

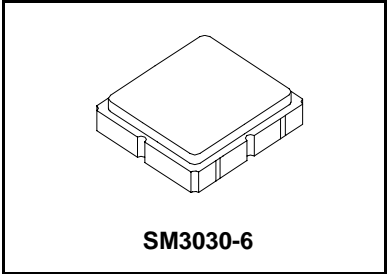


- Low-loss 422 MHz SAW Filter
- No Matching Required for Operation in 50Ω Environment
- Complies with Directive 2002/95/EC (RoHS)



SF2247E

**422 MHz
SAW Filter**



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 |

Electrical Characteristics

| Characteristic | Sym | Notes | Min | Typ | Max | Units |
|----------------------------------|-------|-------|-----|-------|-------|-------------------|
| Center Frequency | f_c | | | 422 | | MHz |
| Insertion Loss, 420 to 424 MHz | IL | | | 1.9 | 3.0 | dB |
| Amplitude Ripple, 420 to 424 MHz | | | | 0.3 | 1.6 | dB _{P-P} |
| VSWR, 420 to 424 MHz | | | | 1.5:1 | 2.4:1 | |
| Attenuation Referenced to 0 dB: | | | | | | |
| 10 to 300 MHz | | | 60 | 72 | | dB |
| 300 to 380 MHz | | | 55 | 71 | | |
| 380 to 405 MHz | | | 45 | 57 | | |
| 414 MHz | | | 15 | 72 | | |
| 440 to 450 MHz | | | 30 | 37 | | |
| 450 to 700 MHz | | | 50 | 56 | | |
| 700 to 1000 MHz | | | 43 | 56 | | |
| Source Impedance | Z_s | | | 50 | | Ω |
| Load Impedance | Z_L | | | 50 | | Ω |

| | | | | | | |
|--|---|--|--|--|--|------------------|
| Case Style | SM3030-6 3.0 x 3.0 mm Nominal Footprint | | | | | |
| Lid Symbolization, Y=year, WW=week, S=shift, Dot=pin 1 indicator | 985, 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 |

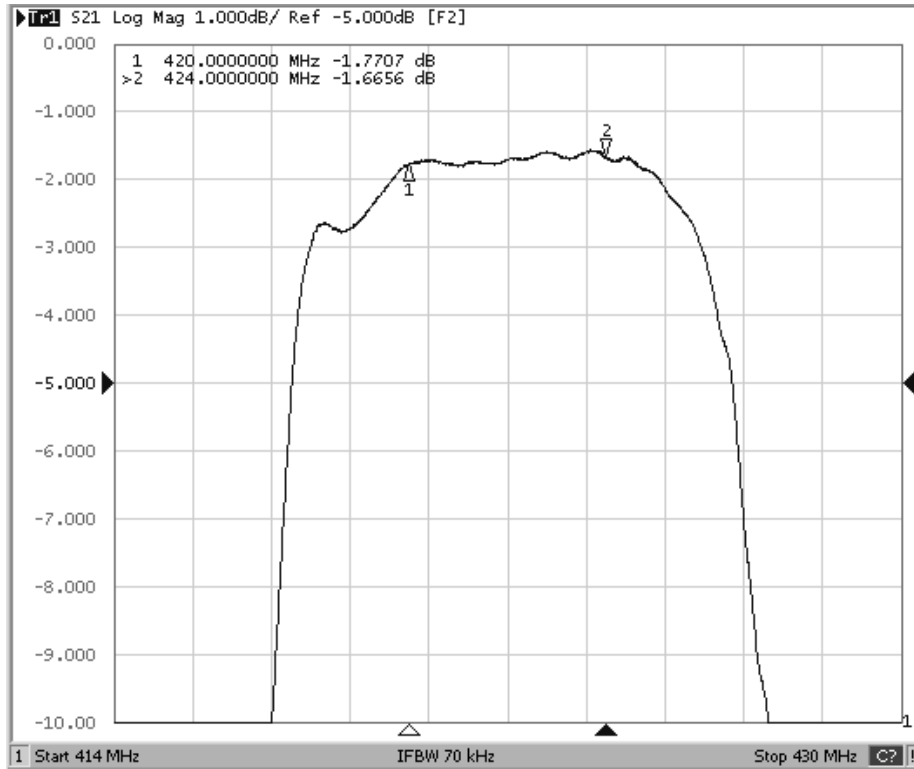


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

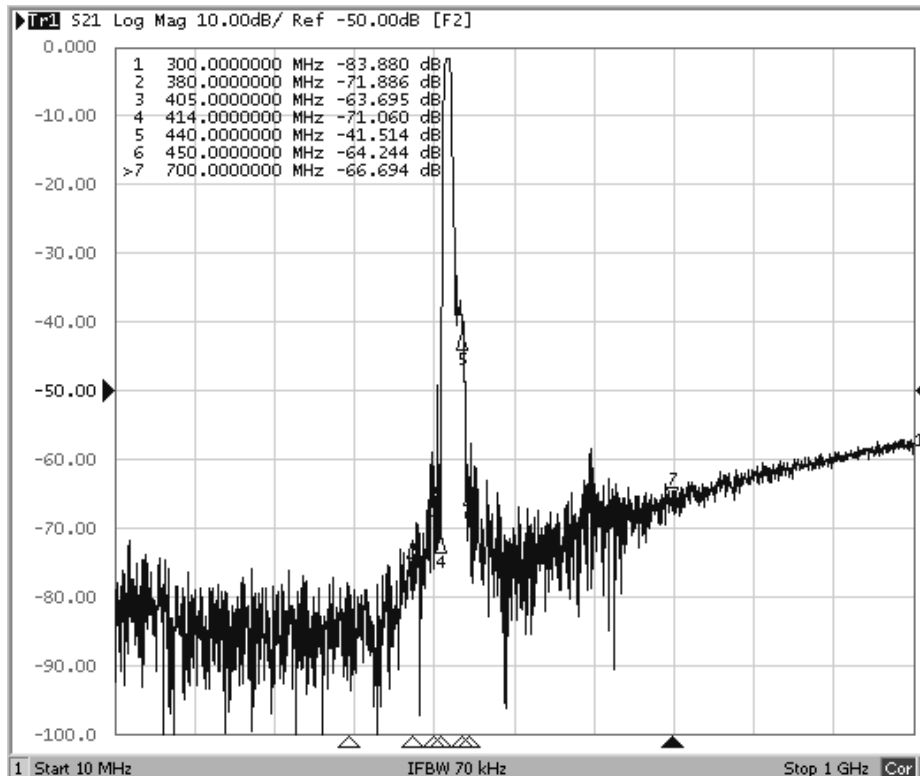
Notes:

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, 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. The design, manufacturing process, and specifications of this filter are subject to change.
5. US and international patents may apply.
6. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.

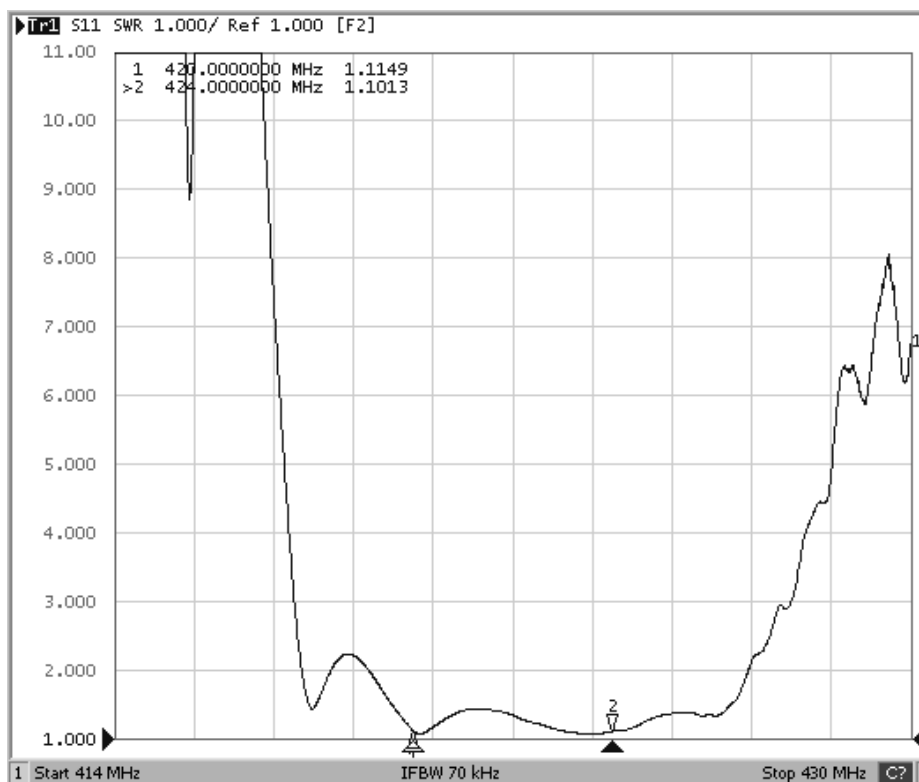
Passband Amplitude Response



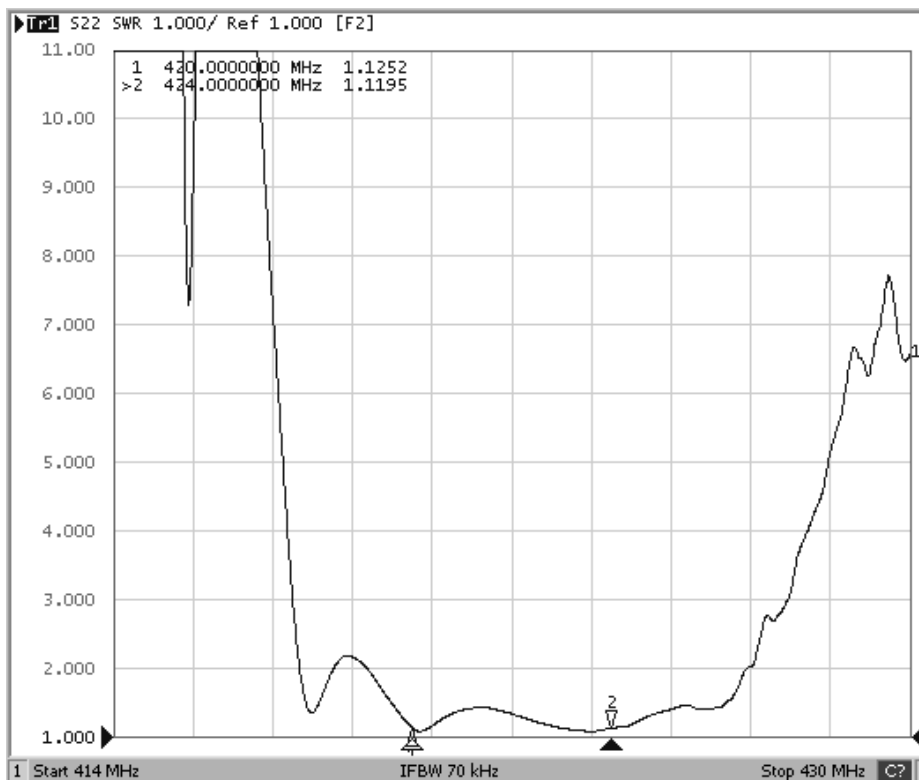
Broadband Amplitude Response



Input VSWR Plot

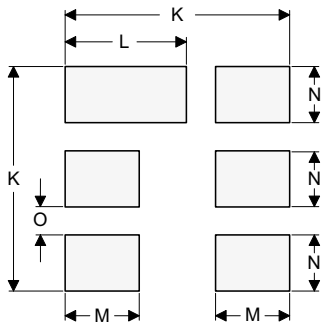
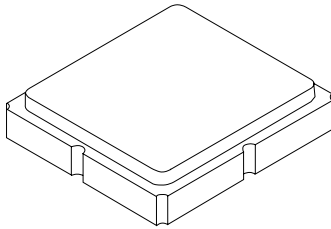


Output VSWR Plot



SM3030-6 Case

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



PCB Footprint Top View

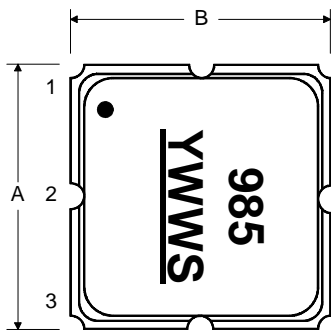
Case and PCB Footprint Dimensions

| 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 | 1.30 | 0.044 | 0.049 | 0.051 |
| 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 | |

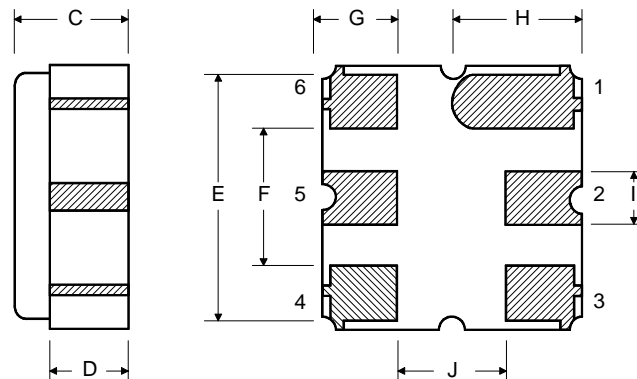
Case Materials

| 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 | |

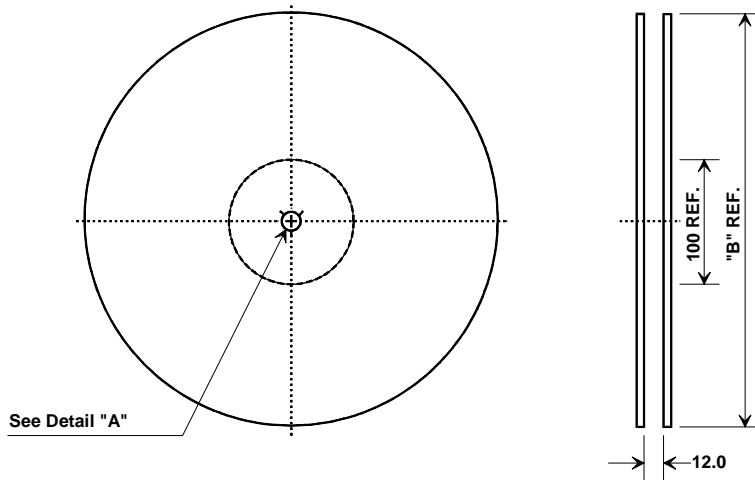
Top View



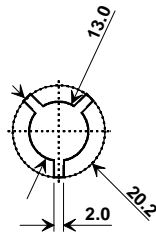
Bottom View



Tape and Reel Specifications



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



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 |

