

- Surface-mount 3.0 x 3.0 x 1.3 mm Package
- Complies with Directive 2002/95/EC (RoHS)

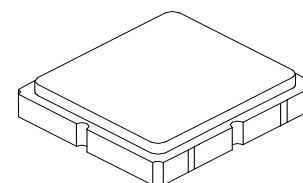


#### Absolute Maximum Ratings

| Rating                                                  | Value       | Units |
|---------------------------------------------------------|-------------|-------|
| Input Power Level                                       | 10          | dBm   |
| DC Voltage on any Non-ground Terminal                   | 3           | V     |
| Operable Temperature Range                              | -45 to +125 | °C    |
| Specification Temperature Range                         | -25 to +75  | °C    |
| Storage Temperature Range in Tape and Reel              | -40 to +85  | °C    |
| Solder Reflow Temperature, 10 seconds, 5 cycles maximum | 260         | °C    |

**SF2205E**

**879 MHz  
SAW Filter**



**SM3030-6**

#### Electrical Characteristics

| Characteristic                                                   | Sym                                     | Notes            | Min | Typ | Max | Units             |
|------------------------------------------------------------------|-----------------------------------------|------------------|-----|-----|-----|-------------------|
| Center Frequency                                                 | F <sub>C</sub>                          |                  |     | 879 |     | MHz               |
| Maximum Insertion Loss, 864 to 894 MHz                           | IL                                      |                  |     |     | 3.5 | dB                |
| Amplitude Ripple, 864 to 894 MHz                                 |                                         |                  |     |     | 2.0 | dB <sub>P-P</sub> |
| I/O Return Loss, 864 to 894 MHz                                  |                                         |                  | 10  |     |     | dB                |
| Attenuation Referenced to 0 dB:                                  |                                         |                  |     |     |     |                   |
| 10 to 840 MHz                                                    |                                         |                  | 40  |     |     | dB                |
| 920 to 1000 MHz                                                  |                                         |                  | 30  |     |     |                   |
| 1000 to 2600 MHz                                                 |                                         |                  | 25  |     |     |                   |
| Source Impedance                                                 | Z <sub>S</sub>                          |                  |     | 50  |     | Ω                 |
| 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 | 937, <u>YWW</u> S                       |                  |     |     |     |                   |
| Standard Reel Quantity                                           | Reel Size 7 Inch                        | 500 Pieces/Reel  |     |     |     |                   |
|                                                                  | Reel Size 13 Inch                       | 3000 Pieces/Reel |     |     |     |                   |

#### Electrical Connections

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

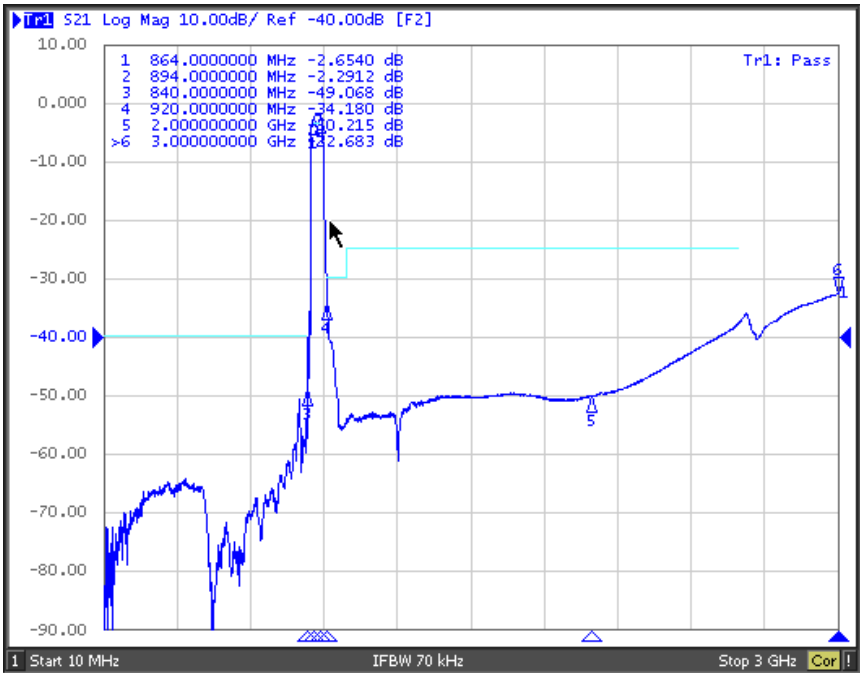


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

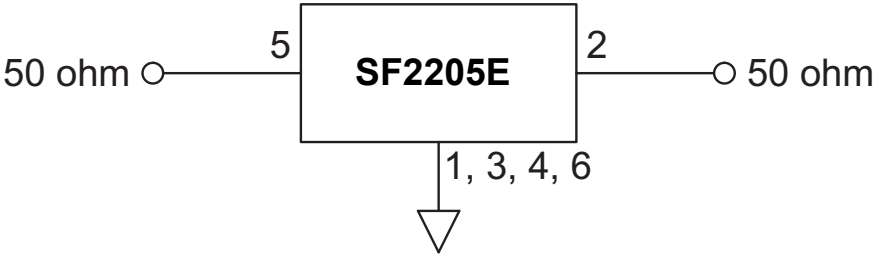
#### NOTES:

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.

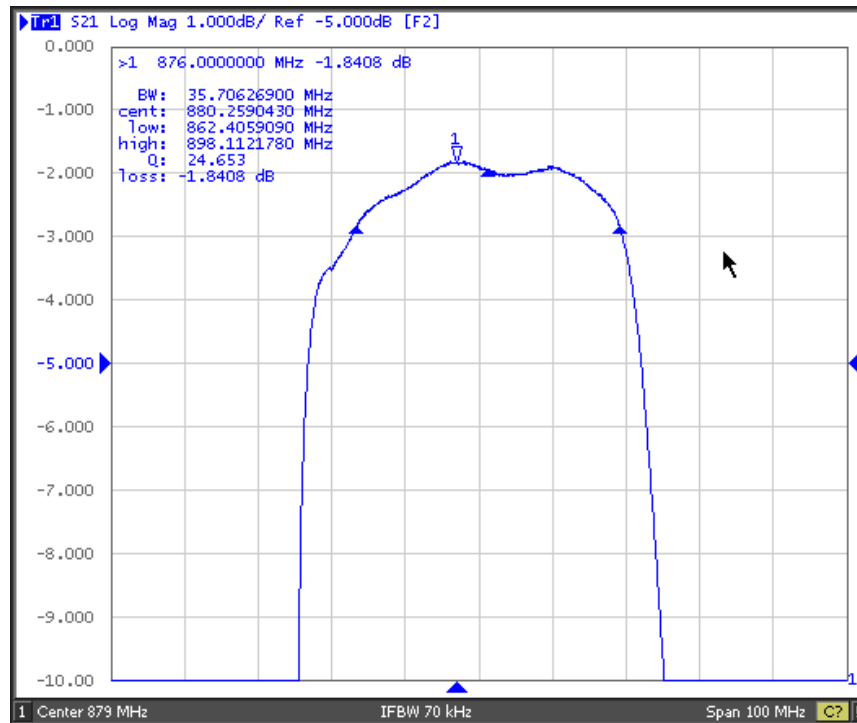
# Filter Broadband Response, 10 to 3000 MHz



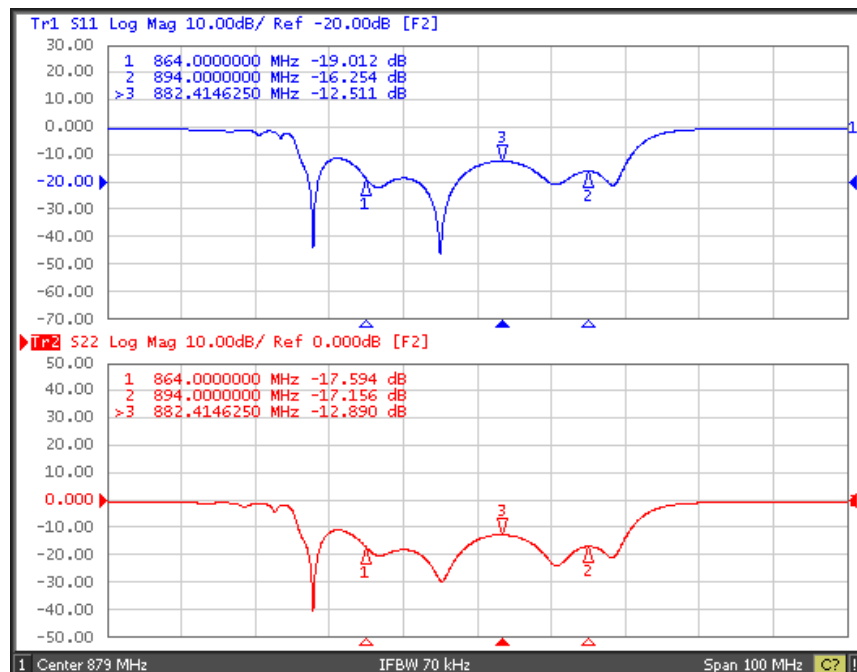
## Filter Test Circuit



## Filter Passband Plot, 829 to 929 MHz

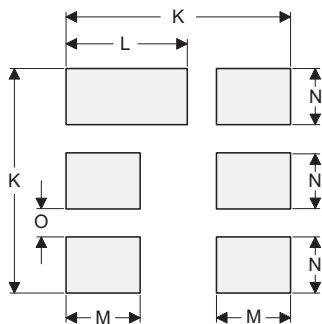
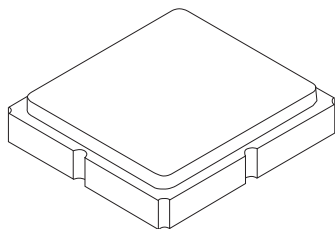


## Filter I/O Return Loss Plots, 829 to 929 MHz



# SM3030-6 Case

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



PCB Footprint Top View

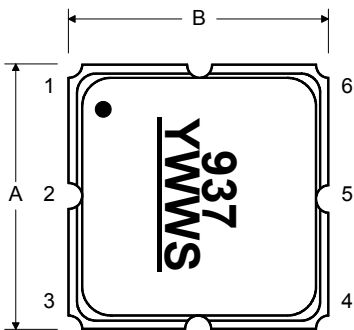
Case and PCB Footprint Dimensions

| 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 |       |

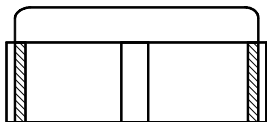
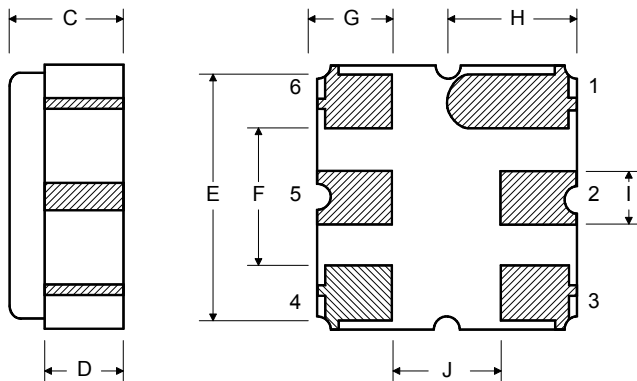
Case Materials

| 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 horizontal centerline and a vertical centerline intersect at the center. A small circle with a crosshair is located at the center of the inner circle. An arrow points from the text "See Detail 'A'" to this central feature.

**Side View:** A vertical cross-section showing the thickness of the component. The total thickness is dimensioned as 12.0. The inner 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 ring with a thickness of 2.0. The outer diameter of this ring 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 |

