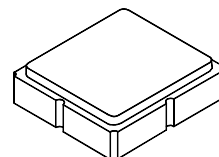


- **Low-loss UHF SAW Filter**
- **3.0 x 3.0 Surface-mount Package**
- **Complies with Directive 2002/95/EC (RoHS)**



**SF2249E**

**1602 MHz  
SAW Filter**



**SM3030-8**

#### Maximum Rating

| Rating   | Value      | Units |
|--|------------|-------|
| Input Power Level                                      | +10        | dBm   |
| DC Voltage on any Non-ground Terminal                  | 3          | V     |
| Operating Temperature Range                            | -40 to +85 | °C    |
| Storage Temperature Range in Tape and Reel             | -40 to +85 | °C    |
| Solder Reflow Temperature, 10 seconds/5 cycles maximum | 260        | °C    |

| Characteristic                             | Sym             | Not | Min            | Typ  | Max | Units |
|--|-----------------|-----|----------------|------|-----|-------|
| Center Frequency                           | f <sub>C</sub>  |     |                | 1602 |     | MHz   |
| 3 dB Bandwidth                             | BW <sub>3</sub> |     |                | 61   |     |       |
| Insertion Loss, 1596 to 1607 MHz           | IL              |     |                | 3.0  | 4.0 | dB    |
| Amplitude Ripple, 1596 to 1607 MHz         |                 |     |                | 0.6  | 2.0 |       |
| Group Delay Ripple, 1596 to 1607 MHz       |                 |     |                | 6    | 15  | ns    |
| Input/Output Return Loss, 1596 to 1607 MHz |                 |     | 8              | 9    |     | dB    |
| Attenuation, 0 dB Reference:               |                 |     |                |      |     | dB    |
| 10 to 1500 MHz                             |                 |     | 45             | 48   |     |       |
| 1700 to 2400 MHz                           |                 |     | 43             | 50   |     |       |
| 200 ohm Balanced Source Impedance          |                 |     | 200 Ω    18 nH |      |     |       |
| 200 ohm Balanced Load Impedance            |                 |     | 200 Ω    18 nH |      |     |       |

|  |   |                  |  |  |  |  |
|--|---|------------------|--|--|--|--|
| Case Style   | SM3030-8 3.0 x 3.0 mm Nominal Footprint |                  |  |  |  |  |
| Lid Symbolization, Y=year, WW=week, S=shift, dot=pin 1 indicator | 990, YWWS                               |                  |  |  |  |  |
| Standard Reel Quantity   | Reel Size 7 inch                        | 500 Pieces/Reel  |  |  |  |  |
|  | Reel Size 13 inch                       | 3000 Pieces/Reel |  |  |  |  |

#### Electrical Connections

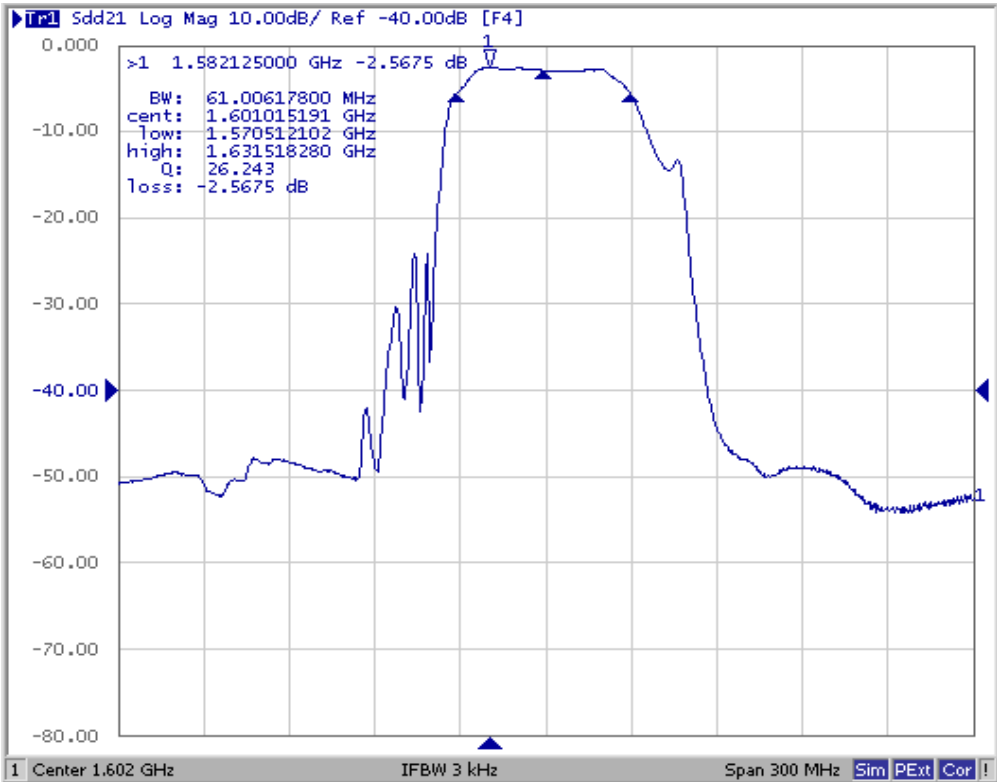
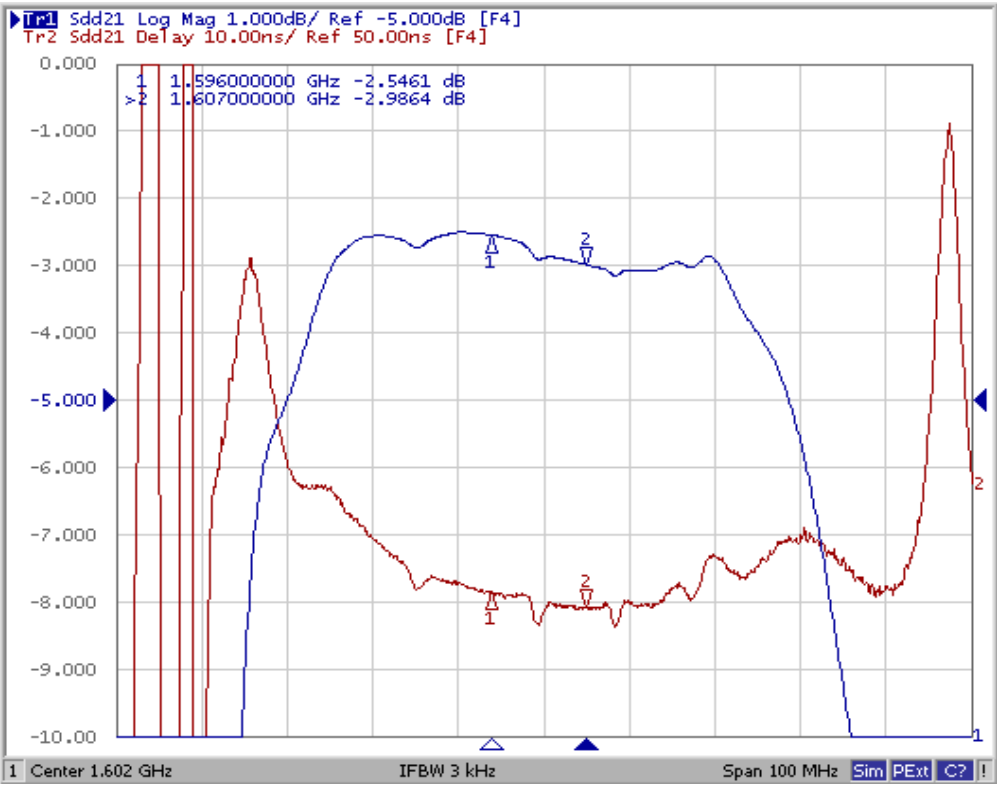
| Connection      | Terminals  |
|-----------------|------------|
| Input           | 1, 2       |
| Balanced Output | 5, 6       |
| Case Ground     | All others |

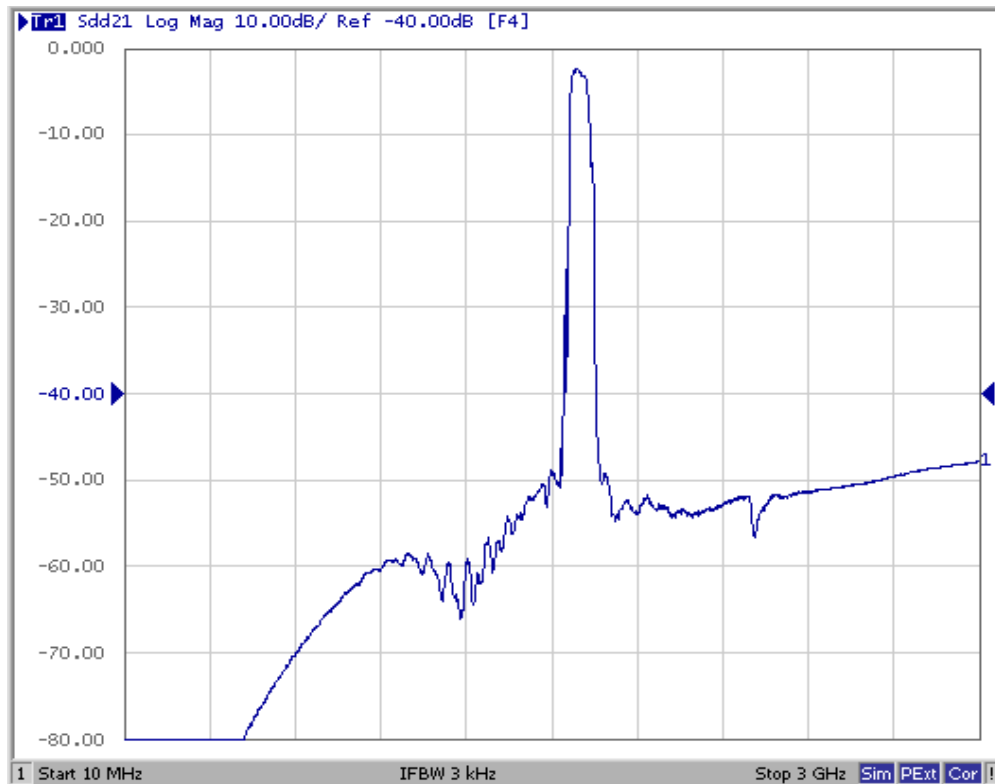


#### NOTES:

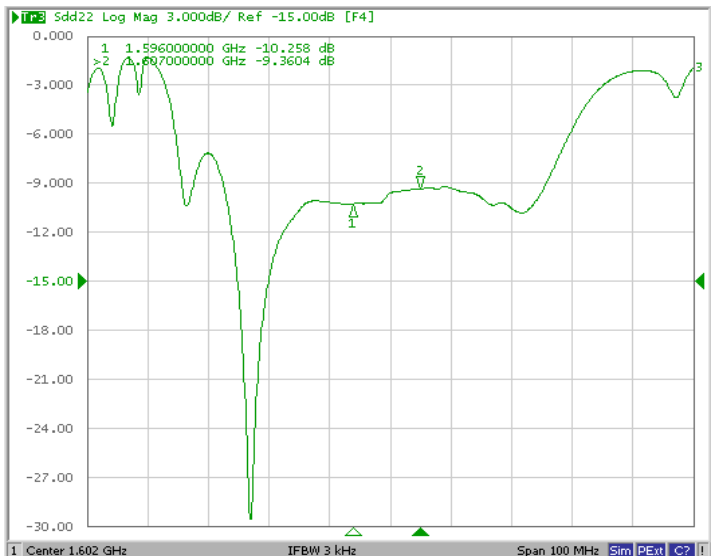
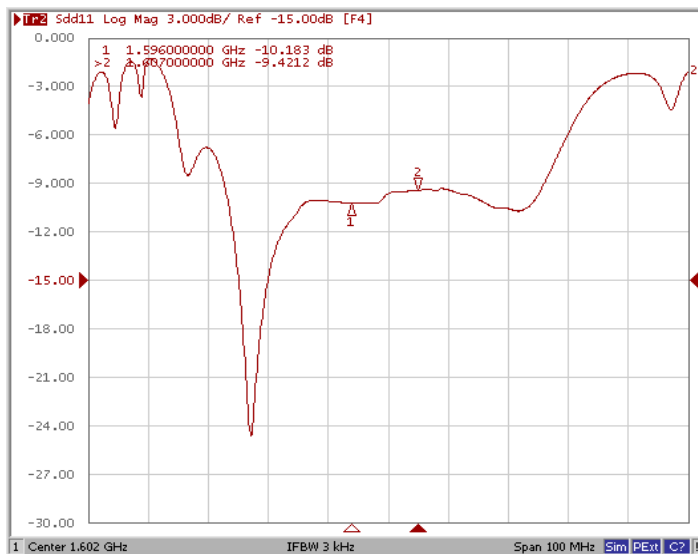
1. US and international patents may apply.
2. Murata, stylized Murata logo, and Murata N.A., Inc. are registered trademarks of Murata Manufacturing Co., Ltd.
3. Electrostatic Sensitive Device. Observe precautions for handling.

# Filter Response Plots



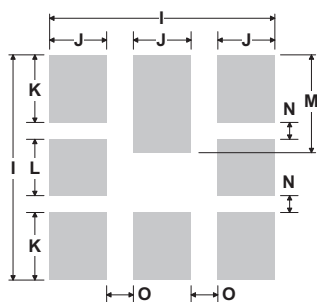
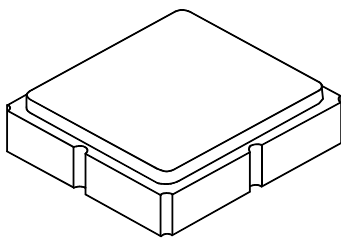


## Input/Output Return Loss Plots



## 8-Terminal Ceramic Surface-Mount Case

### 3.0 X 3.0 mm Nominal Footprint



PCB Footprint Top View

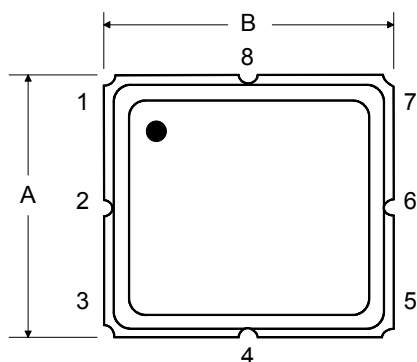
Case and PCB Footprint Dimensions

| 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         | -    | -    | 1.10 | -      | -     | 0.043 |
| D         | 0.79 | 0.92 | 1.05 | 0.031  | 0.036 | 0.041 |
| E         | 0.62 | 0.75 | 0.88 | 0.024  | 0.029 | 0.034 |
| F         | 0.47 | 0.60 | 0.73 | 0.018  | 0.024 | 0.029 |
| G         | 0.47 | 0.60 | 0.73 | 0.018  | 0.024 | 0.029 |
| H         | 1.07 | 1.20 | 1.33 | 0.042  | 0.047 | 0.052 |
| I         |      | 3.19 |      |        | 0.126 |       |
| J         |      | 0.81 |      |        | 0.032 |       |
| K         |      | 0.96 |      |        | 0.038 |       |
| L         |      | 0.81 |      |        | 0.032 |       |
| M         |      | 1.39 |      |        | 0.055 |       |
| N         |      | 0.23 |      |        | 0.009 |       |
| O         |      | 0.38 |      |        | 0.015 |       |

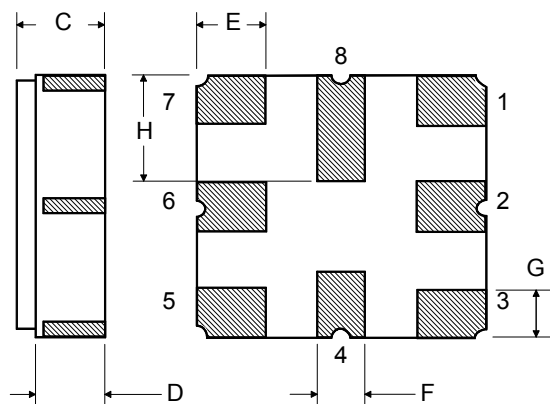
Case Materials

| 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            |  |

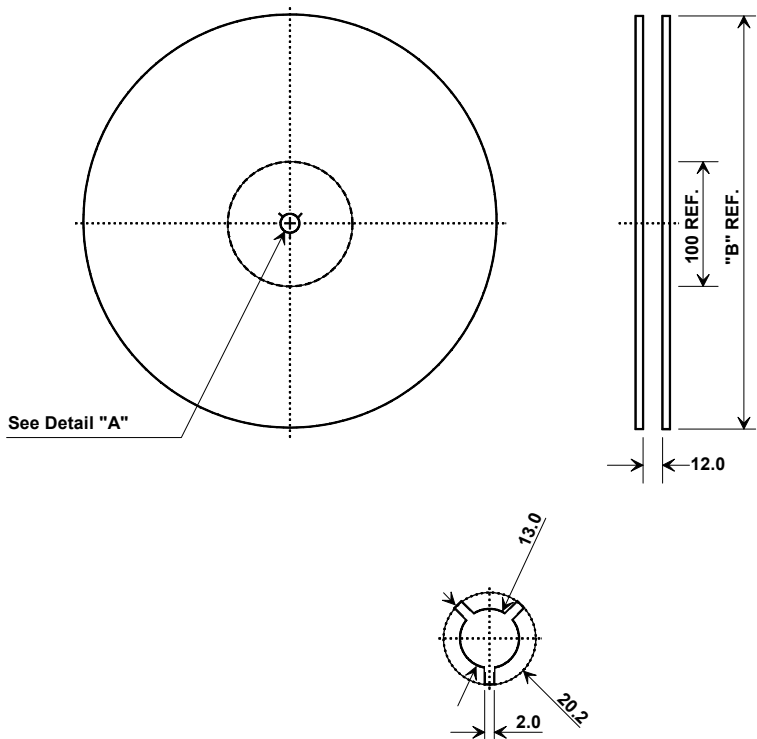
TOP VIEW



BOTTOM VIEW



# Tape and Reel Specifications



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

| Carrier Tape Dimensions |         |
|-------------------------|---------|
| Ao                      | 3.35 mm |
| Bo                      | 3.35 mm |
| Ko                      | 1.4 mm  |
| Pitch                   | 8.0 mm  |
| W                       | 12.0 mm |

## COMPONENT ORIENTATION and DIMENSIONS

