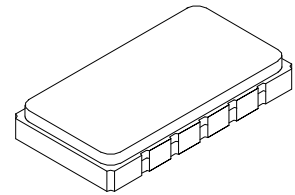


SF2243A

**233 MHz
SAW Filter**



SMP-53-S

- **Low Insertion Loss**
- **Excellent Size-to-performance Ratio**
- **Hermetic 13.3 x 6.5 mm Surface-mount Case**
- **Single-ended Input and Output**
- **Complies with Directive 2002/95/EC (RoHS)**



Absolute Maximum Ratings

| Rating | Value | Units |
|--|-----------------|-------|
| Maximum Incident Power in Passband | +18 | dBm |
| Maximum DC Voltage on any Non-ground Terminal | 10 | VDC |
| Storage Temperature Range in Tape and Reel | -40 to +85 | °C |
| Suitable for Lead-free Soldering - Maximum Soldering Profile | 260 °C for 30 s | |

Electrical Specifications

| Characteristic | Sym | Notes | Min | Typ | Max | Units |
|--------------------------------------|------------|---------|--------------------|------|-------------------|--------|
| Center Frequency | f_C | 1 | 233.0 | | | MHz |
| Maximum Insertion Loss | IL_{MAX} | | 11.0 | 12.0 | dB | |
| Passband Ripple, 231.0 to 235.0 MHz | | | 0.6 | 1.0 | dB _{P-P} | |
| 1 dB Bandwidth | BW_1 | 1, 2 | 4.0 | 5.3 | - | MHz |
| 3 dB Bandwidth | BW_3 | | - | 6.0 | - | MHz |
| 45 dB Bandwidth | BW_{45} | | - | 8.3 | 10.0 | MHz |
| Rejection Referenced to IL_{MIN} : | | 1, 2, 3 | | | | dB |
| 1 to 210 MHz | | | 45 | 50 | | |
| 246 to 400 MHz | | | 45 | 50 | | |
| Operating Temperature Range | T_A | 1 | -20 | | +70 | °C |
| Frequency Temperature Coefficient | | | | -23 | | ppm/°C |
| Wafer Material | | | LiTaO ₃ | | | |

| | |
|---|--|
| Impedance Matching to 50 Ω Single-ended Source and Load | External L-C |
| Case Style | SMP-53-S 13.3 x 6.5 mm Nominal Footprint |
| Lid Symbolization (YY = year, WW = week) | SF2243A, YYWW |

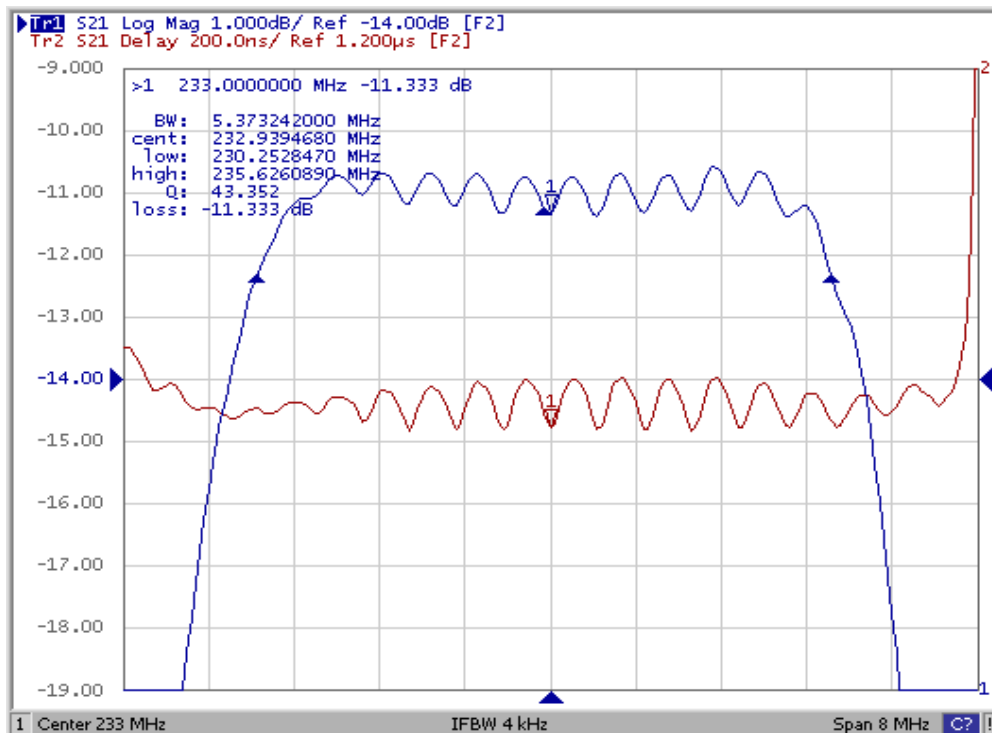
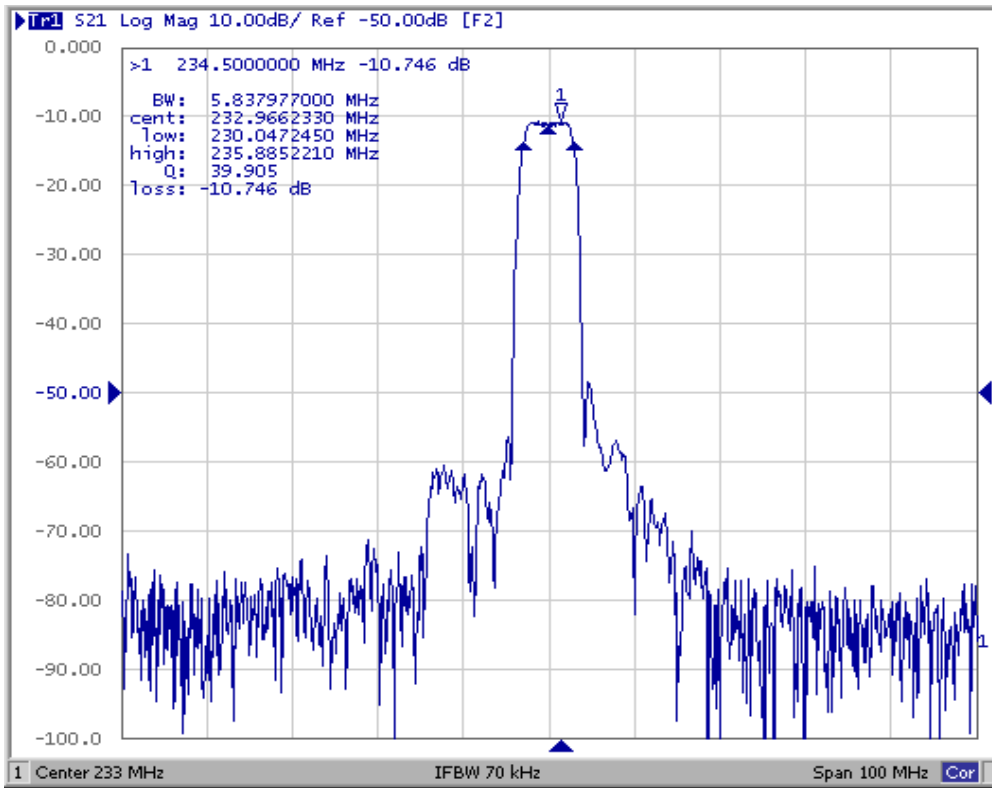


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

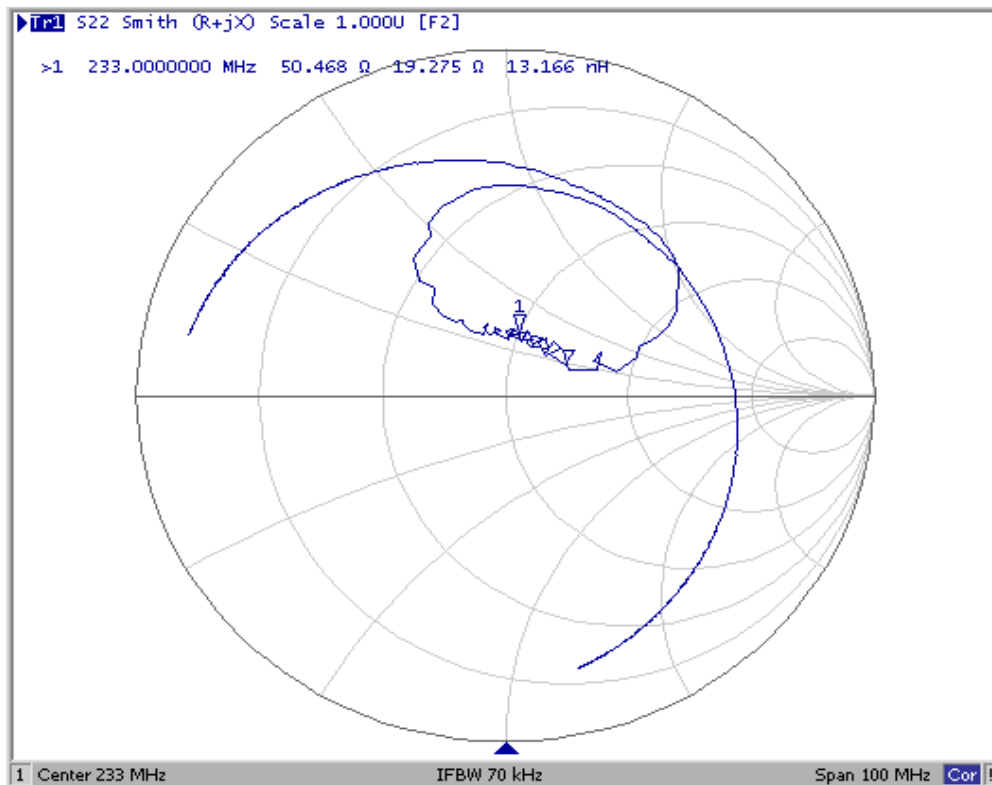
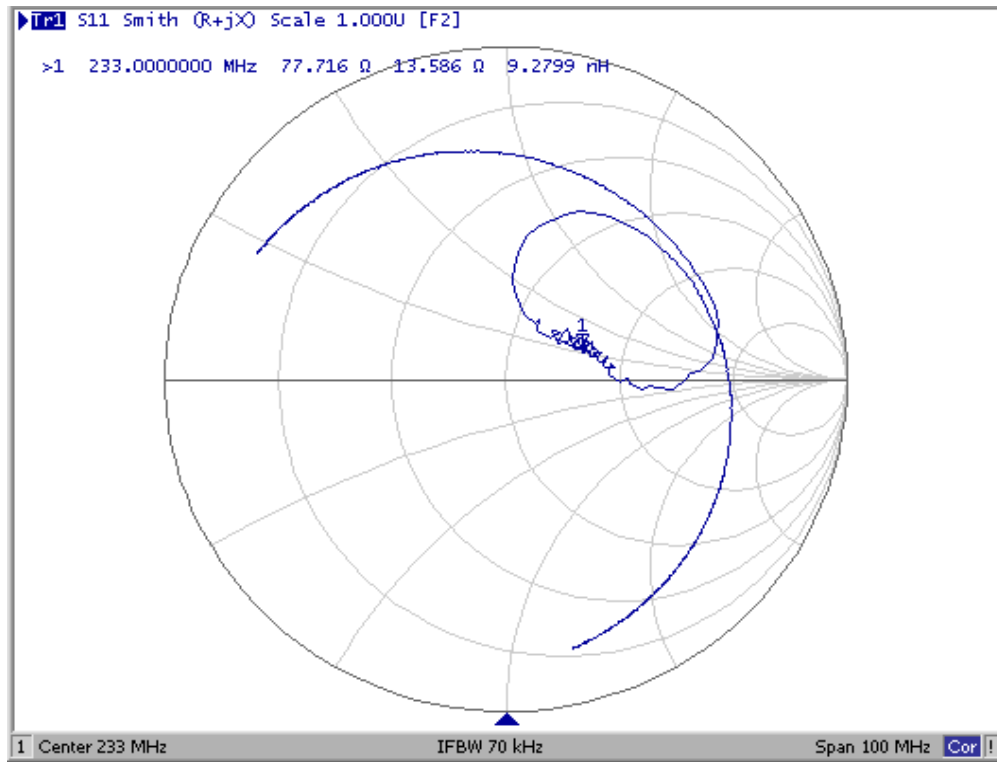
NOTES:

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 turnover temperature, T_O , is the temperature of maximum (or turnover) frequency, f_O . The nominal frequency at any case temperature, T_C , may be calculated from: $f=f_O[1-FTC(T_O-T_C)^2]$.
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.

Frequency Response Plots

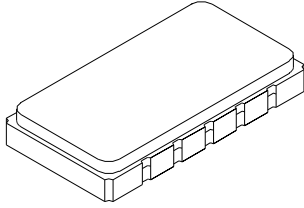


Input/Output Impedance Plots



SMP-53-S Ceramic Surface-mount 10-terminal Case

13.3 x 6.5 mm Nominal Footprint



Electrical Connections

| Connection | Terminals |
|-------------|------------|
| Input | 10 |
| Output | 5 |
| Case Ground | All others |

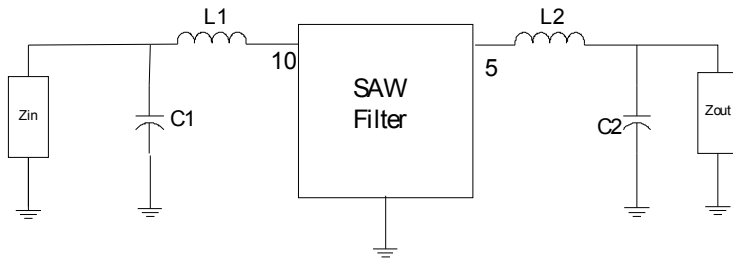
Case Dimensions

| Dimension | mm | | | Inches | | |
|-----------|-----|------|------|--------|-------|------|
| | Min | Nom | Max | Min | Nom | Max |
| A | | 13.3 | | | .524 | |
| B | | 6.5 | | | .256 | |
| C | | | 2.00 | | | .078 |
| D | | 2.3 | | | .091 | |
| E | | 1.91 | | | .075 | |
| F | | 1.02 | | | .040 | |
| G | | 1.0 | | | 0.039 | |

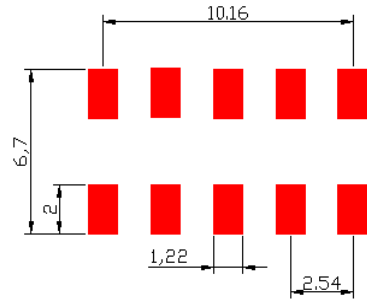
Case Material

| 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 | |

Typical Matching Network

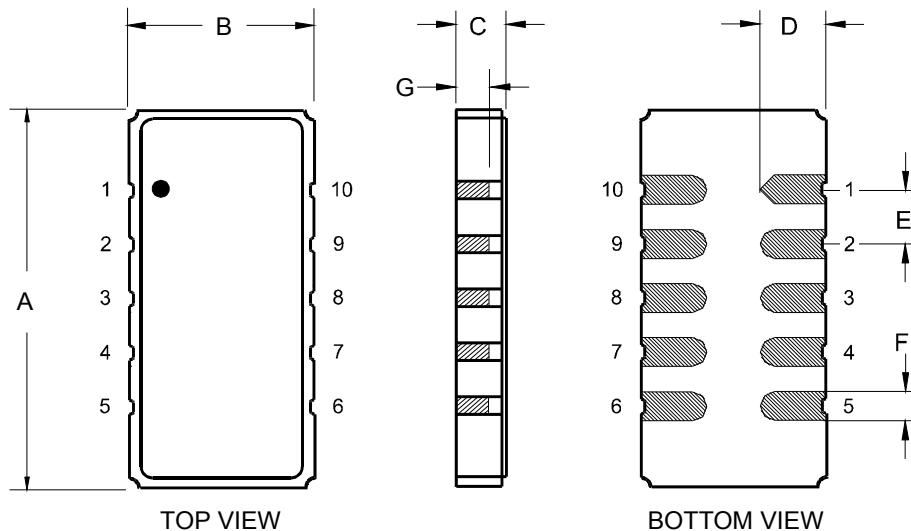


L1 = 27 nH, C1 = 18 pF, L2 = 33 nH, C2 = 20 pF

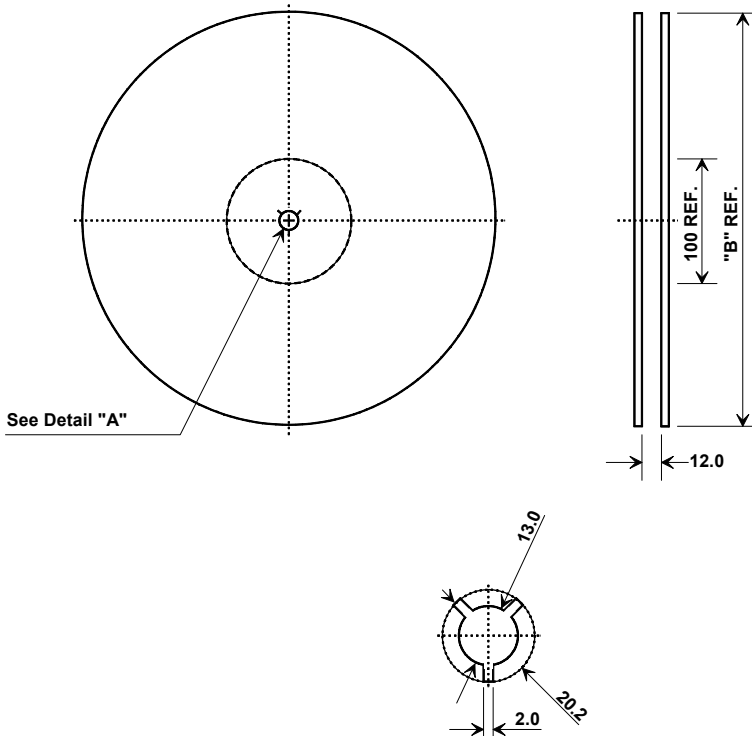


PCB Footprint (mm)

Case Outline Drawing



Reel Dimensions



| "B" | | Quantity Per Reel |
|--------------|-------------|-------------------|
| Nominal Size | | |
| Inches | millimeters | |
| 7 | 178 | 500 |
| 13 | 330 | 2000 |

Tape Dimensions

