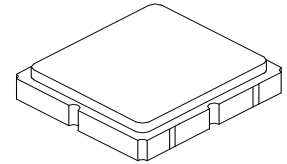


SF2293E

**1561 MHz
SAW Filter**



SM3030-6

- **Low Loss RF SAW Filter**
- **Surface Mount 3.0 x 3.0 mm Package**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Moisture Sensitivity Level: 1**

Absolute Maximum Ratings

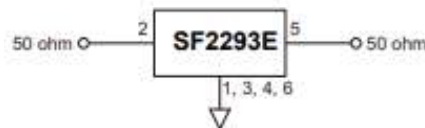
| Rating | Value | Units |
|--|-----------------|-------|
| Input Power Level | 10 | dBm |
| DC Voltage on any Non-ground Terminal | 3 | V |
| Operable Temperature Range | -45 to +125 | °C |
| Specification Temperature Range | -40 to +85 | °C |
| Storage Temperature Range | -40 to +95 | °C |
| Suitable 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 | | | 1561 | | MHz |
| Insertion Loss, 1550.5 to 1571.5 MHz | IL | | | 3.3 | 4.0 | dB |
| Amplitude Ripple, 1550.5 to 1571.5 MHz | | | | 0.5 | 2.0 | |
| Input/Output VSWR, 1550.5 to 1571.5 MHz | | | | 1.5:1 | 2:1 | |
| Attenuation, Referenced to 0 dB: | | | | | | dB |
| $f_C - 500$ to $f_C - 100$ MHz | | | 45 | 49 | | |
| $f_C - 100$ to $f_C - 60$ MHz | | | 40 | 45 | | |
| $f_C - 60$ to $f_C - 40$ MHz, -40 to +70 °C | | | 20 | 32.5 | | |
| $f_C - 60$ to $f_C - 40$ MHz, -40 to +85 °C | | | 15 | 32.5 | | |
| $f_C + 40$ to $f_C + 60$ MHz | | | 20 | 26 | | |
| $f_C + 60$ to $f_C + 80$ MHz | | | 35 | 43 | | |
| $f_C + 80$ to $f_C + 500$ MHz | | | 45 | 50 | | |
| 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 | A45, YWWS | | | | | |
| Standard Reel Quantity | Reel Size 7 Inch | | | | | 500 Pieces/Reel |
| | Reel Size 13 Inch | | | | | 3000 Pieces/Reel |

Electrical Connections

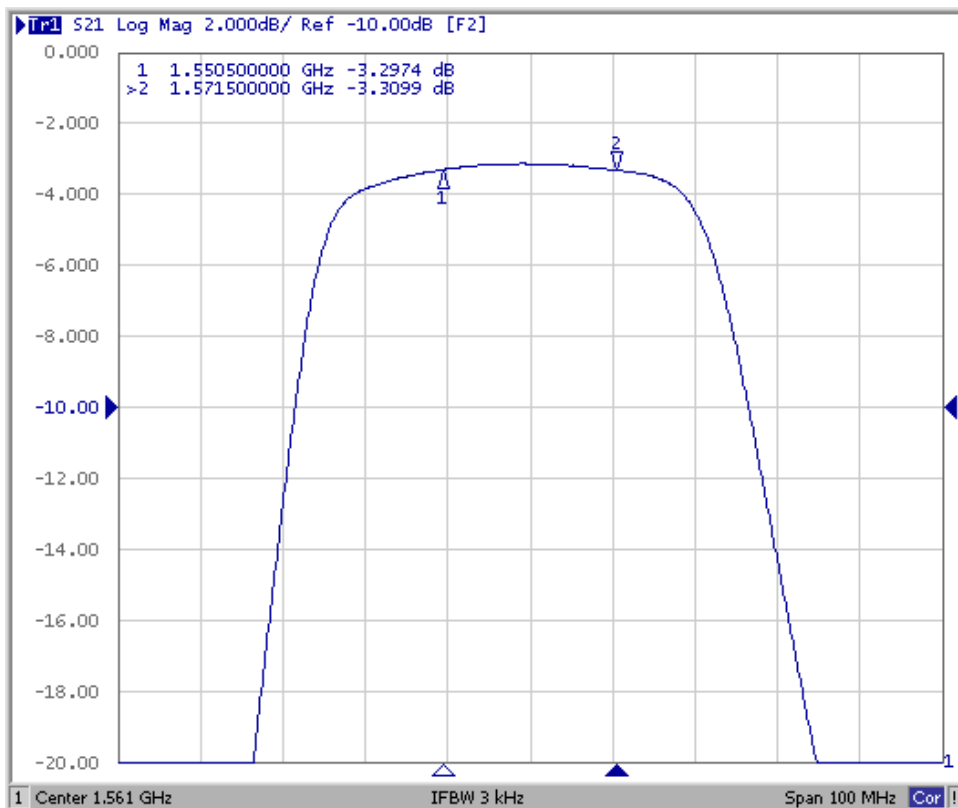
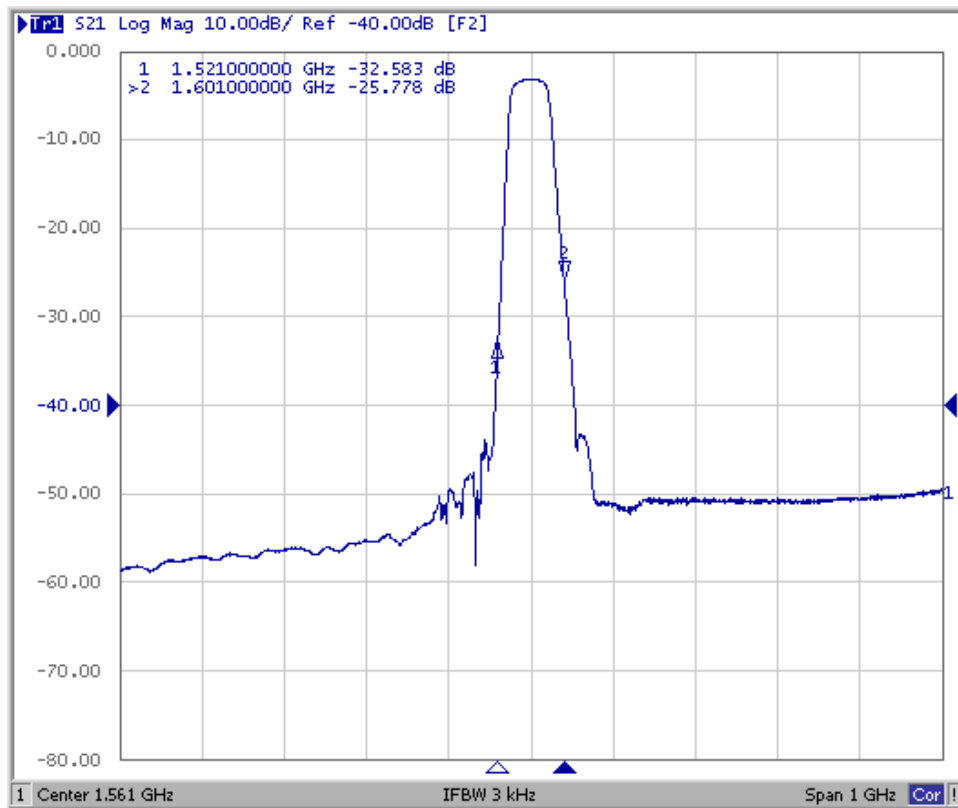
| Connection | Terminals |
|-------------|------------|
| Input | 2 |
| Output | 5 |
| Case Ground | All others |



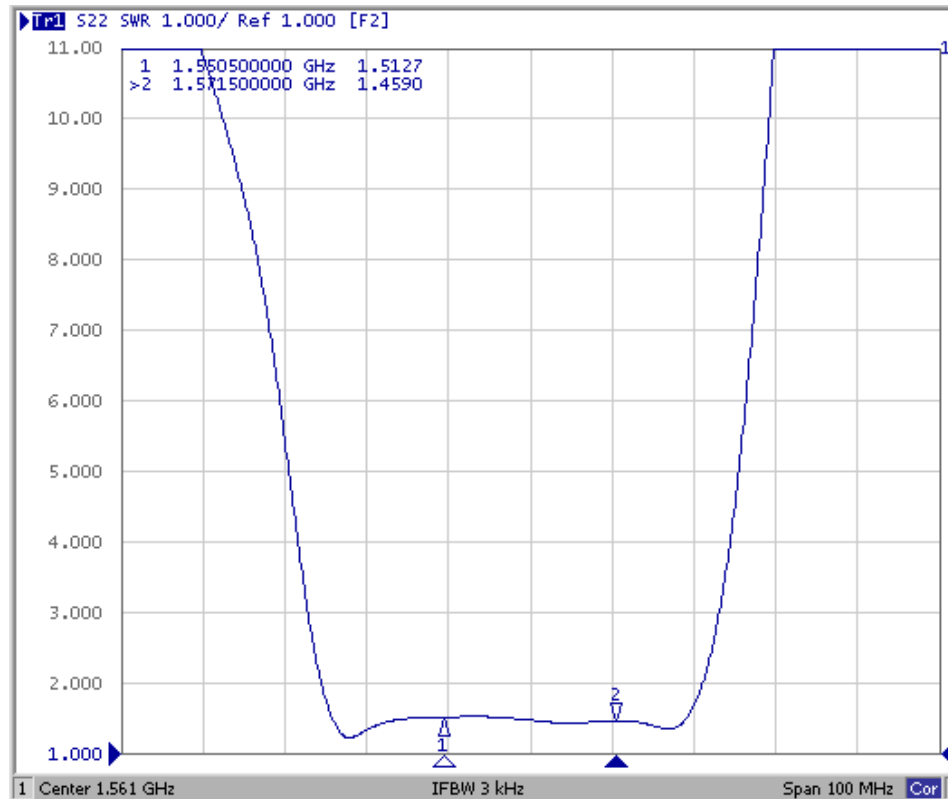
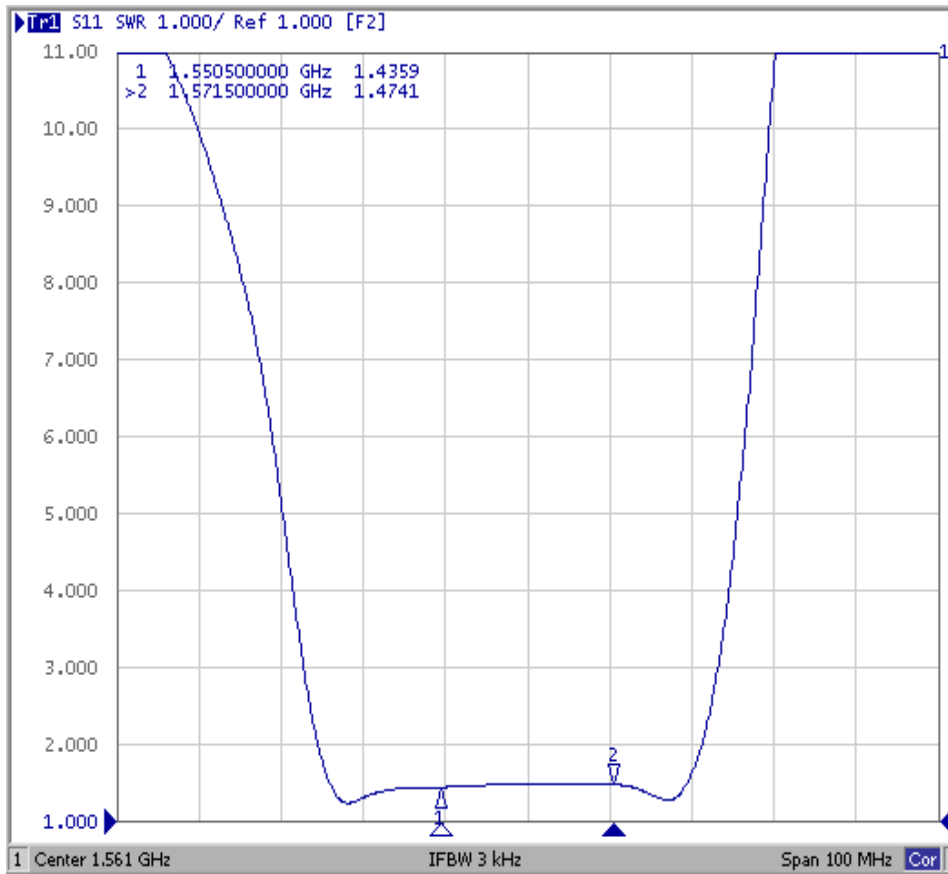
 **CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**
NOTES:

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

Filter Response Plots

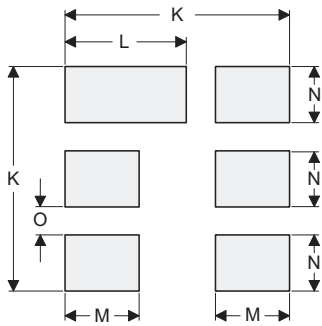
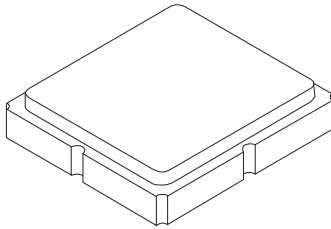


Filter VSWR Plots



SM3030-6 Case

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



PCB Footprint Top View

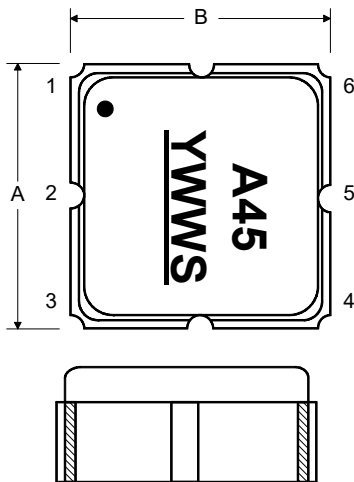
Case and PCB Footprint Dimensions

| 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 | |

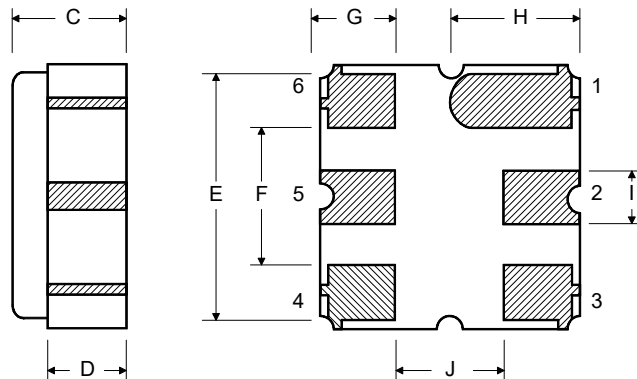
Case Materials

| 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 |

TOP VIEW

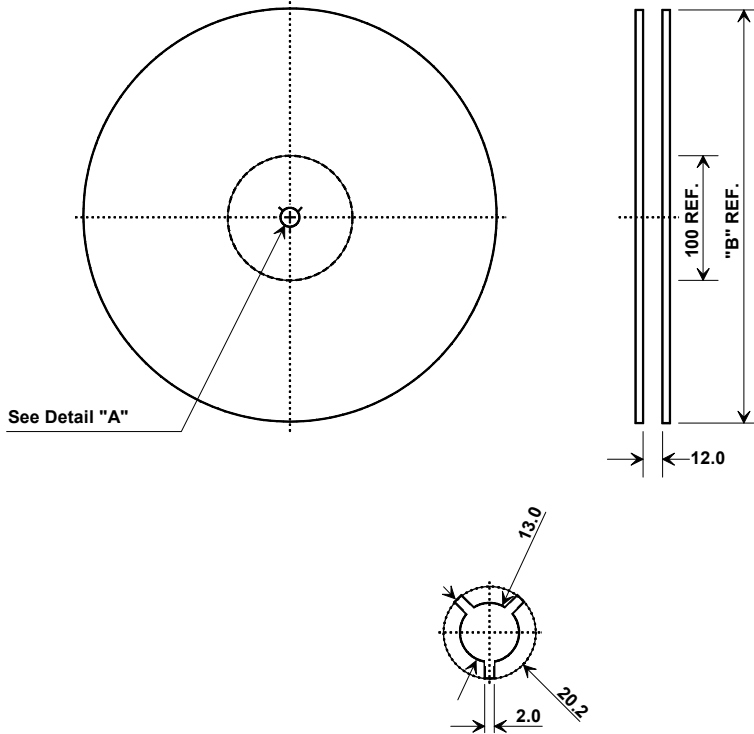


BOTTOM VIEW



Tape and Reel Specifications

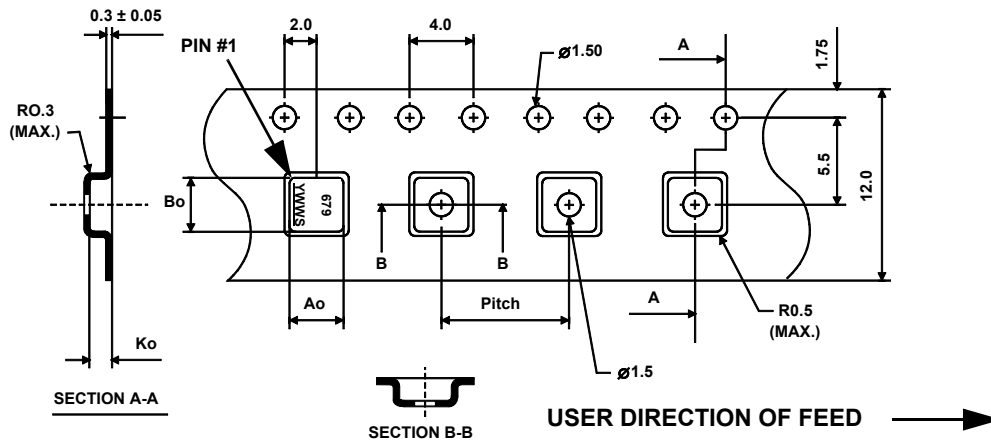
Tape and Reel Standard per ANSI/EIA-481



| "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 |



Recommended Reflow Profile

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 260°C +0/-5°C peak (10 seconds).
4. Time: 5 times maximum.

