

- Surface Mount 3.0 x 3.0 mm Package
- Complies with Directive 2002/95/EC (RoHS)

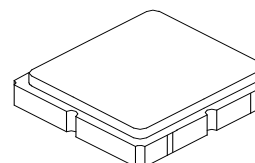


## Absolute Maximum Ratings

| 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    |
| Maximum Soldering Profile, 5 cycles/ 10 seconds maximum | 265        | °C    |

## SF2173E

## 2350 MHz SAW Filter



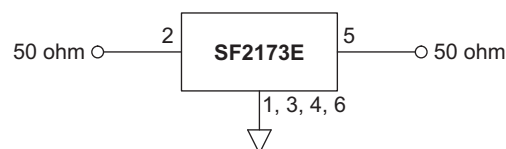
SM3030-6

## Electrical Characteristics

| Characteristic                                                   | Sym                                     | Notes            | Min | Typ  | Max | Units |
|------------------------------------------------------------------|-----------------------------------------|------------------|-----|------|-----|-------|
| Center Frequency                                                 | f <sub>C</sub>                          |                  |     | 2350 |     | MHz   |
| Insertion Loss, 2300 to 2400 MHz                                 | IL                                      |                  |     | 3.0  | 4.2 | dB    |
| Amplitude Ripple, 2300 to 2400 MHz                               |                                         |                  |     | 1.5  | 3.1 |       |
| Attenuation, Referenced to 0 dB:                                 |                                         |                  |     |      |     | dB    |
| DC to 2050 MHz                                                   |                                         |                  | 23  | 28   |     |       |
| 2050 to 2170 MHz                                                 |                                         |                  | 30  | 32   |     |       |
| 2170 to 2250 MHz                                                 |                                         |                  | 24  | 40   |     |       |
| 2450 to 2550 MHz                                                 |                                         |                  | 18  | 38   |     |       |
| 2550 to 4000 MHz                                                 |                                         |                  | 27  | 31   |     |       |
| Input/Output VSWR, 2300 to 2400 MHz                              |                                         |                  |     | 2.2  | 2.5 | Ω     |
| Source Impedance                                                 | Z <sub>S</sub>                          |                  |     | 50   |     |       |
| Load Impedance                                                   | Z <sub>L</sub>                          |                  |     | 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 | 862, 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 |

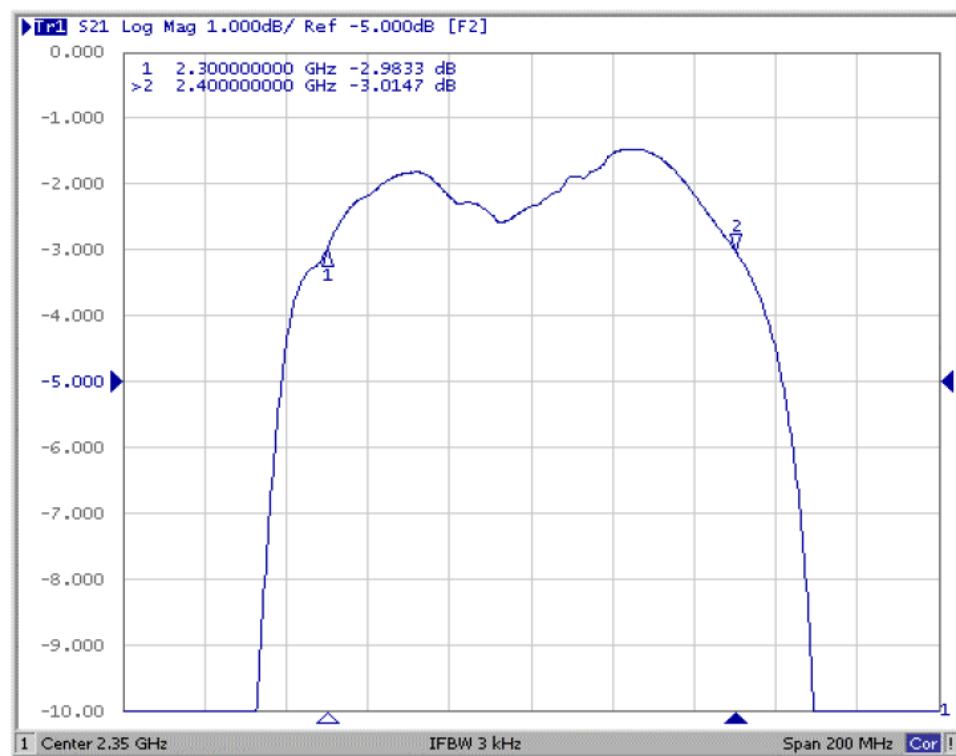
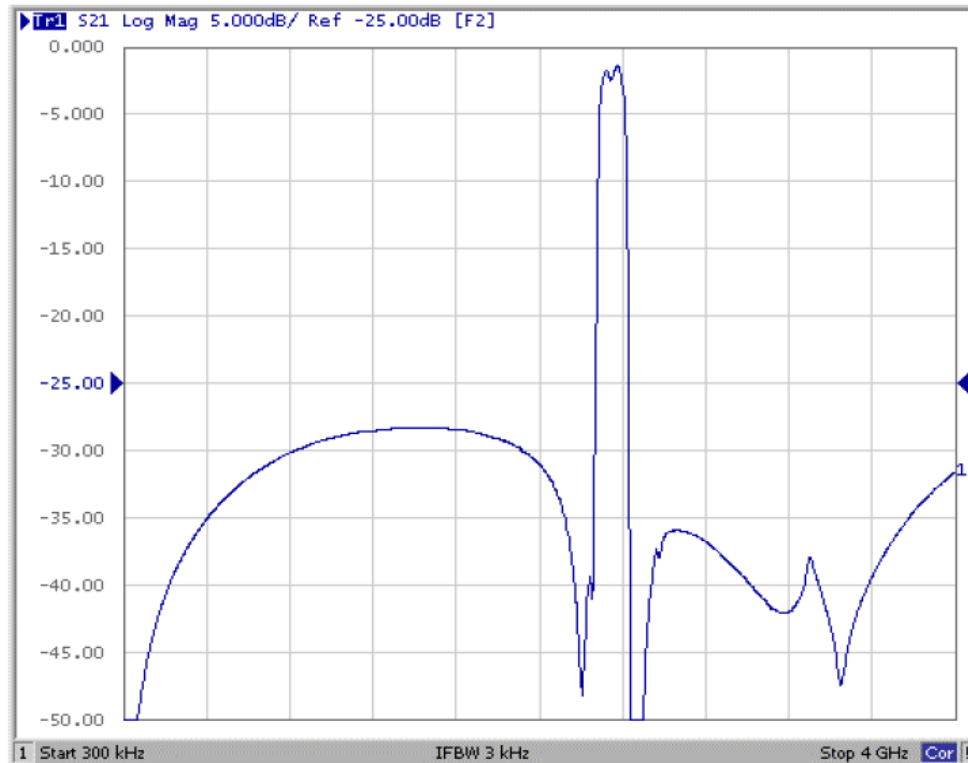


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

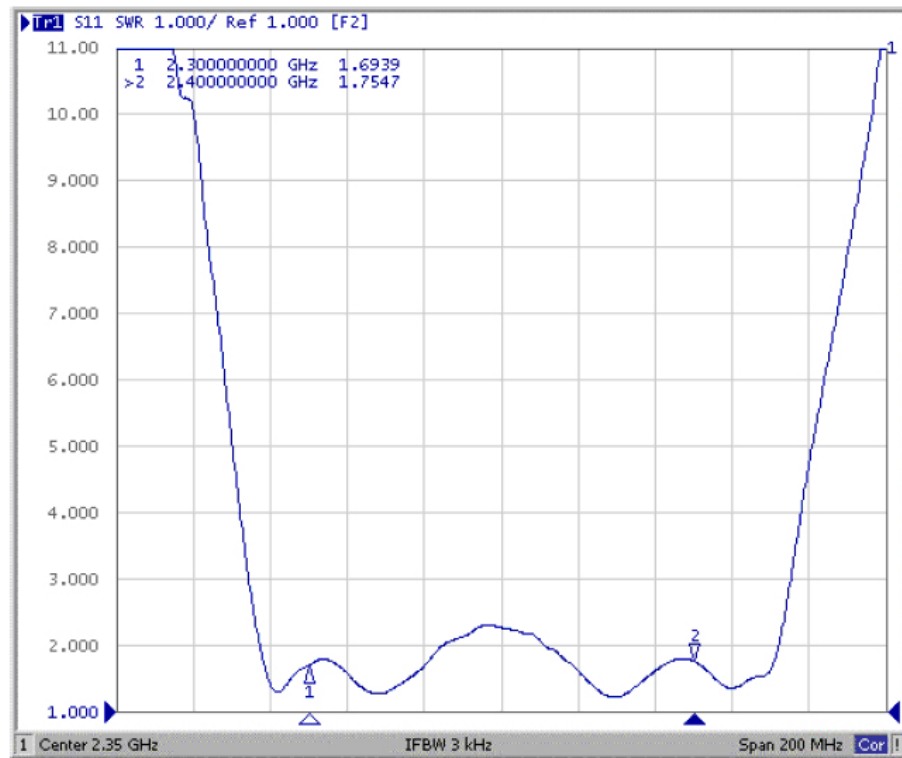
### NOTES:

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  $\Omega$  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. Murata, stylized Murata logo, and Murata N.A., Inc. are registered trademarks of Murata Manufacturing Co., Ltd.

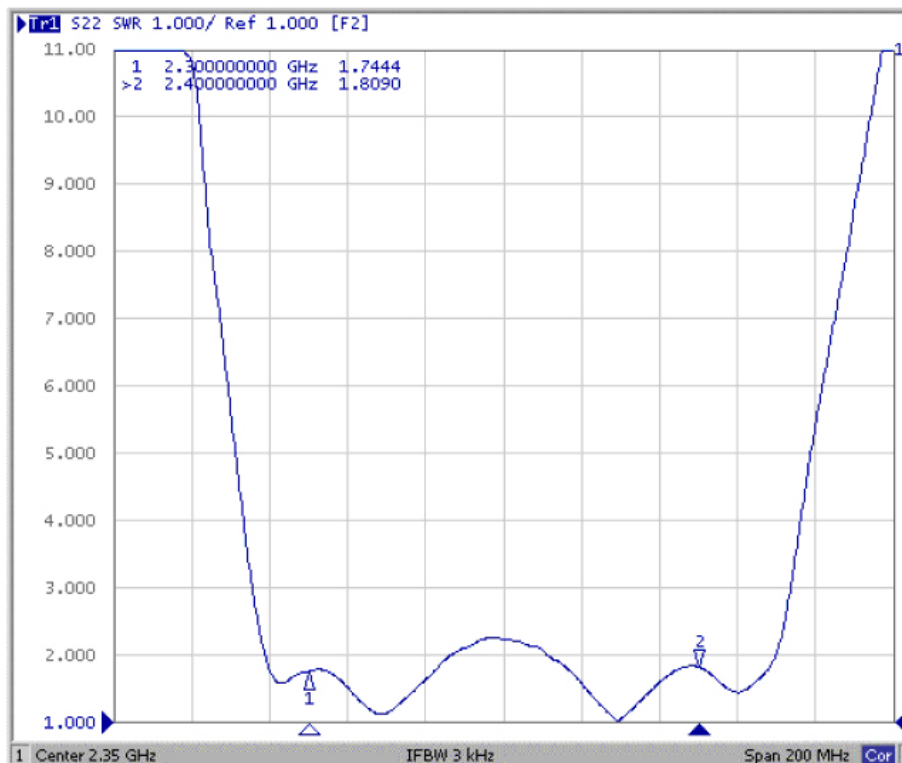
## SF2173E Frequency Response Plots



## SF2173E Input VSWR

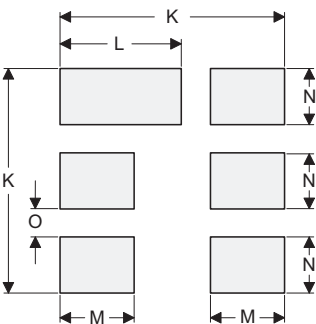
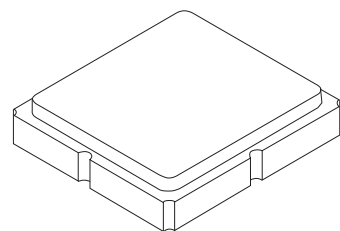


## SF2173E Output VSWR



# SM3030-6 Case

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



PCB Footprint Top View

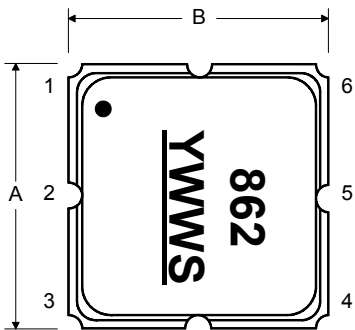
Case and PCB Footprint Dimensions

| 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 |       |

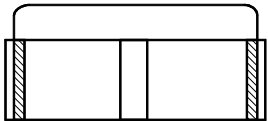
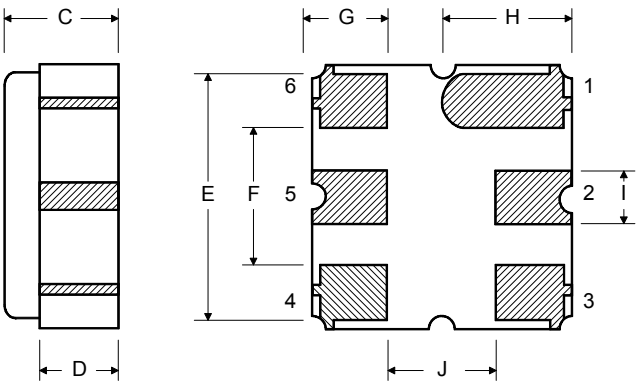
Case Materials

| 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



Technical drawing of a circular component, likely a flange or end plate, showing three views: a top view, a side view, and a detail view.

**Top View:** A large circle with a smaller concentric circle in the center. A crosshair indicates the center. A leader line points from the text "See Detail 'A'" to the central hole.

**Side View:** A vertical cross-section showing the thickness of the component. The total thickness is dimensioned as 12.0. The central hole has a diameter of 100 REF. The outer diameter is dimensioned as "B" REF.

**Detail View (Detail A):** A cross-section of the central hole. It shows a circular hole with a diameter of 20.2. The hole is surrounded by a flange with a thickness of 2.0. The outer diameter of the flange is dimensioned as 13.0.

| “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 |

