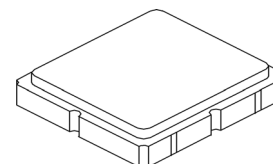


SF2201E

**916.45 MHz
SAW Filter**



SM3030-6

- **Low-loss SAW Filter**
- **Surface Mount 3.0 x 3.0 x 1.3 mm Package**

Absolute Maximum Ratings

| Rating | Value | Units |
|--|-------------|-------|
| Input Power Level | +17 | dBm |
| DC Voltage on any Non-ground Terminal | 5 | V |
| Operable Temperature Range | -45 to +125 | °C |
| Specification Temperature Range | -30 to +85 | °C |
| Storage Temperature Range in Tape and Reel | -40 to +85 | °C |
| Maximum Soldering Profile, 5 cycles/10 seconds maximum | 265 | °C |

Electrical Characteristics

| Characteristic | Sym | Notes | Min | Typ | Max | Units |
|--|---|------------------|-----|--------|-------|-------------------|
| Center Frequency | F _C | | | 916.45 | | MHz |
| Insertion Loss, 914.45 to 918.45 MHz | IL | | | 2.7 | 3.5 | dB |
| Amplitude Ripple, 914.45 to 918.45 MHz | | | | 0.3 | 1.0 | dB _{P-P} |
| VSWR, 914.45 to 918.45 MHz | | | | 1.5:1 | 2.0:1 | |
| Attenuation Referenced to 0 dB | | | | | | |
| DC to 600 MHz | | | 50 | 57 | | dB |
| 600 to 840 MHz | | | 40 | 51 | | |
| 869 to 894 MHz | | | 35 | 46 | | |
| 970 to 1500 MHz | | | 40 | 47 | | |
| 1500 to 3000 MHz | | | 25 | 32 | | |
| 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 | 931, 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 |
| Ground | All Others |



CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

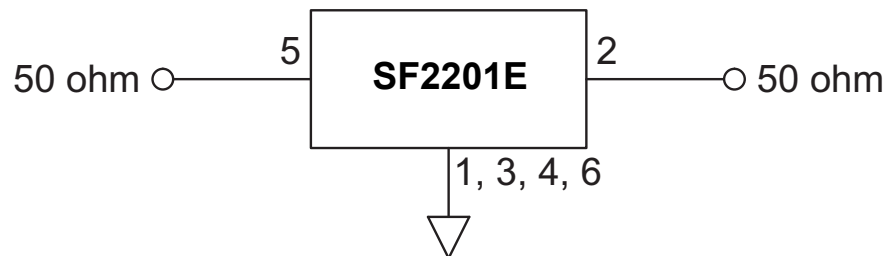
NOTES:

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, 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.

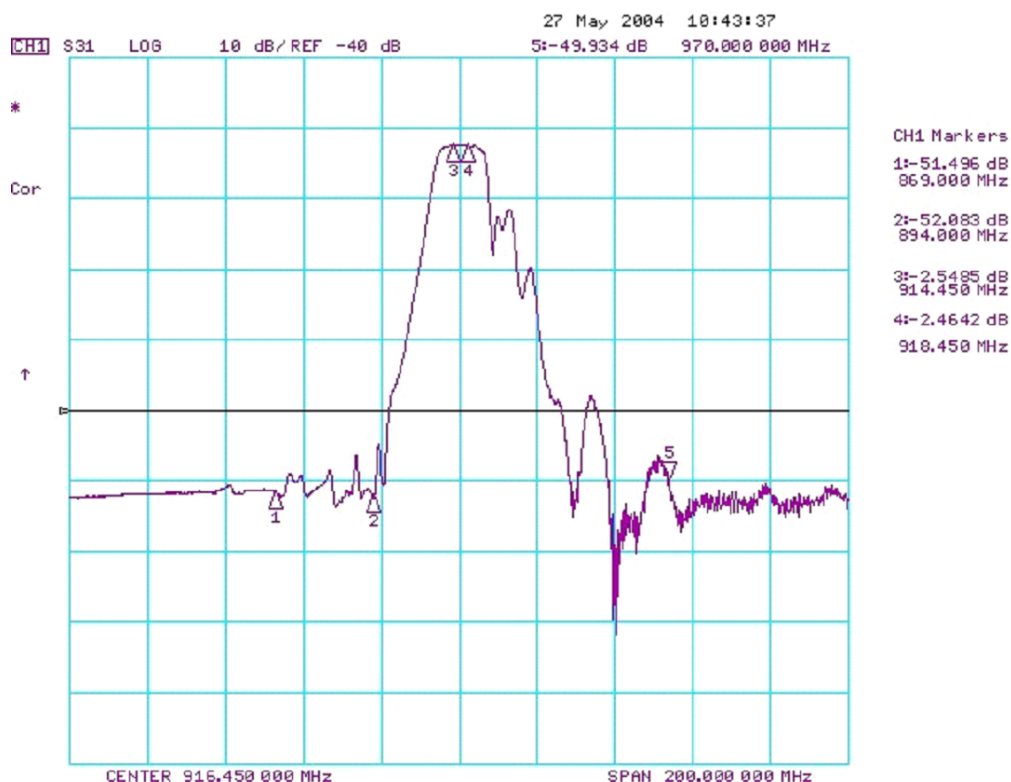
Filter Passband Response



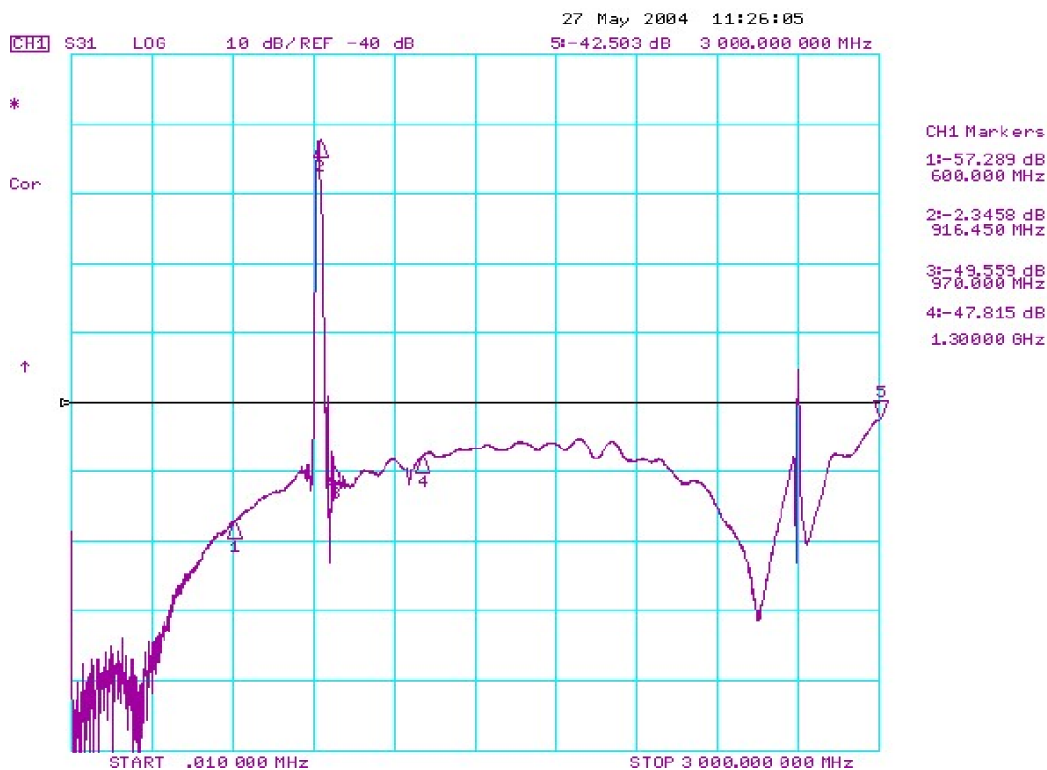
Filter Test Circuit



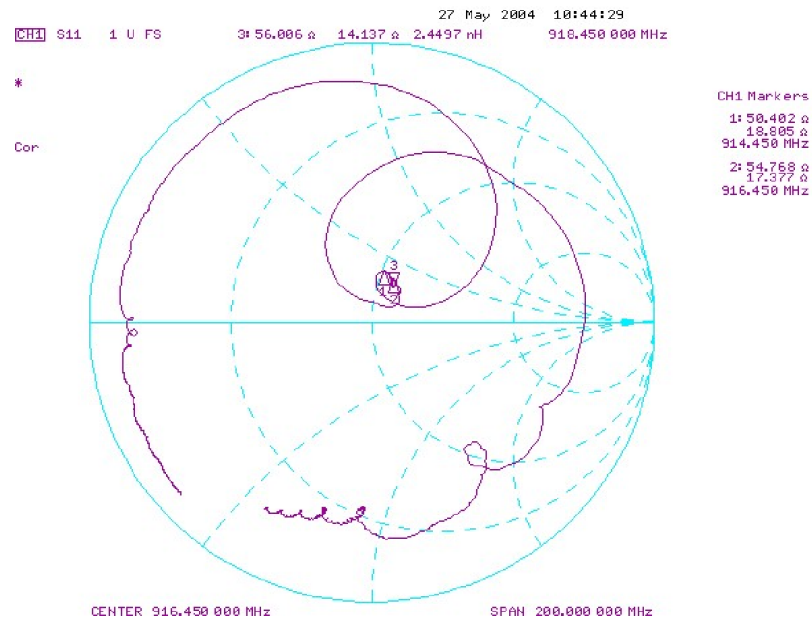
Filter Response, 816.45 to 1016.45 MHz



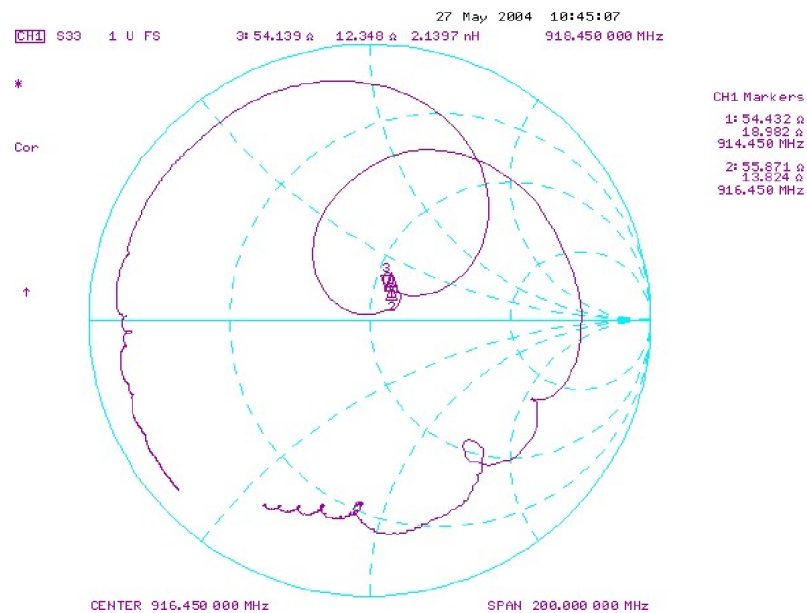
Filter Broadband Response, 0.01 to 3000 MHz



Filter S_{11} Plot

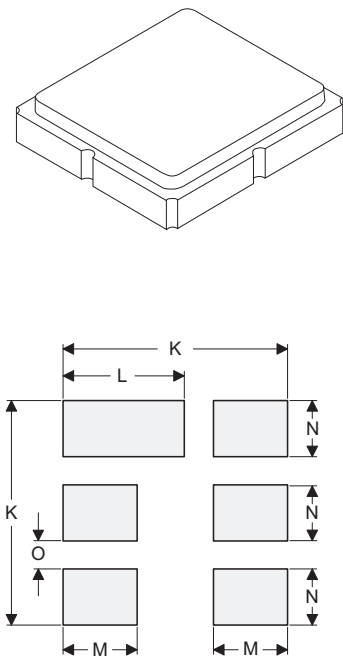


Filter S_{22} Plot



SM3030-6 Case

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



PCB Footprint Top View

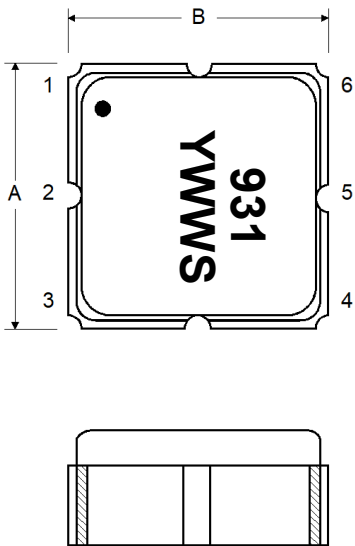
Case and PCB Footprint Dimensions

| 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 | |

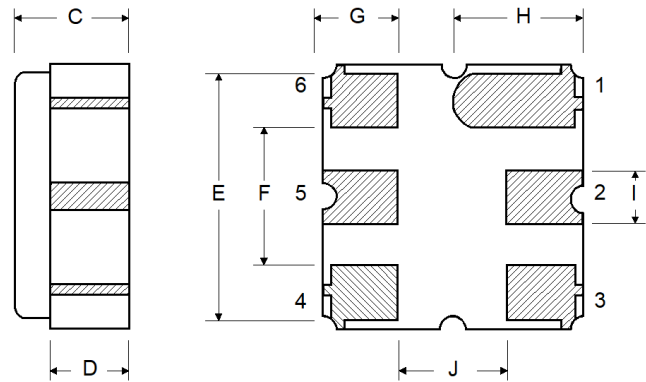
Case Materials

| Materials | |
|--------------------|--|
| Solder Pad Plating | 0.3 to 1.0 μ m Gold over 1.27 to 8.89 μ m Nickel |
| Lid Plating | 2.0 to 3.0 μ m Nickel |
| Body | Al ₂ O ₃ Ceramic |
| Pb Free | |

TOP VIEW



BOTTOM VIEW



See Detail "A"

100 REF.

"B" REF.

12.0

13.0

20.2

2.0

| “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 |

