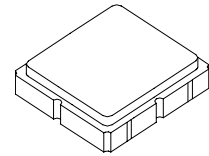




## SF1186B-3

## 1575.42 MHz SAW Filter



SM3030-6

- **Designed for GPS RF Front-end Applications**
- **Low Insertion Loss**
- **3.0 x 3.0 x 1.3 mm Surface-mount Case**
- **No Matching Circuit Required**
- **Complies with Directive 2002/95/EC (RoHS)**



Maximum Ratings at +25 °C unless stated otherwise

| Rating                                   | Symbol                | Value       | Units |
|--|-----------------------|-------------|-------|
| Maximum Input Signal Level               |                       | +10         | dBm   |
| Withstanding DC Voltage                  | WVdc                  | 4           | Volts |
| Operating Temperature Range              | T <sub>A</sub>        | -40 to +85  | °C    |
| Storage Temperature Range                | T <sub>STG</sub>      | -40 to +105 | °C    |
| Reflow Soldering Temperature, 10 Seconds | T <sub>Reflow10</sub> | 260         | °C    |
| Reflow Soldering Temperature, 40 Seconds | T <sub>Reflow40</sub> | 235         | °C    |

### Electrical Characteristics

| Characteristic                               | Sym   | Notes    | Min              | Typ     | Max | Units  |
|--|---|----------|------------------|---------|-----|--------|
| Center Frequency                             | f <sub>0</sub>  | 1        |                  | 1575.42 |     | MHz    |
| 1dB Passband width                           |   | 1        | 10               | 18      |     | MHz    |
| Pass Band VSWR Fc ±2.0                       |   |          |                  | 1.4     | 2.0 |        |
| Insertion Loss                               |   | 1        |                  | 2.68    | 3.5 | dB     |
| Absolute Attenuation @:                      | 850 MHz   | 1        | 45               | 51.2    |     | dB     |
|  | 1500 MHz  | 1        | 40               | 52.7    |     |        |
|  | 1535.42 MHz   | 1        | 20               | 38.9    |     |        |
|  | 1615.42 MHz   | 1        | 20               | 58.8    |     |        |
|  | 1640 MHz  | 1        | 45               | 59.1    |     |        |
|  | 1700 MHz  | 1        | 50               | 56.7    |     |        |
| Temperature Coefficient                      |   |          | -30              |         |     | ppm/°C |
| Operating Temperature                        | T <sub>A</sub>  | 1        | -40              |         | +85 | °C     |
| Single Ended Input / Output, Impedance match | No matching network required for operation at 50 ohms |          |                  |         |     |        |
| Case Style                                   | SM3030-6 3 x 3 mm Nominal Footprint                   |          |                  |         |     |        |
| Lid Symbolization                            | y=year, ww=week, s=shift                              | 598 YWWS |                  |         |     |        |
| Standard Reel Quantity                       | Reel Size 7 Inch                                      | 6        | 500 Pieces/Reel  |         |     |        |
|  | Reel Size 13 Inch                                     |          | 3000 Pieces/Reel |         |     |        |

### Electrical Connections

| Pin # | Description | Pin # | Description |
|-------|-------------|-------|-------------|
| 1     | Ground      | 4     | Ground      |
| 2     | Input       | 5     | Output      |
| 3     | Ground      | 6     | Ground      |

#### Notes:

1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board without impedance matching and measured with 50 Ω network analyzer.
2. The design, manufacturing process, and specifications of this filter are subject to change.
3. 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.

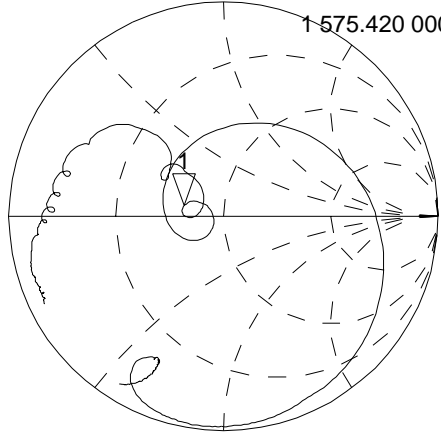
4. US and international patents may apply.
5. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.
6. Tape and Reel Standard Per ANSI / EIA 481.
7. Electrostatic Sensitive Device. Observe precautions for handling.





25 Jul 2005 11:15:25  
 CH1 S<sub>11</sub> 1 UFS 1\_ 34.395 Ω 3.5762 Ω 361.28 pH  
 [h]

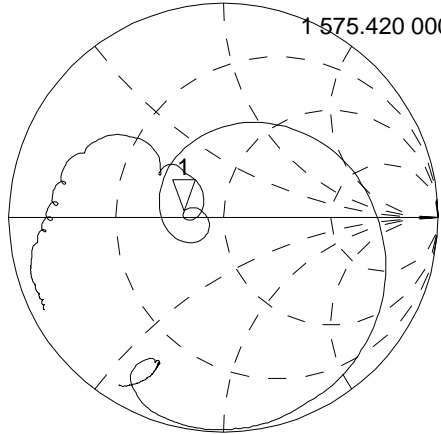
PRm  
 Cor



↑

CH2 S<sub>22</sub> 1 UFS 1\_: 34.543 Ω 2.1738 Ω 219.61 pH  
 SF1186B-2, demo untuned

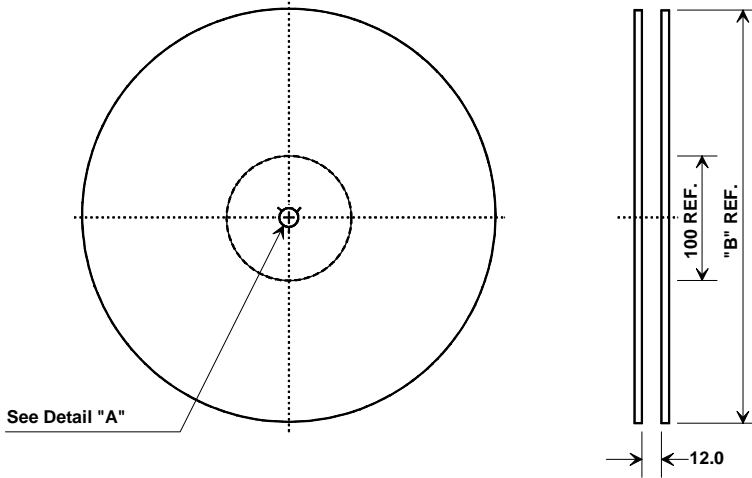
PRm  
 Cor



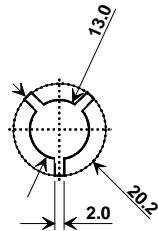
↑

CENTER 1 575.420 000 MHz SPAN 200.000 000 MHz

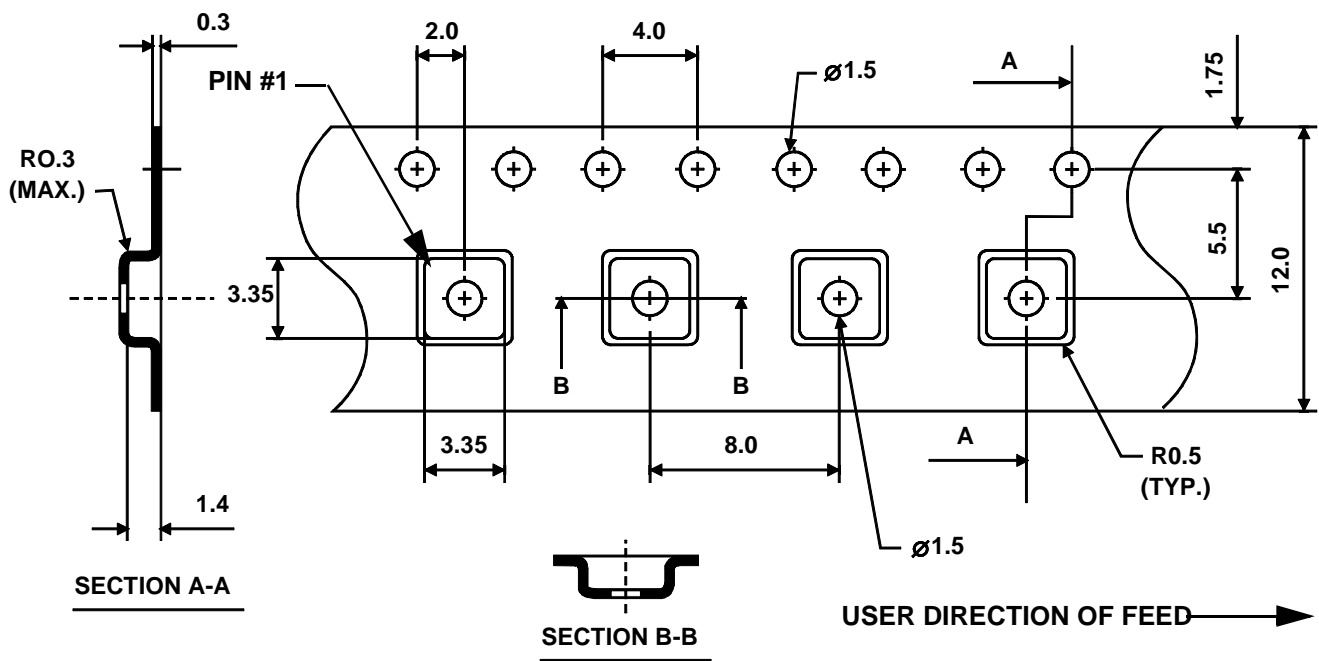
# Tape and Reel Specifications



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

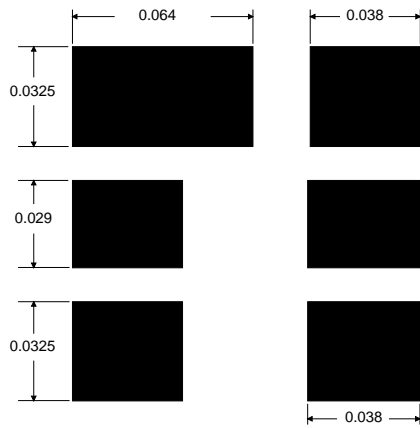
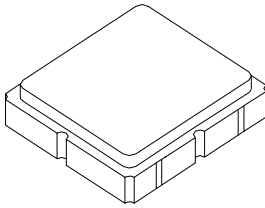


## COMPONENT ORIENTATION



# SM3030-6 Case

## 6-Terminal Ceramic Surface-Mount Case 3.0 X 3.0 mm Nominal Footprint



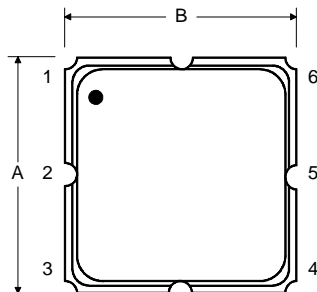
Foot Print Dimensions in Inches

| Case Dimensions |      |      |      |        |       |       |
|-----------------|------|------|------|--------|-------|-------|
| Dimension       | mm   |      |      | Inches |       |       |
|                 | Min  | Nom  | Max  | Min    | Nom   | Max   |
| A               | 2.87 | 3.0  | 3.13 | 0.113  | 0.118 | 0.123 |
| B               | 2.87 | 3.0  | 3.13 | 0.113  | 0.118 | 0.123 |
| C               | 1.12 | 1.25 | 1.38 | 0.044  | 0.049 | 0.054 |
| D               | 0.77 | 0.9  | 1.03 | 0.030  | 0.035 | 0.040 |
| E               | 2.67 | 2.80 | 2.93 | 0.105  | 0.110 | 0.115 |
| F               | 1.47 | 1.6  | 1.73 | 0.058  | 0.063 | 0.068 |
| G               | 0.72 | 0.85 | 0.98 | 0.028  | 0.033 | 0.038 |
| H               | 1.37 | 1.5  | 1.63 | 0.054  | 0.059 | 0.064 |
| I               | 0.47 | 0.6  | 0.73 | 0.019  | 0.024 | 0.029 |
| J               | 1.17 | 1.3  | 1.43 | 0.046  | 0.051 | 0.056 |

| Electrical Connections      |                     |            |
|-----------------------------|---------------------|------------|
| Connection                  | Terminals           |            |
| Port 1                      | Single-ended Input  | 2          |
| Port 2                      | Single-ended Output | 5          |
|                             | Ground              | All others |
| Single-ended Operation Only |                     |            |
| Dot indicates Pin 1         |                     |            |

| Case Materials     |  |
|--------------------|--|
| Solder Pad Plating | 0.3 to 1.0 $\mu\text{m}$ Gold over 1.27 to 8.89 $\mu\text{m}$ Nickel |
| Lid Plating        | 2.0 to 3.0 $\mu\text{m}$ Nickel                                      |
| Body               | $\text{Al}_2\text{O}_3$ Ceramic                                      |
| Pb Free            |  |

TOP VIEW



BOTTOM VIEW

