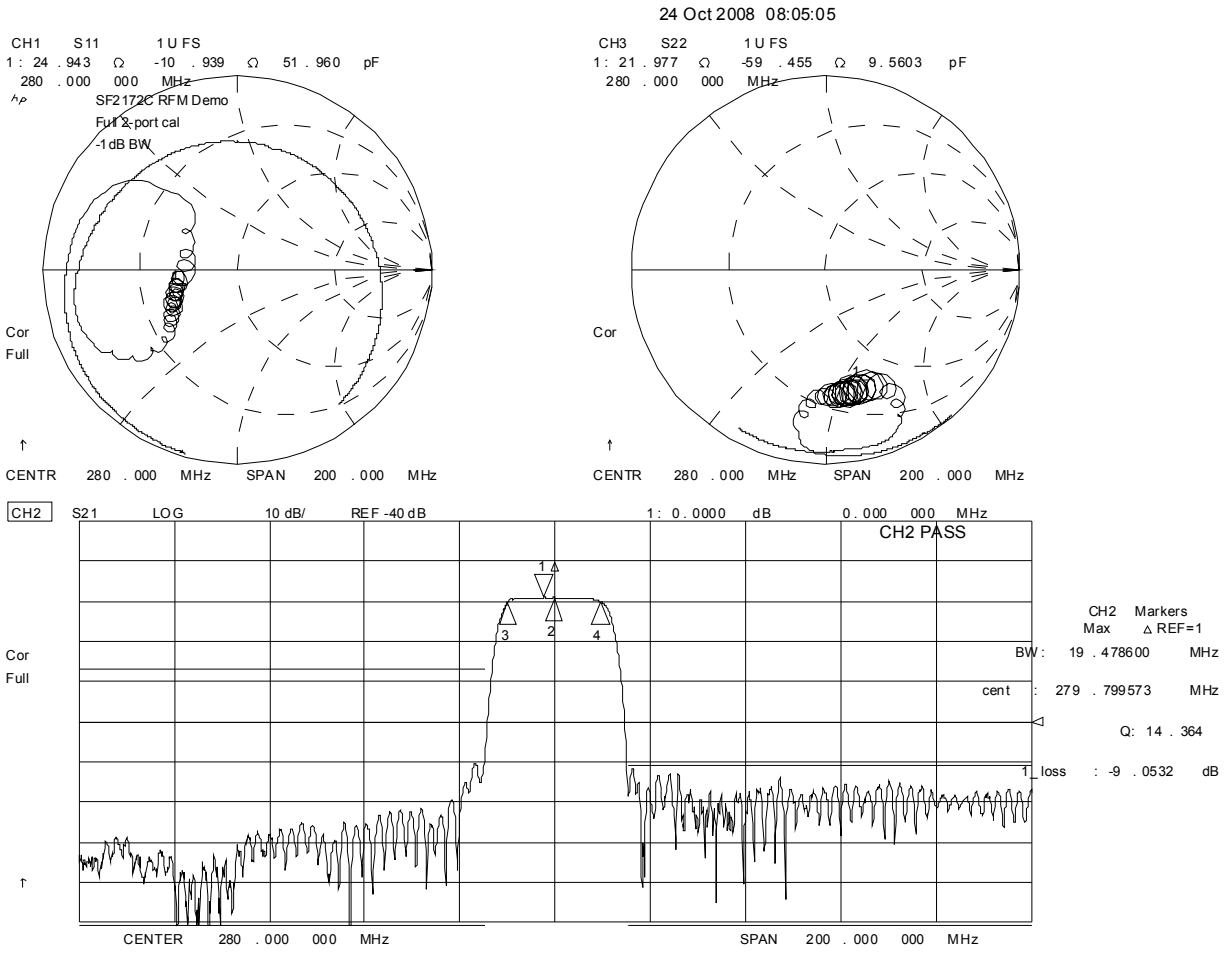
| Connection | | Terminals |
|---|---|---|
| Port 1 | Input | 3 |
| Port 2 | Output | 7 |
| | Ground | All others |
| Dot indicates Pin 1 | | |

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

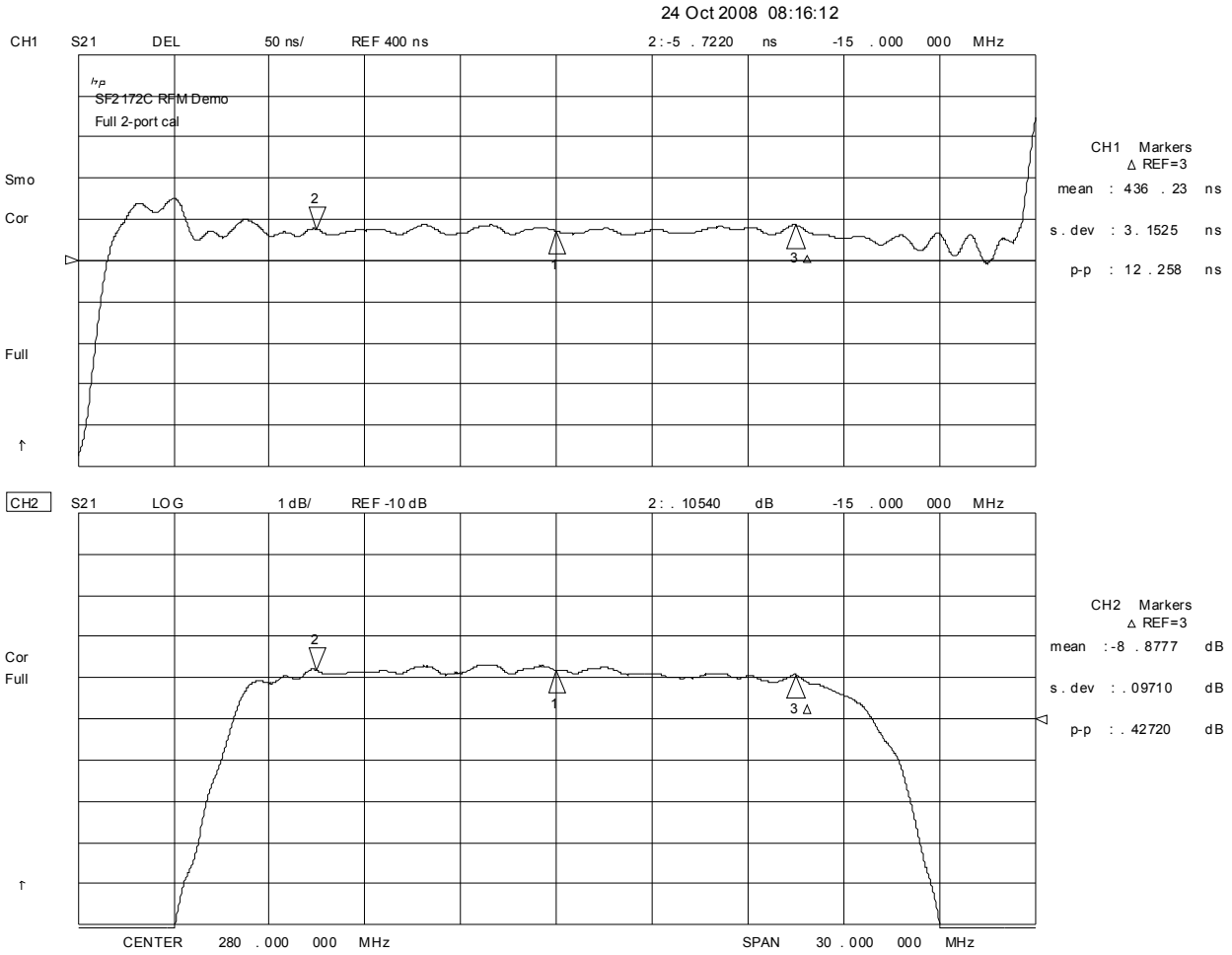
**NOTES:**

1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to 50 Ω and measured with 50 Ω network analyzer.
2. Rejection is measured as attenuation below the minimum IL point in the passband. Rejection in final user application is dependent on PCB layout and external impedance matching design. See Application Note No. 42 for details.
3. The design, manufacturing process, and specifications of this filter are subject to change.
4. Tape and Reel Standard ANSI / EIA 481.
5. Either Port 1 or Port 2 may be used for either input or output in the design. However, impedances and impedance matching may vary between Port 1 and Port 2, so that the filter must always be installed in one direction per the circuit design.
6. US and international patents may apply.
7. Murata, stylized Murata logo, and Murata N.A., Inc. are registered trademarks of Murata Manufacturing Co., Ltd.

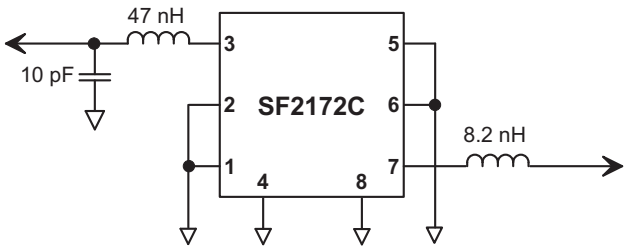
# Frequency Response and Smith Charts



# Passband Response

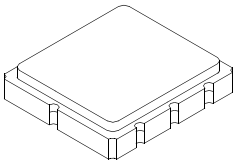


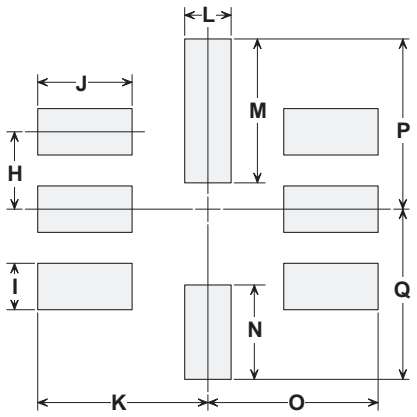

## SF2172C Test Circuit



# SM5050-8 Case

## 8-Terminal Ceramic Surface-Mount Case
## 5.0 X 5.0 mm Nominal Footprint






**PCB Footprint**

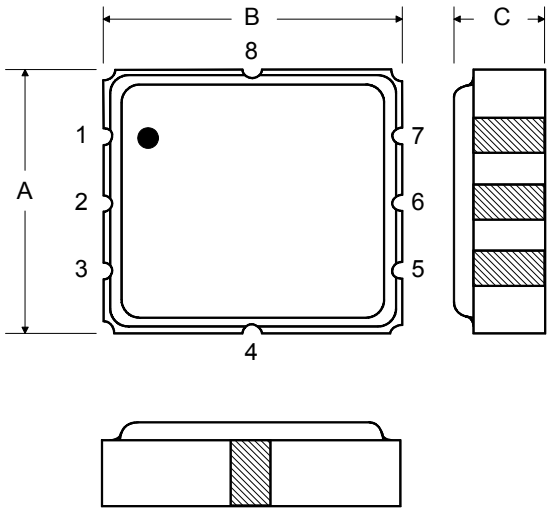
**Case Dimensions**

| Dimension | mm | | | Inches | | |
|---|---|---|---|---|---|---|
| | Min | Nom | Max | Min | Nom | Max |
| A | 4.80 | 5.00 | 5.20 | 0.189 | 0.197 | 0.205 |
| B | 4.80 | 5.00 | 5.20 | 0.189 | 0.197 | 0.205 |
| C | 1.30 | 1.50 | 1.70 | 0.050 | 0.060 | 0.067 |
| D | 1.98 | 2.08 | 2.18 | 0.078 | 0.082 | 0.086 |
| E | 1.07 | 1.17 | 1.27 | 0.042 | 0.046 | 0.050 |
| F | 0.50 | 0.64 | 0.70 | 0.020 | 0.025 | 0.028 |
| G | 2.39 | 2.54 | 2.69 | 0.094 | 0.100 | 0.106 |
| H | | 1.27 | | | 0.050 | |
| I | | 0.76 | | | 0.030 | |
| J | | 1.55 | | | 0.061 | |
| K | | 2.79 | | | 0.110 | |
| L | | 0.76 | | | 0.030 | |
| M | | 2.36 | | | 0.093 | |
| N | | 1.55 | | | 0.061 | |
| O | | 2.79 | | | 0.110 | |
| P | | 2.79 | | | 0.110 | |
| Q | | 2.79 | | | 0.110 | |

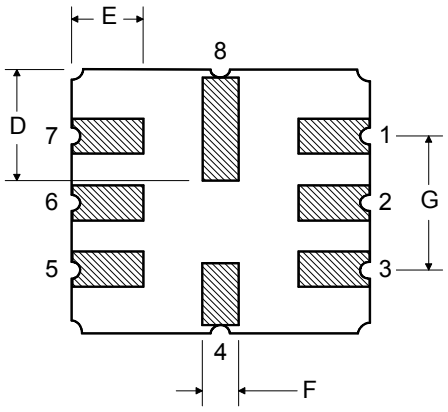
**Case Materials**

| Materials | |
|---|---|
| Solder Pad Plating | 0.3 to 1.0 µm Gold over 1.27 to 8.89 µm Nickel |
| Lid Plating | 2.0 to 3.0 µm Nickel |
| Body | $Al_2O_3$ Ceramic |
| Pb Free | |

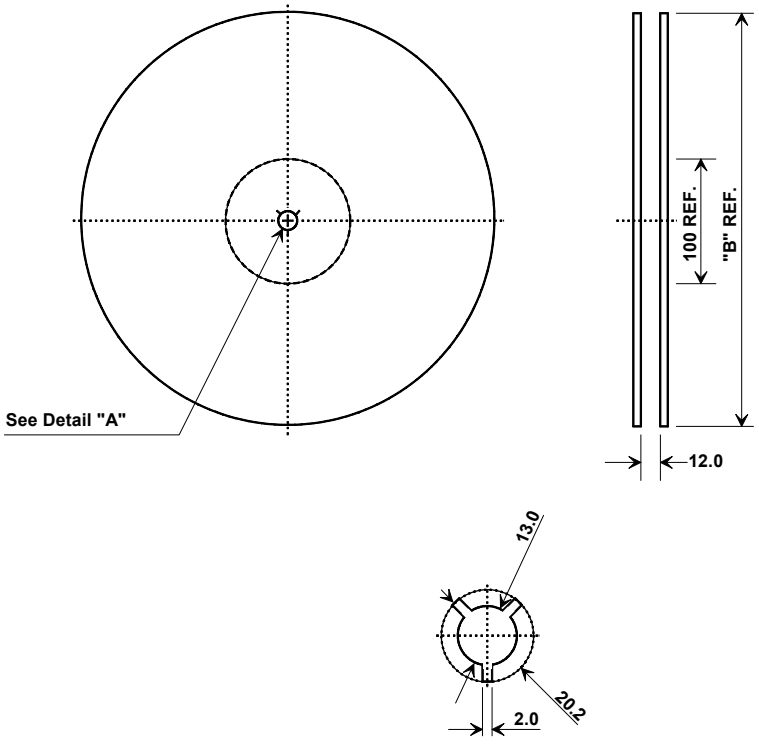
TOP VIEW




BOTTOM VIEW



## Tape and Reel Specifications




| "B" Nominal Size | | Quantity Per Reel |
|---|---|---|
| Inches | millimeters | |
| 7 | 178 | 500 |
| 13 | 330 | 3000 |

**COMPONENT ORIENTATION and DIMENSIONS**

| Carrier Tape Dimensions | |
|---|---|
| Ao | 5.3 mm |
| Bo | 5.3 mm |
| Ko | 2.0 mm |
| Pitch | 8.0 mm |
| W | 12.0 mm |