



- RF Filter for Mobile Communication Applications
- No Matching Circuit Required
- 3.0 x 3.0 x 1.3 mm Package
- Complies with Directive 2002/95/EC (RoHS)

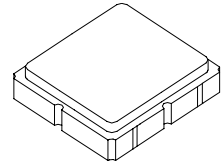


#### Absolute Maximum Ratings

| Rating                                                 | Value      | Units |
|--------------------------------------------------------|------------|-------|
| Maximum Input Power                                    | +10        | dBm   |
| DC Voltage on any Non-ground Terminal                  | 0          | VDC   |
| Storage Temperature Range in Tape and Reel             | -40 to +85 | °C    |
| Maximum Soldering Profile, 5 cycles/10 seconds maximum | 265        | °C    |

**SF2001E**

**1960 MHz  
SAW Filter**



**SM3030-6**

#### Electrical Characteristics

| Characteristic                          | Sym   | Notes | Min  | Typ  | Max | Units             |
|-----------------------------------------|-------|-------|------|------|-----|-------------------|
| Nominal Operating Frequency             | $f_C$ |       |      | 1960 |     | MHz               |
| Passband Insertion Loss, 1930 -1990 MHz | IL    |       |      | 2.35 | 4.0 | dB                |
| Amplitude Ripple, 1930 -1990 MHz        |       |       |      | 1.4  | 2.4 | dB <sub>P-P</sub> |
| Attenuation Referenced to 0 dB          |       |       |      |      |     |                   |
| DC to 1850 MHz                          |       |       | 20.0 | 32.0 |     | dB                |
| 1850 to 1910 MHz                        |       |       | 10.0 | 21.0 |     | dB                |
| 2010 to 2040 MHz                        |       |       | 4.5  | 10.0 |     | dB                |
| 2040 to 2070 MHz                        |       |       | 20.0 | 50   |     | dB                |
| 2070 to 5000 MHz                        |       |       | 22.0 | 29.0 |     | dB                |
| 5000 to 6000 MHz                        |       |       | 10.0 | 15.0 |     | dB                |
| VSWR, 1930 to 1990 MHz                  |       |       |      | 1.7  | 2.4 |                   |
| Source impedance                        | $Z_S$ |       |      | 50   |     | $\Omega$          |
| Load impedance                          | $Z_L$ |       |      | 50   |     | $\Omega$          |
| Operating Temperature                   | $T_A$ |       | -30  |      | +80 | °C                |

|                                             |                                     |
|---------------------------------------------|-------------------------------------|
| Case Style                                  | SM3030-6 3 x 3 mm Nominal Footprint |
| Lid Symbolization (Y=year, WW=week S=shift) | 652 YWWS                            |

#### Electrical Connections

| Connection | Terminals  |
|------------|------------|
| Input      | 2          |
| Output     | 5          |
| Ground     | All others |

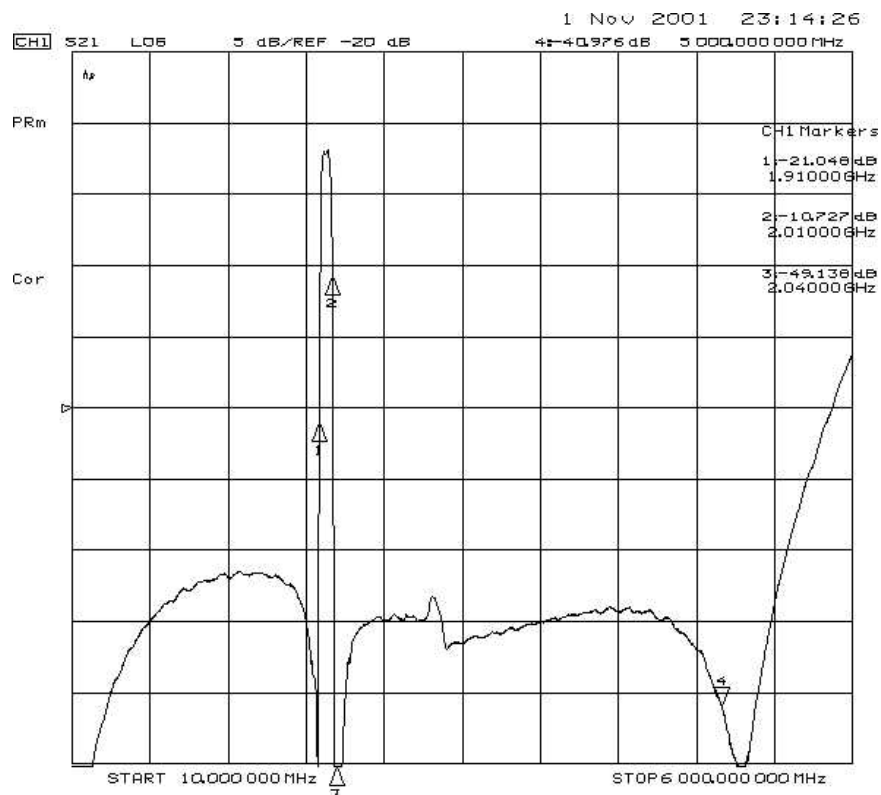
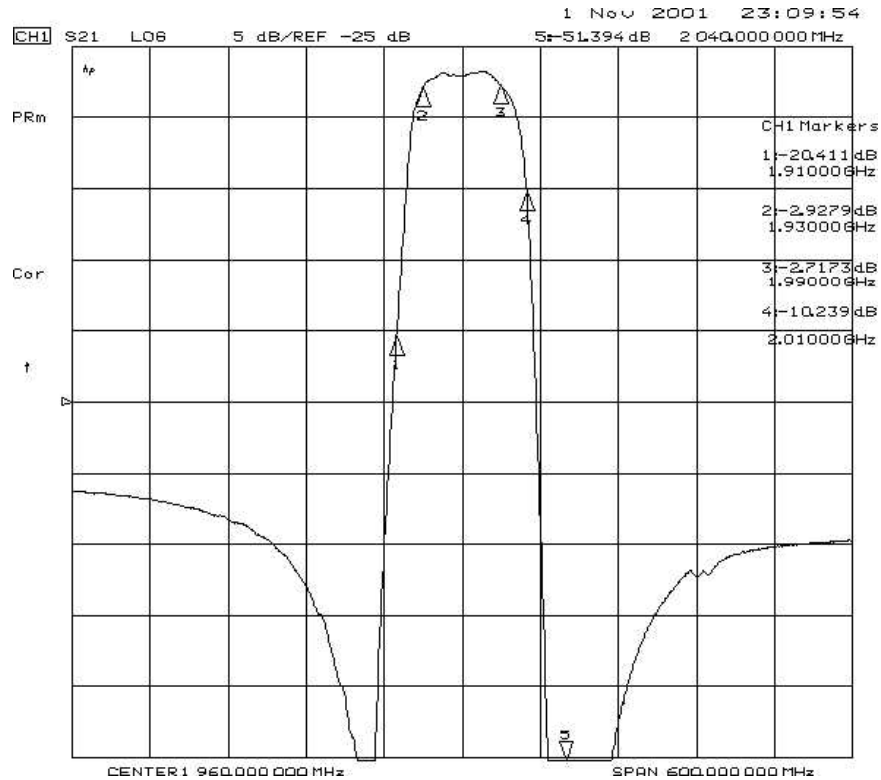


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

#### Notes:

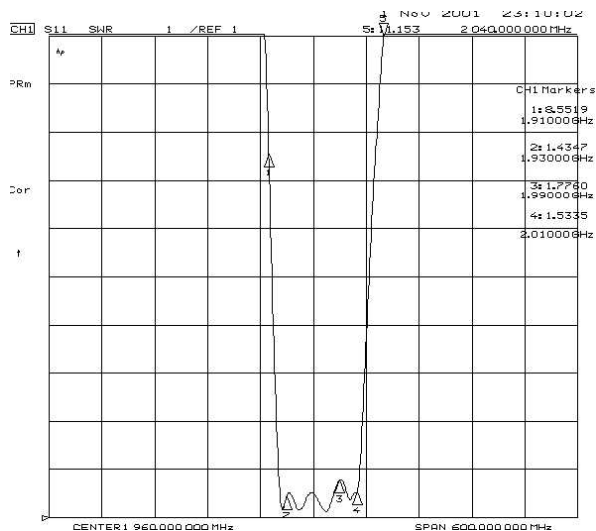
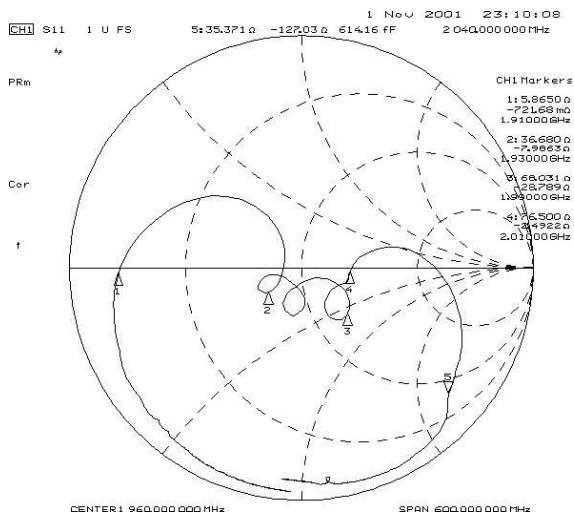
1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to 50  $\Omega$  and measured with 50  $\Omega$  network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency,  $f_C$ .
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. "LRIP" or "L" after the part number indicates "low rate initial production" and "ENG" or "E" indicates "engineering prototypes."
5. The design, manufacturing process, and specifications of this filter are subject to change.
6. 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.
7. US and international patents may apply.
8. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.

## Frequency Characteristics:

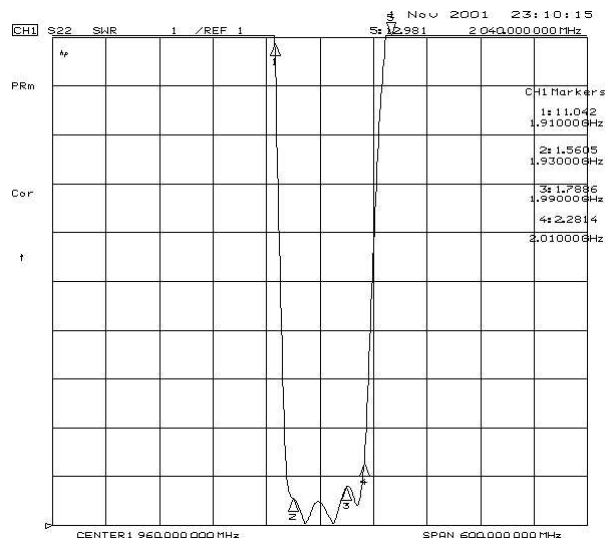
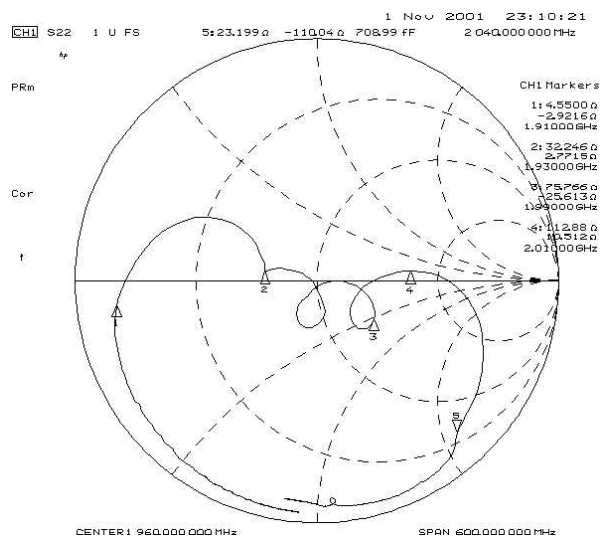


## Reflections Functions:

### S11 VSWR

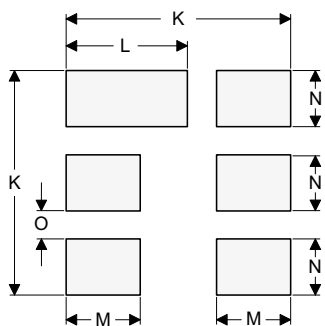
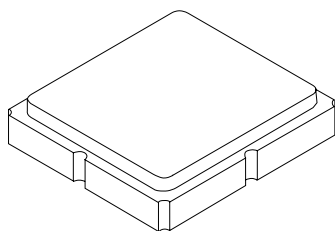


### S22 VSWR



# SM3030-6 Case

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



PCB Footprint Top View

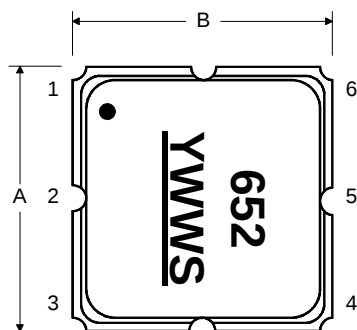
Case and PCB Footprint Dimensions

| 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 |       |

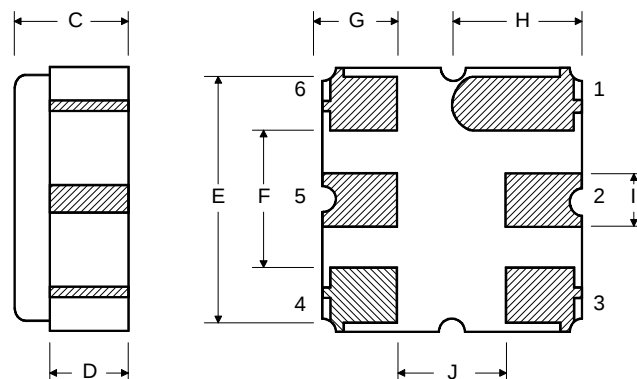
Case Materials

| 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            |                                                          |

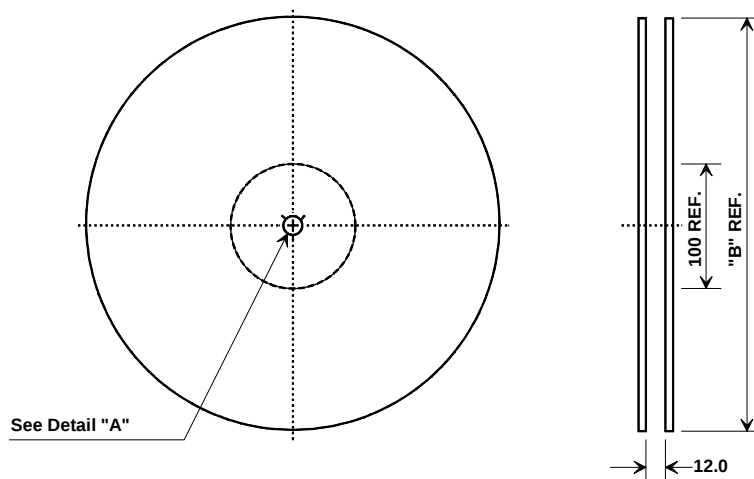
Top View



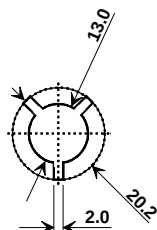
Bottom View



## Tape and Reel Specifications



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



### COMPONENT ORIENTATION

