# Preliminary

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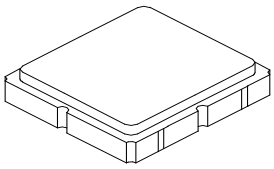
# SF2294E

## 922.5 MHz SAW Filter

- ***Low Loss RF SAW Filter***
- ***Surface Mount 3.0 x 3.0 mm Package***
- ***Complies with Directive 2002/95/EC (RoHS)***



**SM3030-6**

### Absolute Maximum Ratings

| Rating | Value | Units |
|---|---|---|
| Input Power Level | 10 | dBm |
| DC Voltage on any Non-ground Terminal | 5 | V |
| Operating Temperature Range | -20 to +75 | °C |
| Storage Temperature Range in Tape and Reel | -40 to +85 | °C |
| Suitable for Lead-free Soldering - Maximum Soldering Profile | 260°C for 30 s | |

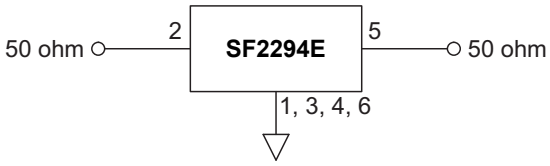
### Electrical Characteristics

| Characteristic | Sym | Notes | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|
| Center Frequency | $f_C$ | | | 922.5 | | MHz |
| Insertion Loss, 920.0 to 925.0 MHz | IL | | | 2.7 | 4.2 | dB |
| Amplitude Ripple, 920.0 to 925.0 MHz | | | | 0.4 | 2.0 | |
| Attenuation, Referenced to 0 dB: | | | | | | |
| 775 to 835 MHz | | | 40 | 45 | | dB |
| 835 to 895 MHz | | | 36 | 44 | | |
| 970 to 992 MHz | | | 36 | 44 | | |
| 992 to 1075 MHz | | | 38 | 45 | | |
| Source Impedance | $Z_S$ | | | 50 | | Ω |
| Load Impedance | $Z_L$ | | | 50 | | |

| | | |
|---|---|---|
| Case Style | | SM3030-6 3.0 x 3.0 mm Nominal Footprint |
| Lid Symbolization (Y=year, WW=week, S=shift) dot=pin 1 indicator | | A46, YWWS |
| Standard Reel Quantity | Reel Size 7 Inch | 500 Pieces/Reel |
| | Reel Size 13 Inch | 3000 Pieces/Reel |

### Electrical Connections

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

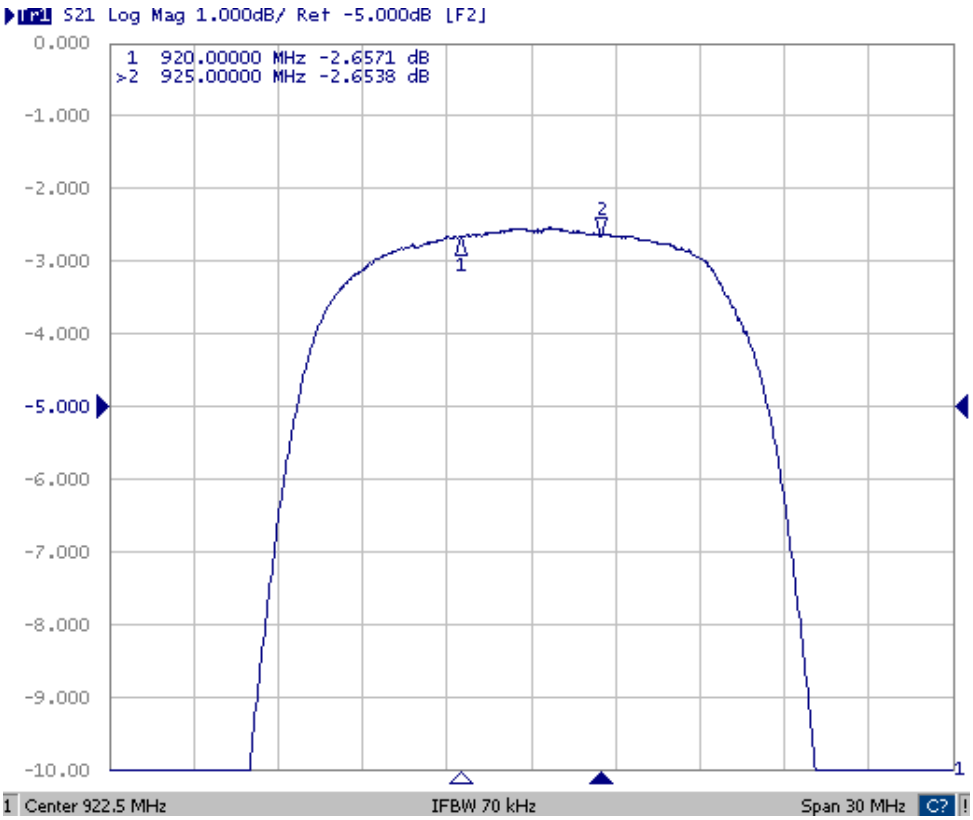


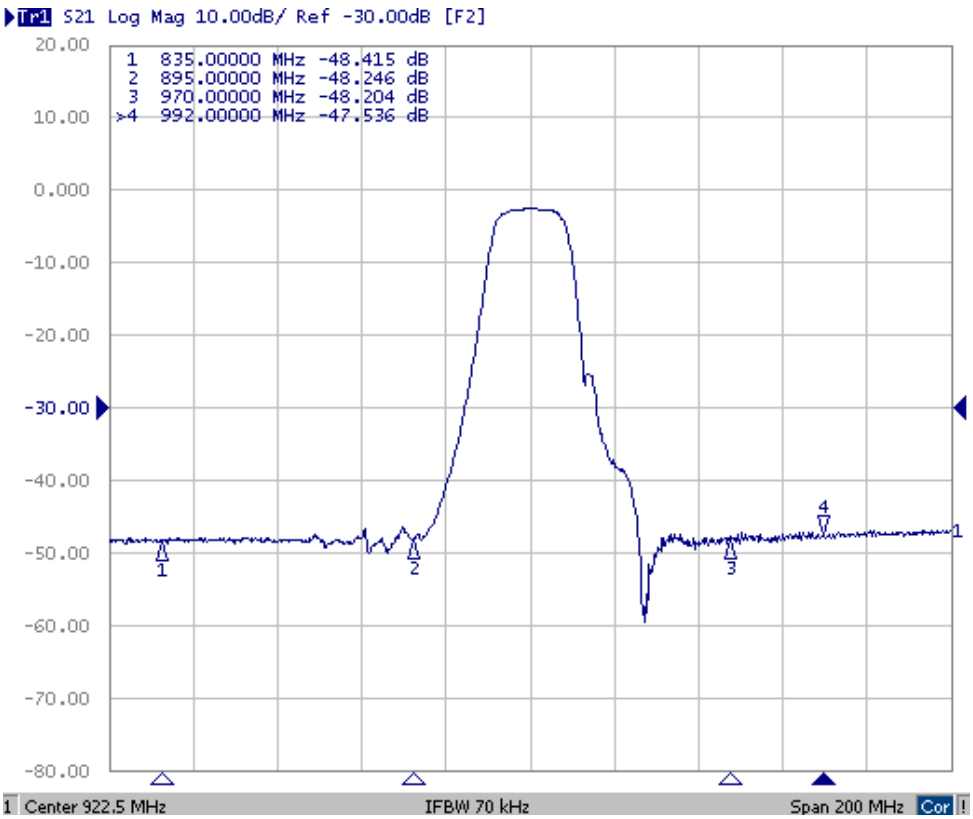

**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

**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 Ω and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency, fc.
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. Murata, stylized Murata logo, and Murata N.A., Inc. are registered trademarks of Murata Manufacturing Co., Ltd.

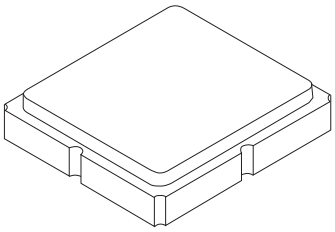
## Filter Response Plots

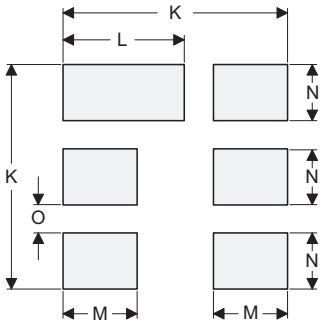


# SM3030-6 Case

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






**PCB Footprint Top View**

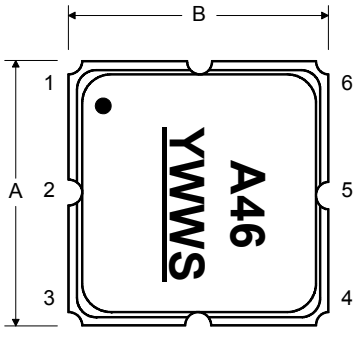
**Case and PCB Footprint Dimensions**

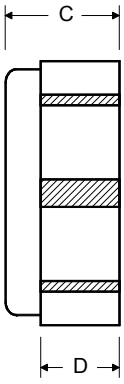
| Dimension | mm | | | Inches | | |
|---|---|---|---|---|---|---|
| | Min | Nom | Max | Min | Nom | Max |
| **A** | 2.87 | 3.00 | 3.13 | 0.113 | 0.118 | 0.123 |
| **B** | 2.87 | 3.00 | 3.13 | 0.113 | 0.118 | 0.123 |
| **C** | 1.12 | 1.25 | 1.38 | 0.044 | 0.049 | 0.054 |
| **D** | 0.77 | 0.90 | 1.03 | 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**

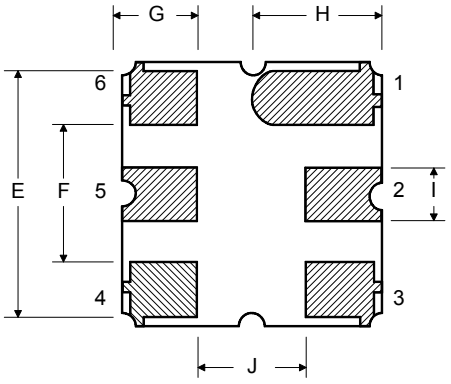
| Materials | |
|---|---|
| Solder Pad Plating | 0.3 to 1.0 µm Gold over 1.27 to 8.89 µm Nickel |
| Lid Plating | 2.0 to 3.0 µm Nickel |
| Body | $Al_2O_3$ Ceramic |
| Pb Free | |

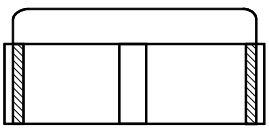
**TOP VIEW**



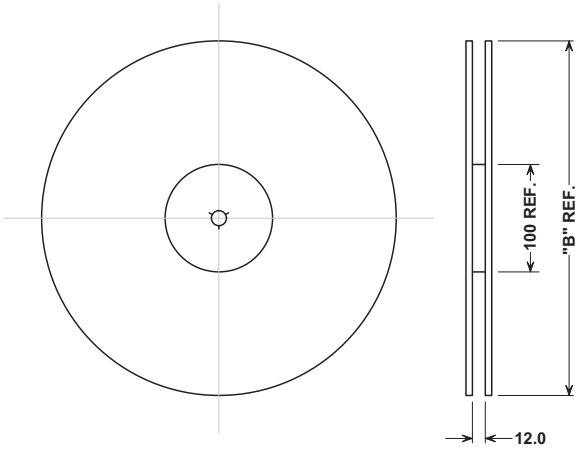




**BOTTOM VIEW**



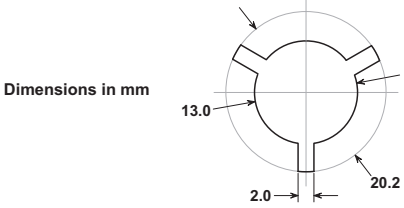



**Tape and Reel Specifications**




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

**Hub Detail**




**COMPONENT ORIENTATION and DIMENSIONS**

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