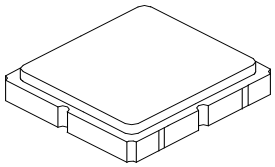
muRata
INNOVATOR IN ELECTRONICS

# SF2283D

## 433.20/434.64 MHz Dual SAW Filter

- ***Low Insertion Loss Dual SAW Filter***
- ***3.8 x 3.8 x mm Surface-mount Case***
- ***Single-ended Input and Output***
- ***Complies with Directive 2002/95/EC (RoHS)***
- ***AECQ-200 Qualified***



**SM3838-8**

### Absolute Maximum Ratings

| Rating | Value | Units |
|---|---|---|
| Maximum Input Power | +10 | dBm |
| Maximum DC Voltage Between any Two Terminals | 0 | VDC |
| Storage Temperature Range in Tape and Reel | -40 to +85 | °C |
| Operating Temperature Range | -40 to +85 | °C |
| Suitable for Lead-free Soldering - Maximum Soldering Profile | 260 °C for 30 s | |

### Electrical Characteristics

| Characteristic | Sym | Note | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|
| Band 1 Center Frequency | $f_{C1}$ | 1 | | 433.20 | | MHz |
| Band 1 Insertion Loss, 433.10 to 433.30 MHz | | | | 4 | 5.8 | dB |
| Band 1 Amplitude Ripple, 433.10 to 433.30 MHz | | | | 1 | 2.3 | dB |
| Band 1 VSWR, 433.10 to 433.30 MHz | | | | 1.7 | 2.8 | |
| Band 1 Attenuation Referenced to 0 dB: | | | | | | dB |
| 434.54 to 434.74 MHz | | | 25 | 37 | | |
| $f_{C1}$ + 2.40 MHz | | | 13 | 34 | | |
| $f_{C1}$ - 2.40 MHz | | | 25 | 33 | | |
| Band 2 Center Frequency | $f_{C2}$ | 1 | | 434.64 | | MHz |
| Band 2 Insertion Loss, 434.54 to 434.74 MHz | | | | 4 | 5.8 | dB |
| Band 2 Amplitude Ripple, 434.54 to 434.74 MHz | | | | 1 | 2.3 | dB |
| Band 2 VSWR, 434.54 to 434.74 MHz | | | | 1.7 | 2.8 | |
| Band 2 Attenuation Referenced to 0 dB: | | | | | | dB |
| 433.10 to 433.30 MHz | | | 19 | 35 | | |
| $f_{C2}$ + 2.40 MHz | | | 30 | 32 | | |
| $f_{C2}$ - 2.40 MHz | | | 30 | 33 | | |

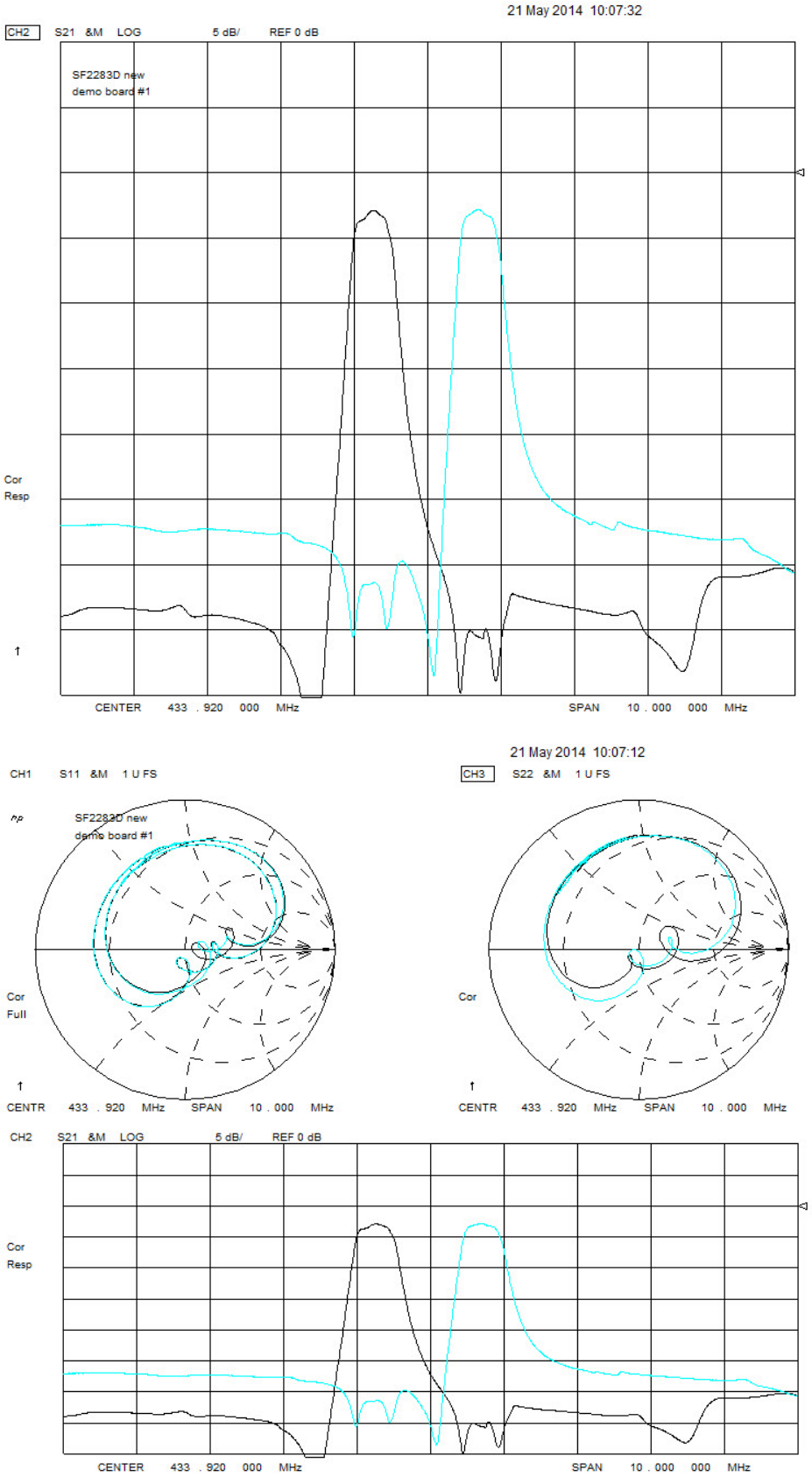
| | | |
|---|---|---|
| Case Style | | SM3838-8 3.8 x 3.8 mm Nominal Footprint |
| Lid Symbolization (Y=year, WW=week, S=shift) dot=pin 1 indicator | | A30, YWWS |
| Standard Reel Quantity | Reel Size 7 Inch | 500 Pieces/Reel |
| | Reel Size 13 Inch | 3000 Pieces/Reel |

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

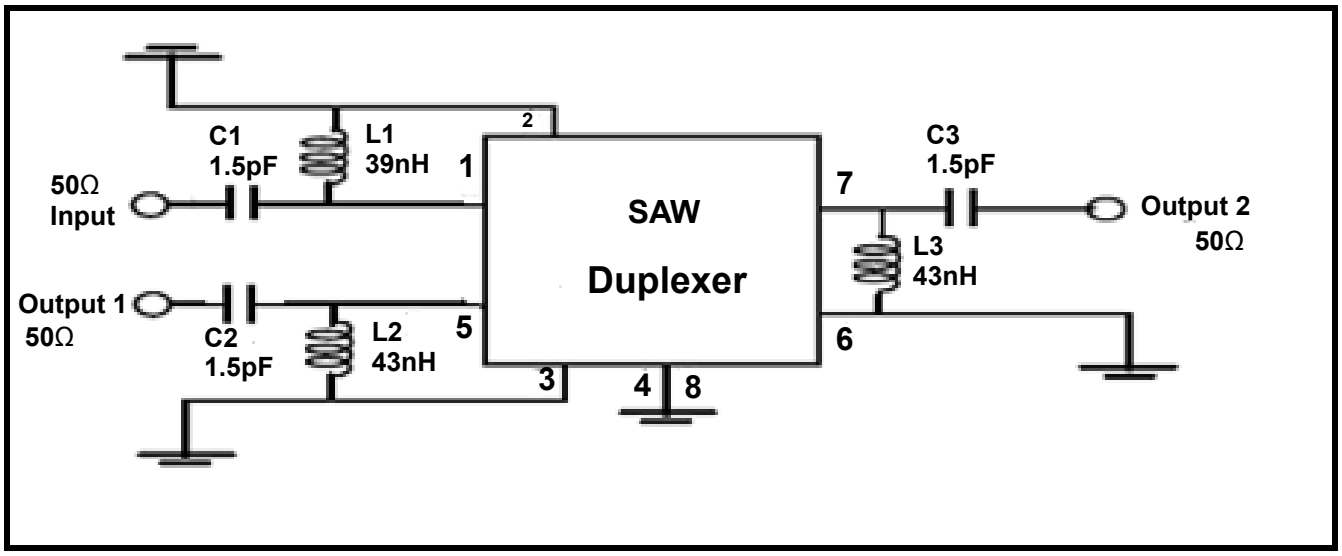
**NOTES:**

1. 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. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency, fc.
3. 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.
4. The design, manufacturing process, and specifications of this filter are subject to change.
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 Characteristics



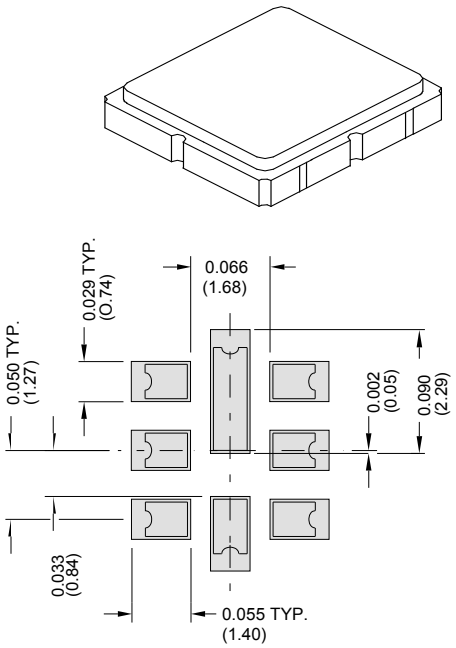
# SF2283D Schematic



# SM3838-8 Case

## 8-Terminal Ceramic Surface-mount Case

## 3.8 X 3.8 mm Nominal Footprint




**Typical PCB Footprint**

**Case Dimensions**

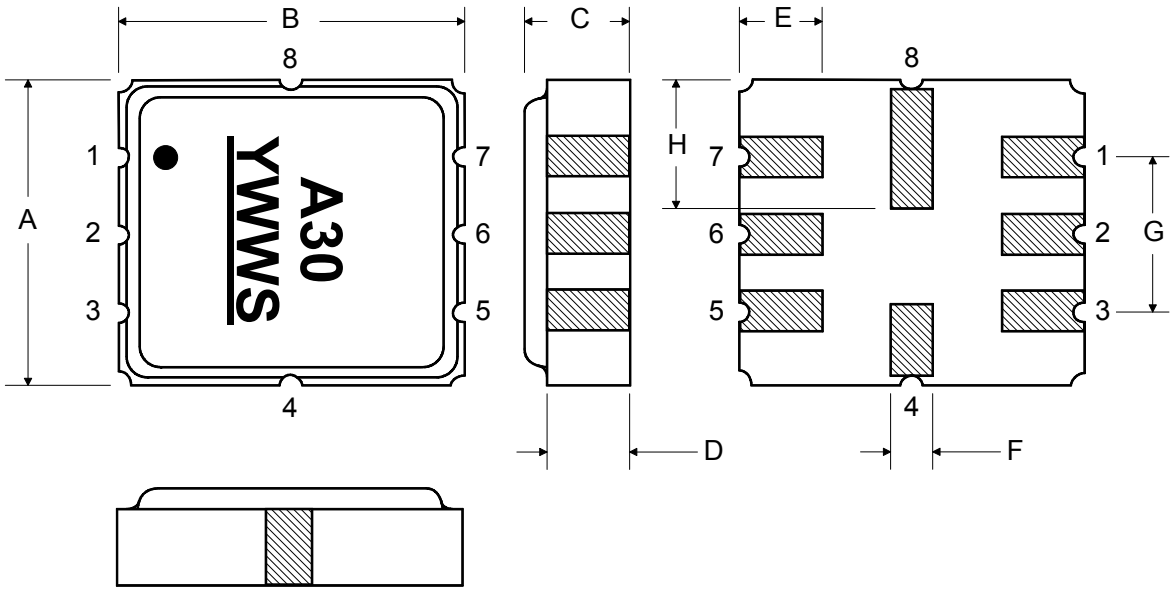
| Dimension | mm | | | Inches | | |
|---|---|---|---|---|---|---|
| | Min | Nom | Max | Min | Nom | Max |
| A | 3.6 | 3.8 | 4.0 | 0.142 | 0.150 | 0.157 |
| B | 3.6 | 3.8 | 4.0 | 0.142 | 0.150 | 0.157 |
| C | 1.05 | 1.20 | 1.40 | 0.041 | 0.047 | 0.055 |
| D | 0.95 | 1.10 | 1.25 | 0.037 | 0.043 | 0.049 |
| E | 0.90 | 1.00 | 1.10 | 0.035 | 0.040 | 0.043 |
| F | 0.50 | 0.60 | 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 |

**Electrical Connections**

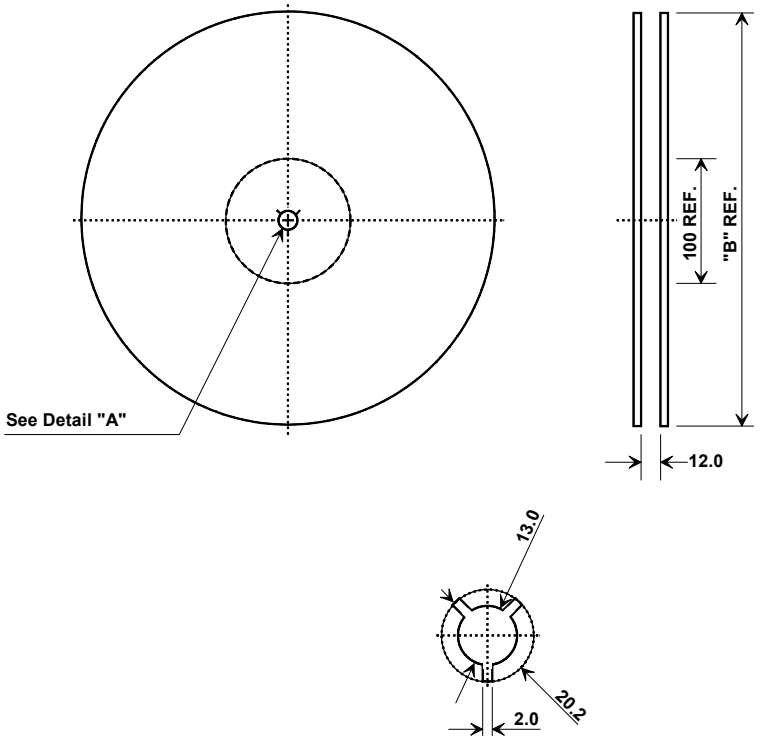
| Pin | Connection |
|---|---|
| 1 | Input |
| 2,3,6 | RF Ground |
| 4,8 | Case Ground |
| 5 | Band 1 Output |
| 7 | Band 2 Output |
| Dot Indicates Pin 1 | |

| 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 | 4.25 mm |
| Bo | 4.25 mm |
| Ko | 1.30 mm |
| Pitch | 8.0 mm |
| W | 12.0 mm |