

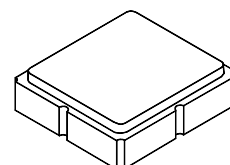


- Low-loss RF SAW Filter
- 3.0 x 3.0 x 1.4 mm Surface-mount Case
- No Matching Required for 50  $\Omega$  Operation
- Complies with Directive 2002/95/EC (RoHS)



**SF2252E**

**1590 MHz  
SAW Filter**



**SM3030-6**

#### Absolute Maximum Ratings

| Rating                                                  | Value      | Units |
|---------------------------------------------------------|------------|-------|
| Incident Power in Passband                              | +10        | dBm   |
| DC Voltage on any Non-ground Terminal                   | 3          | VDC   |
| Operating Temperature Range                             | -55 to +85 | °C    |
| Storage Temperature Range in Tape and Reel              | -40 to +85 | °C    |
| Maximum Soldering Profile, 5 cycles/ 10 seconds maximum | 265        | °C    |

#### Electrical Characteristics

| Characteristic                              | Sym                                                   | Notes | Min | Typ  | Max | Units             |
|---------------------------------------------|-------------------------------------------------------|-------|-----|------|-----|-------------------|
| Center Frequency                            | $f_c$                                                 |       |     | 1590 |     | MHz               |
| Minimum Insertion Loss                      | IL                                                    |       |     | 2.3  | 4.0 | dB                |
| Amplitude Ripple                            |                                                       |       |     | 1.0  | 1.8 | dB <sub>p-p</sub> |
| 1.2 dB Bandwidth                            | BW <sub>1.2</sub>                                     |       | 55  | 59   | 65  | MHz               |
| 20 dB Bandwidth                             | BW <sub>20</sub>                                      |       |     | 97   | 125 | MHz               |
| Ultimate Rejection                          |                                                       |       |     | 50   |     | dB                |
| Terminating Source impedance                | $Z_L$                                                 |       |     | 50   |     | $\Omega$          |
| Terminating Load impedance                  | $Z_L$                                                 |       |     | 50   |     | $\Omega$          |
| Single Ended Input / Output Impedance match | No matching network required for operation at 50 ohms |       |     |      |     |                   |
| Case Style                                  | SM3030-6                                              |       |     |      |     |                   |
| Lid Symbolization                           | 993                                                   |       |     |      |     |                   |

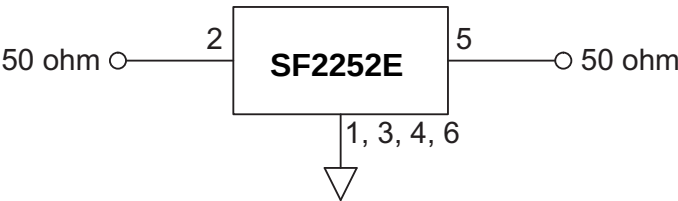


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

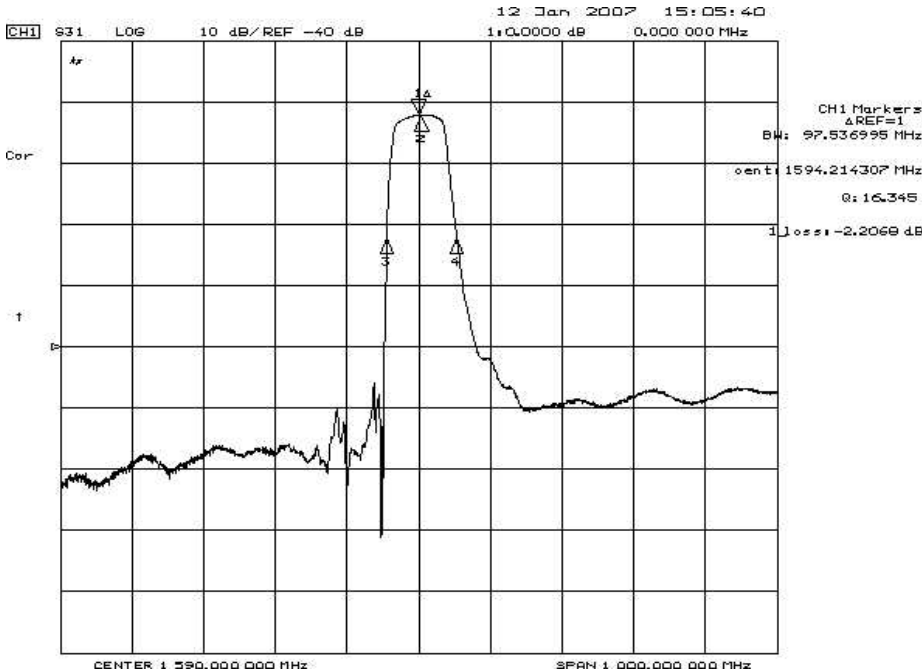
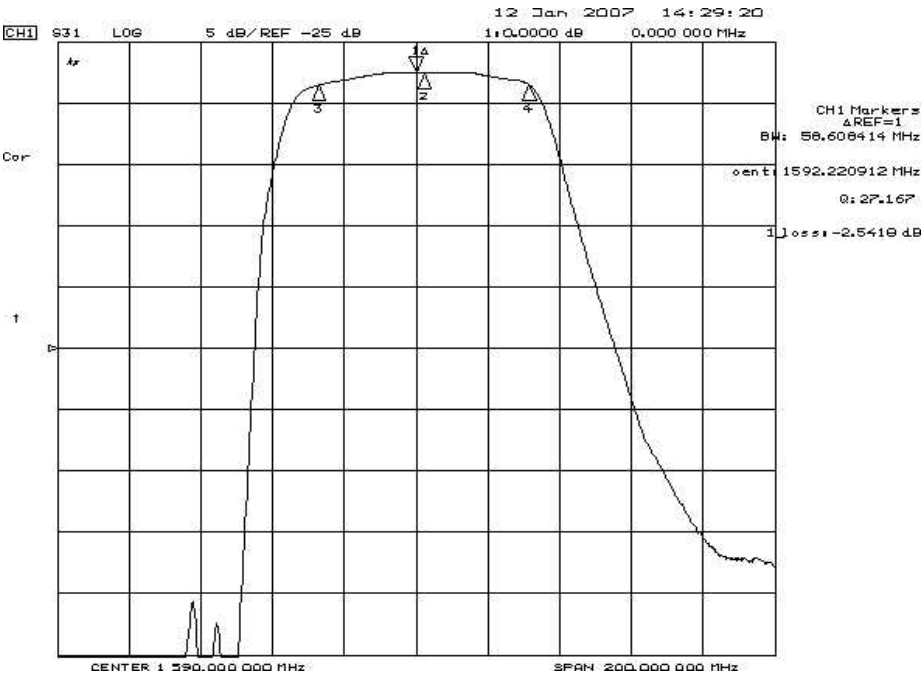
**Notes:**

1. US and international patents may apply.
2. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.

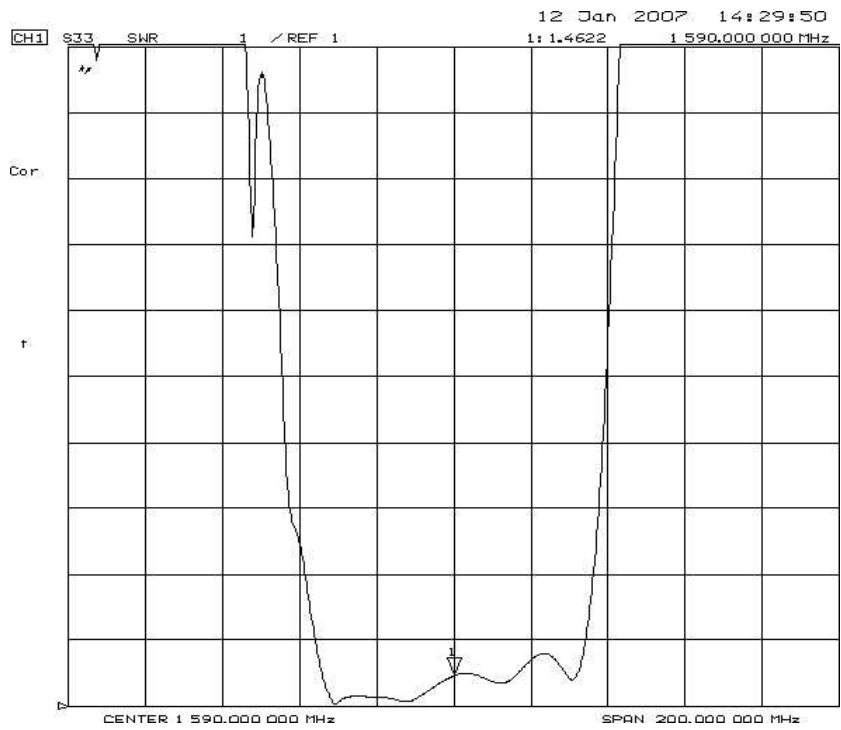
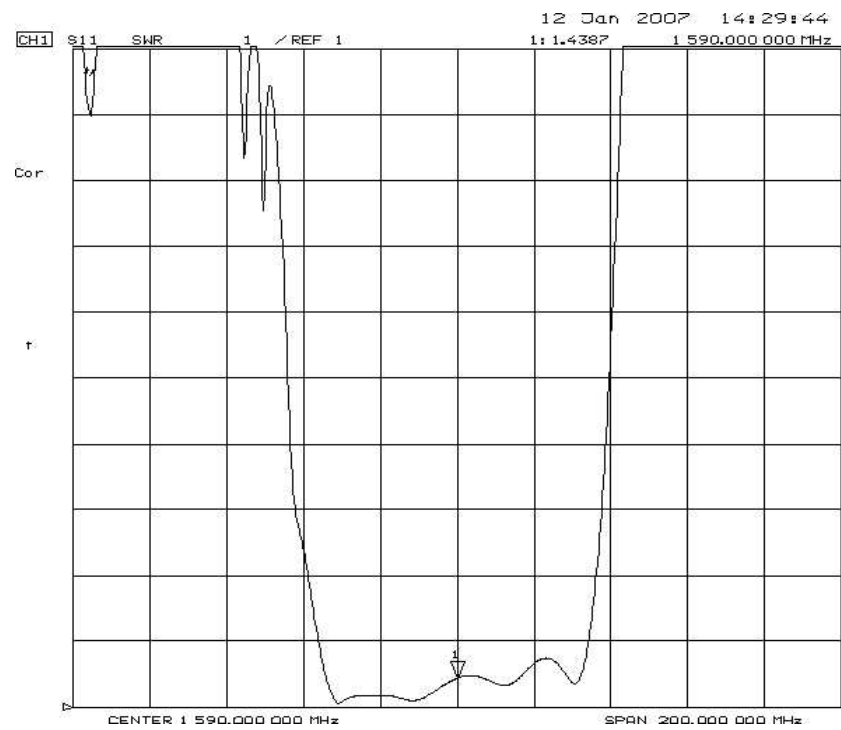
# Matching Circuit



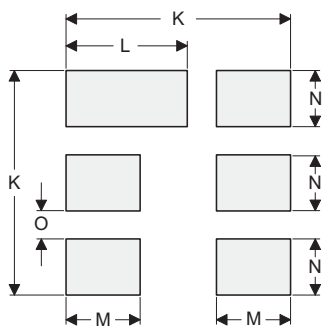
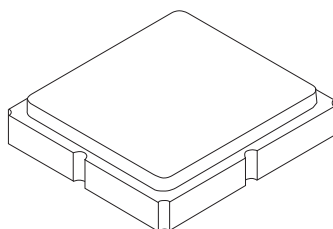
## Frequency Response Plots



# VSWR Plots



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



**PCB Footprint Top View**

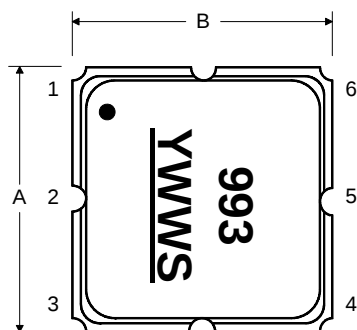
**Case and PCB Footprint Dimensions**

| Dimension | mm   |      |      | Inches |       |       |
|-----------|------|------|------|--------|-------|-------|
|           | Min  | Nom  | Max  | Min    | Nom   | Max   |
| A         | 2.87 | 3.00 | 3.13 | 0.113  | 0.118 | 0.123 |
| B         | 2.87 | 3.00 | 3.13 | 0.113  | 0.118 | 0.123 |
| C         | 1.12 | 1.25 | 1.38 | 0.044  | 0.049 | 0.054 |
| D         | 0.77 | 0.90 | 1.03 | 0.030  | 0.035 | 0.040 |
| E         | 2.67 | 2.80 | 2.93 | 0.105  | 0.110 | 0.115 |
| F         | 1.47 | 1.60 | 1.73 | 0.058  | 0.063 | 0.068 |
| G         | 0.72 | 0.85 | 0.98 | 0.028  | 0.033 | 0.038 |
| H         | 1.37 | 1.50 | 1.63 | 0.054  | 0.059 | 0.064 |
| I         | 0.47 | 0.60 | 0.73 | 0.019  | 0.024 | 0.029 |
| J         | 1.17 | 1.30 | 1.43 | 0.046  | 0.051 | 0.056 |
| K         |      | 3.20 |      |        | 0.126 |       |
| L         |      | 1.70 |      |        | 0.067 |       |
| M         |      | 1.05 |      |        | 0.041 |       |
| N         |      | 0.81 |      |        | 0.032 |       |
| O         |      | 0.38 |      |        | 0.015 |       |

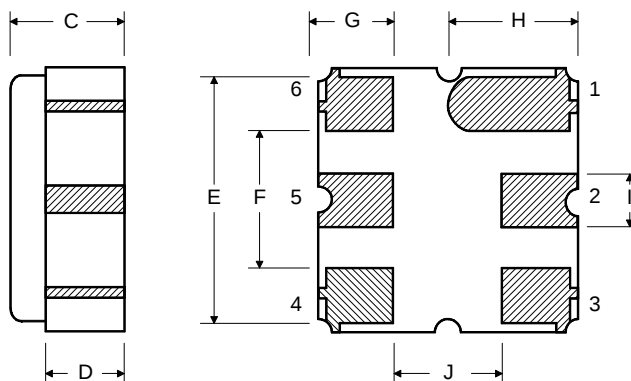
**Case Materials**

| Materials          |                                                          |
|--------------------|----------------------------------------------------------|
| Solder Pad Plating | 0.3 to 1.0 $\mu$ m Gold over 1.27 to 8.89 $\mu$ m Nickel |
| Lid Plating        | 2.0 to 3.0 $\mu$ m Nickel                                |
| Body               | Al <sub>2</sub> O <sub>3</sub> Ceramic                   |
| Pb Free            |                                                          |

**TOP VIEW**



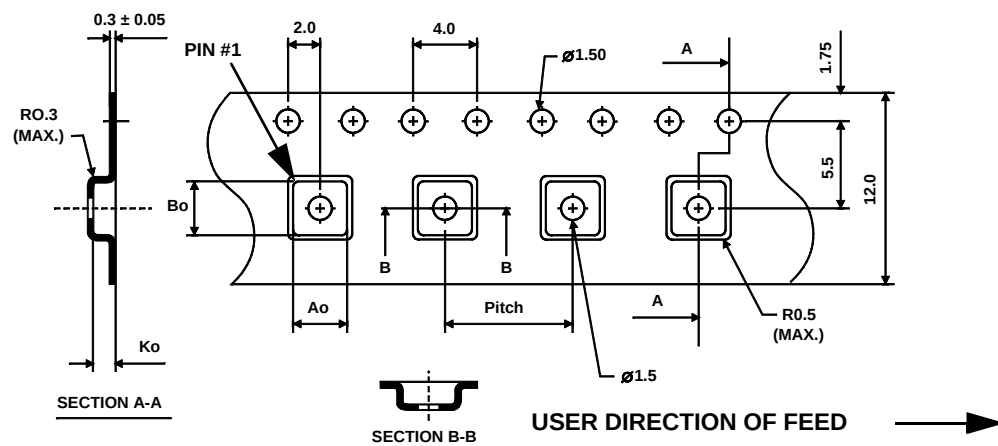
**BOTTOM VIEW**



Technical drawing of a circular component. The main view shows a large circle with a smaller concentric circle in the center. A horizontal dashed line and a vertical dashed line intersect at the center. A leader line points from the text "See Detail 'A'" to the central hole. To the right, a side view shows two parallel vertical lines representing the thickness of the component. Dimension lines indicate a width of 12.0 and a height of 100 REF. and "B" REF. Below the main view, a detail view 'A' shows a cross-section of the central hole. It is a circular feature with a central hole. Dimension lines indicate a radius of 13.0, a thickness of 2.0, and a distance of 20.2 from the center to the edge of the hole.

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

| Carrier Tape Dimensions |         |
|-------------------------|---------|
| Ao                      | 3.35 mm |
| Bo                      | 3.35 mm |
| Ko                      | 1.40 mm |
| Pitch                   | 8.0 mm  |
| W                       | 12.0 mm |



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