

# Preliminary



- Low-loss UHF SAW Filter
- Complies with Directive 2002/95/EC (RoHS)



## Characteristics:

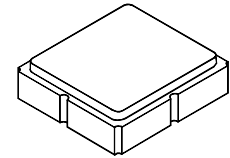
Single-ended source impedance :  $Z_S = 50 \Omega$   
 Balanced load impedance :  $Z_L = 100 \Omega$

## 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    |
| Tape and Reel Storage Temperature Range                | -40 to +85 | °C    |
| Component Storage Temperature Range                    | -50 to +95 | °C    |
| Solder Reflow Temperature, 10 seconds/5 cycles maximum | 260        | °C    |

# SF2177E

# 1472 MHz SAW Filter



**SM3030-8**

## Electrical Characteristics

| Characteristic                       | Sym   | Notes | Min | Typ  | Max | Units             |
|--------------------------------------|-------|-------|-----|------|-----|-------------------|
| Center Frequency                     | $f_C$ |       |     | 1472 |     | MHz               |
| Insertion Loss, 1452 to 1492 MHz     | IL    |       |     | 3.2  | 4.5 | dB                |
| Amplitude Ripple, 1452 to 1492 MHz   |       |       |     | 1.0  | 2.0 |                   |
| Group Delay Ripple, 1452 to 1492 MHz |       |       |     | 8    | 40  | ns <sub>p-p</sub> |
| Input Return Loss, 1452 to 1492 MHz  |       |       | 6.5 | 8.0  |     | dB                |
| Output Return Loss, 1452 to 1492 MHz |       |       | 8.8 | 10.5 |     |                   |
| Attenuation, 0 dB Reference:         |       |       |     |      |     | dB                |
| 880 to 915 MHz                       |       |       | 50  | 54   |     |                   |
| 1410 MHz                             |       |       | 30  | 35   |     |                   |
| 1530 to 1570 MHz                     |       |       | 15  | 29   |     |                   |
| 1575 MHz                             |       |       | 30  | 38   |     |                   |
| 1710 to 1785 MHz                     |       |       | 35  | 40   |     |                   |
| 1920 to 1980 MHz                     |       |       | 35  | 37.5 |     |                   |
| 2400 to 2500 MHz                     |       |       | 26  | 31.5 |     |                   |

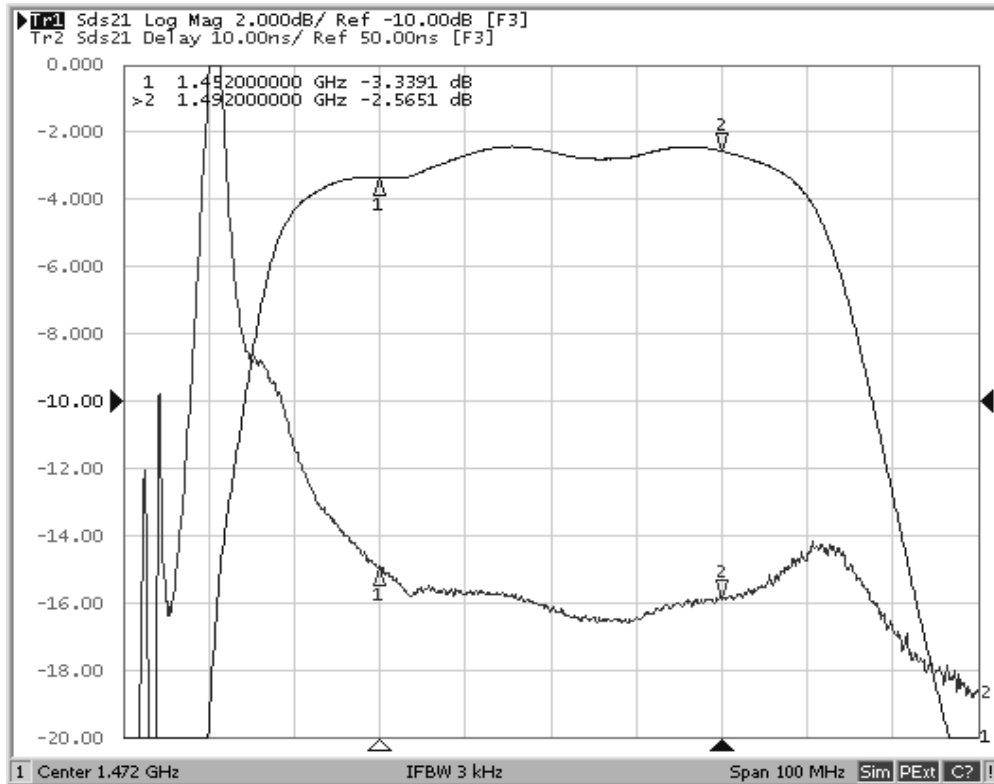
|  |   |                  |  |
|--|---|------------------|--|
| Case Style   | SM3030-8 3.0 x 3.0 mm Nominal Footprint |                  |  |
| Lid Symbolization, Y=year, WW=week, S=shift, dot=pin 1 indicator | 866, YWWS                               |                  |  |
| Standard Reel Quantity   | Reel Size 7 inch                        | 500 Pieces/Reel  |  |
|  | Reel Size 13 inch                       | 3000 Pieces/Reel |  |



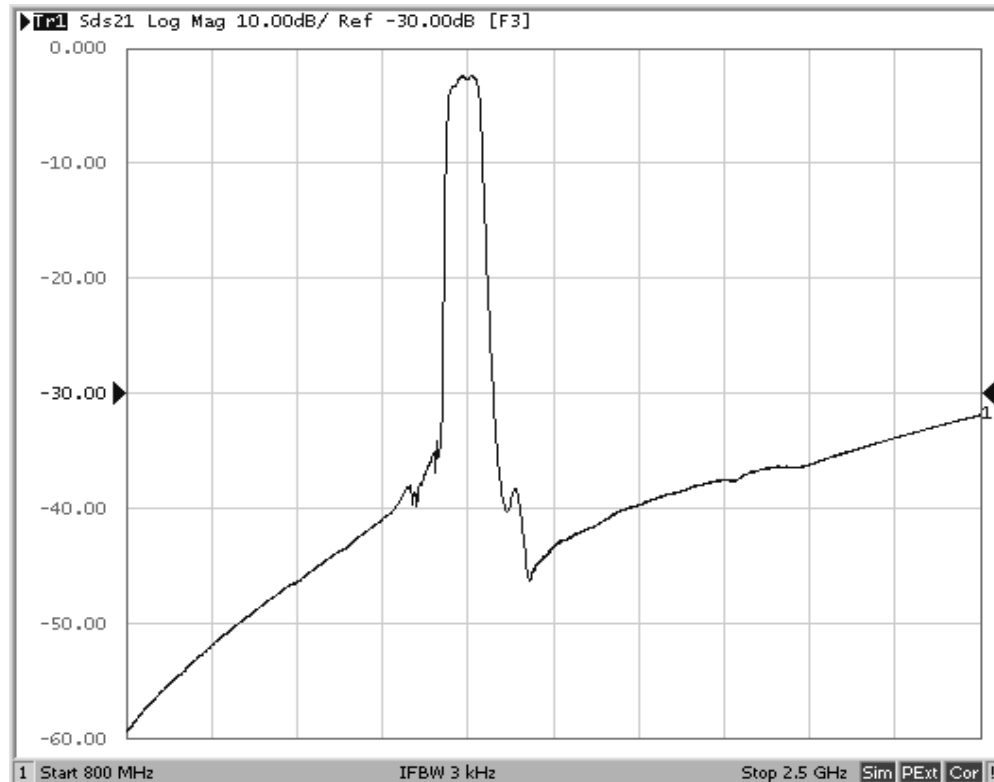
## Notes:

1. US and international patents may apply.
2. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.
3. Electrostatic Sensitive Device. Observe precautions for handling.

## Filter Passband Amplitude and Group Delay Plots



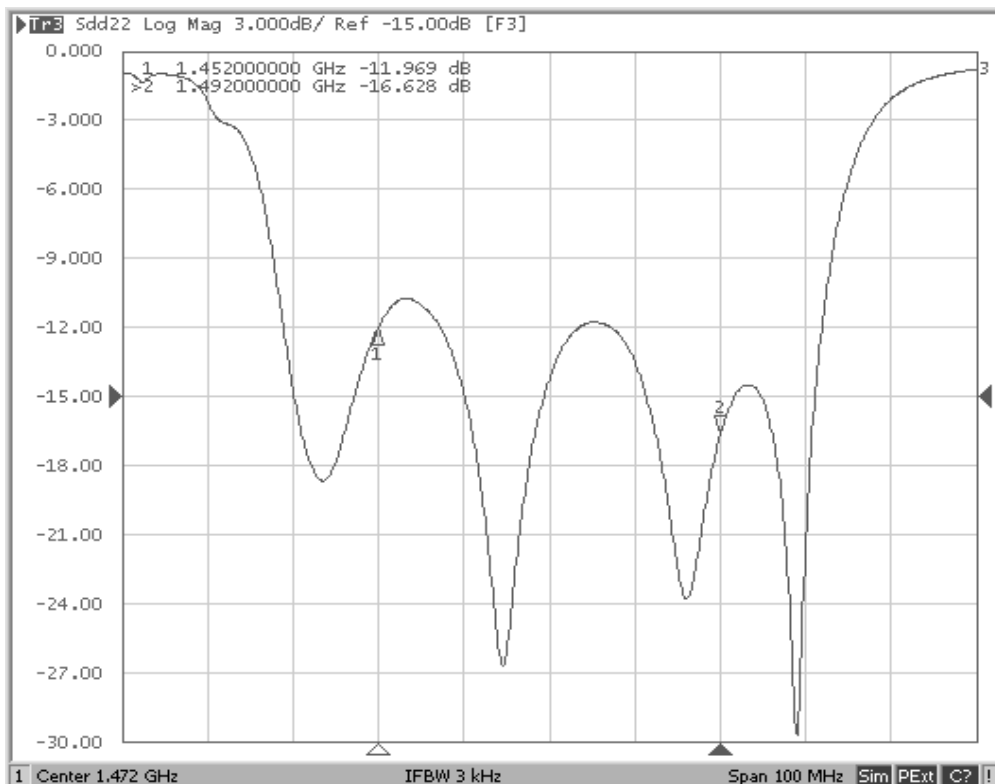
## Filter Broadband Plot



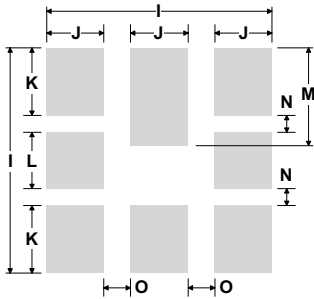
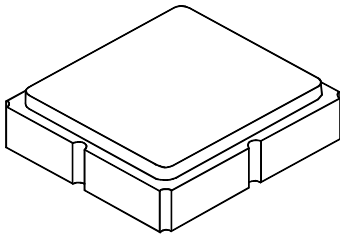
## Filter Input Return Loss



## Filter Output Return Loss



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



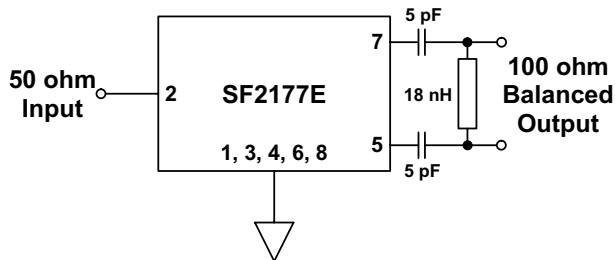
**PCB Footprint Top View**

### Case and PCB Footprint Dimensions

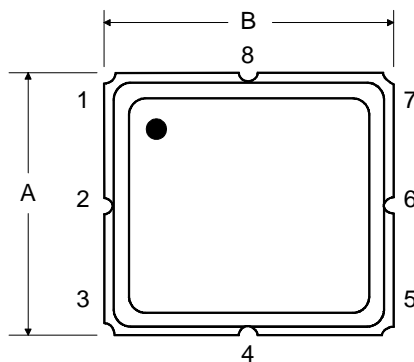
| Dimension | mm   |      |      | Inches |       |       |
|-----------|------|------|------|--------|-------|-------|
|           | Min  | Nom  | Max  | Min    | Nom   | Max   |
| A         | 2.87 | 3.00 | 3.13 | 0.113  | 0.118 | 0.123 |
| B         | 2.87 | 3.00 | 3.13 | 0.113  | 0.118 | 0.123 |
| 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

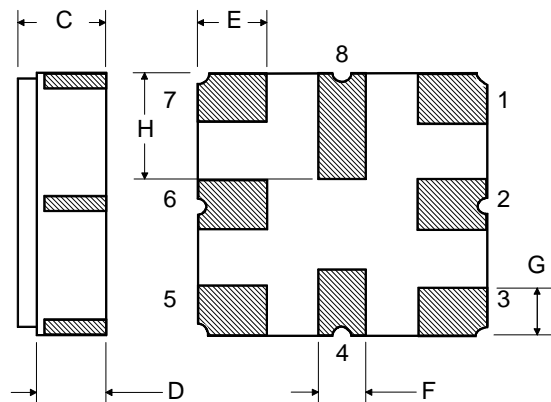
| Materials          |  |
|--------------------|--|
| Solder Pad Plating | 0.3 to 1.0 $\mu\text{m}$ Gold over 1.27 to 8.89 $\mu\text{m}$ Nickel |
| Lid Plating        | 2.0 to 3.0 $\mu\text{m}$ Nickel                                      |
| Body               | $\text{Al}_2\text{O}_3$ Ceramic      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



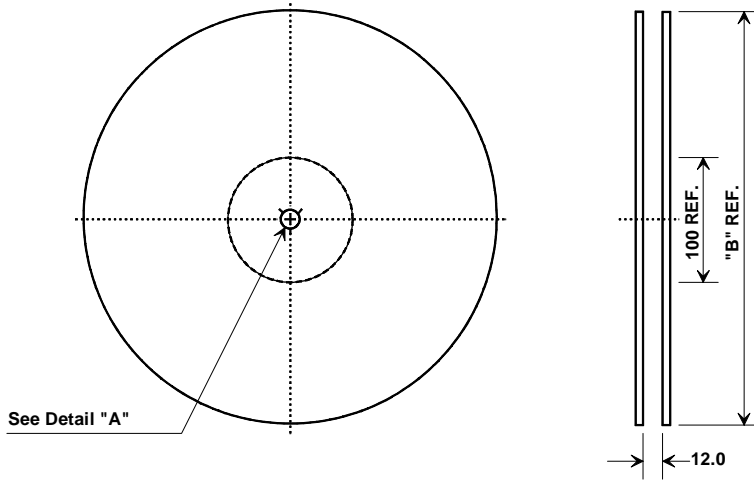
**TOP VIEW**



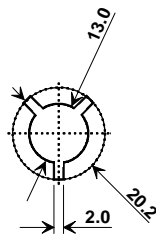
**BOTTOM VIEW**



# Tape and Reel Specifications



| "B" Nominal Size |             | 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

