

- **Designed for TD-SCDMA Applications**
- **Low Insertion Loss**
- **5.0 X 7.0 mm Surface-Mount Case**
- **Complies with Directive 2002/95/EC (RoHS)**

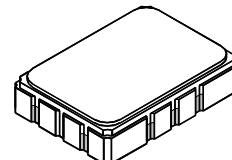


Absolute Maximum Ratings

| Rating | Value | Units |
|--|-----------------|-------|
| Maximum Incident Power in Passband | +10 | dBm |
| Maximum DC Voltage Between any Two Terminals | 30 | VDC |
| Storage Temperature Range in Tape and Reel | -40 to +85 | °C |
| Maximum Soldering Profile | 265 °C for 10 s | |

SF2148B

**138.24 MHz
SAW Filter**



SMP-03-S

Electrical Characteristics

| Characteristic | Sym | Notes | Min | Typ | Max | Units |
|--|---|---------|-------------------------------------|-----|------|-------------------|
| Nominal Center Frequency | f_C | 1 | 138.24 | | | MHz |
| Insertion Loss at f_C | IL | | | | 10.5 | dB |
| 1 dB Passband, 128.24 to 148.24 MHz | BW_1 | | | 20 | | MHz |
| Amplitude Ripple over 20 MHz Passband | | 1, 2 | | | 1 | dB _{P-P} |
| Group Delay Ripple over 20 MHz Passband | GD_{P-P} | | | | 50 | ns _{P-P} |
| Rejection: | | | | | | |
| 0 to 108.24 MHz | | 1, 2, 3 | 54 | | | dBc |
| 108.24 to 117.52 MHz | | | 50 | | | |
| 122.88 MHz | | | 45 | | | |
| 220.4 to 271.12 MHz | | | 50 | | | |
| 271.12 to 1000 MHz | | | 40 | | | |
| 1 dB Compression | | | 12 | | | dBm |
| Input IP3 | | | 35 | | | dBm |
| Operating Temperature Range | T_A | 1 | -40 | | +85 | °C |
| Input/Output Impedance | 200 ohms balanced or 50 ohms unbalanced | | | | | |
| Case Style | | 6 | SMP-03-S 7 x 5 mm Nominal Footprint | | | |
| Lid Symbolization (YY=year, WW=week, S=shift) See note 4 | | | RFM SF2148B YYWW | | | |

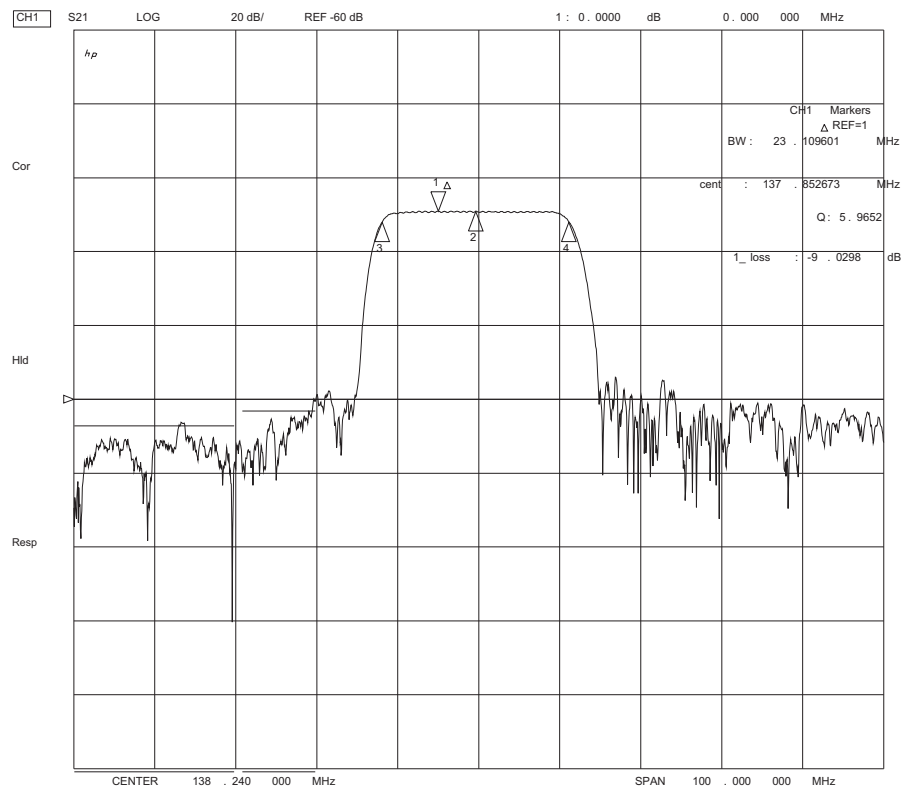


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

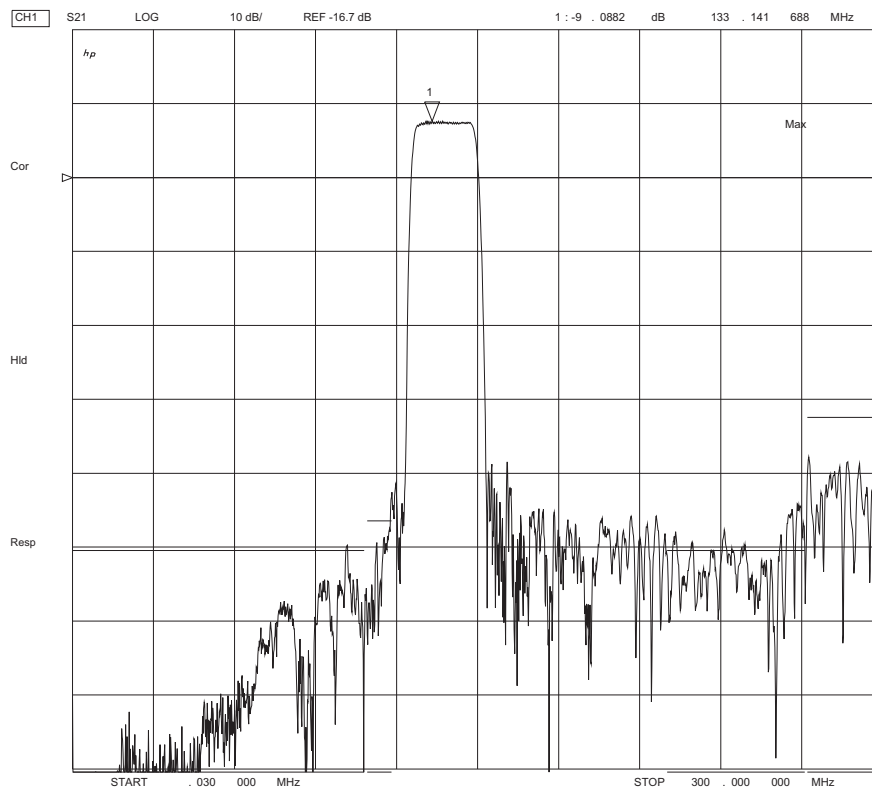
Notes:

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. The design, manufacturing process, and specifications of this filter are subject to change.
4. 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.
5. US and international patents may apply.

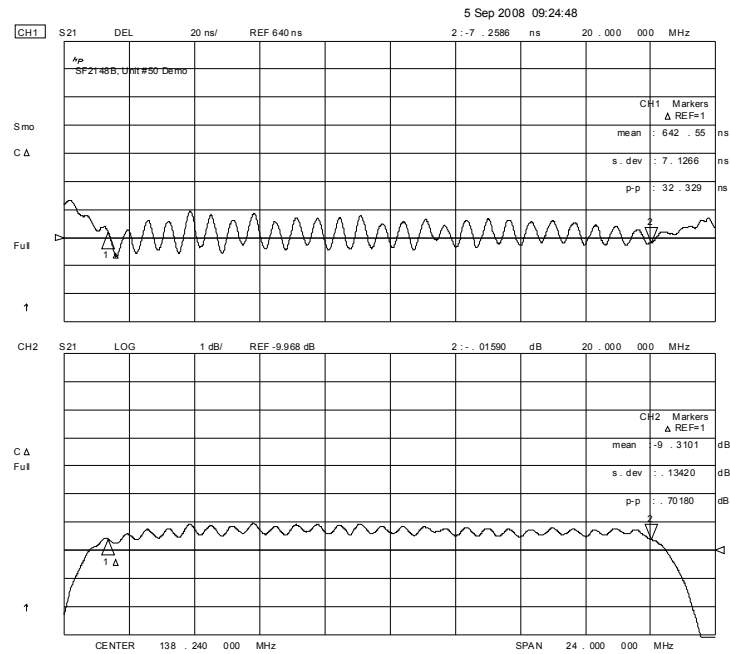
SF2148B Passband Response



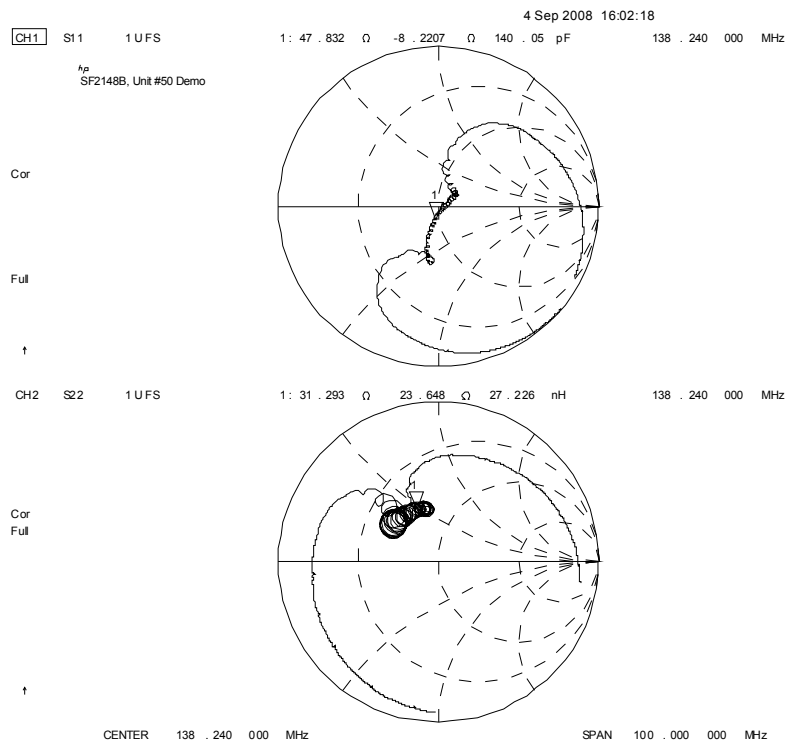
SF2148B Broadband Response



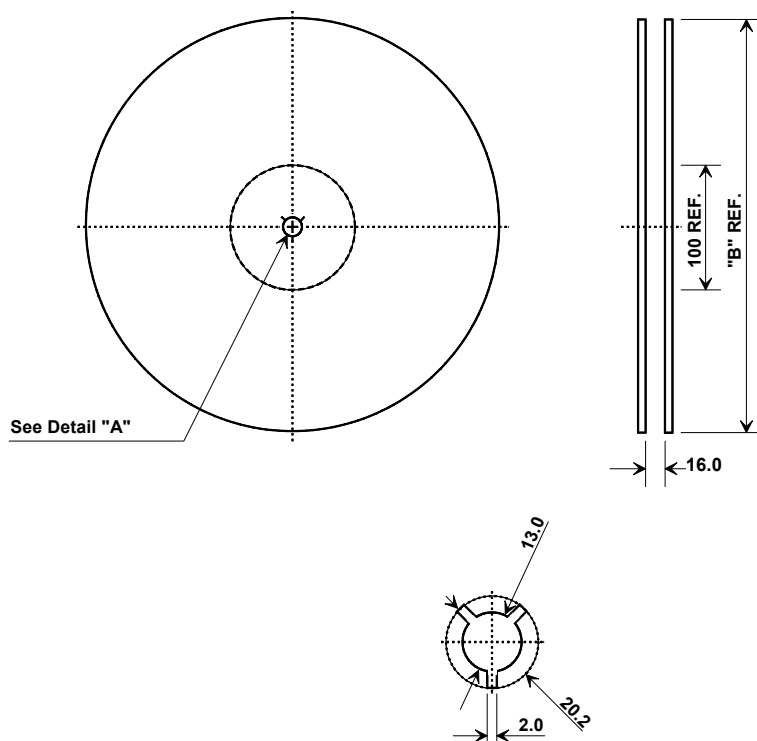
SF2148B Group Delay Deviation & Amplitude Ripple



SF2148B Input/Output Impedance Plots



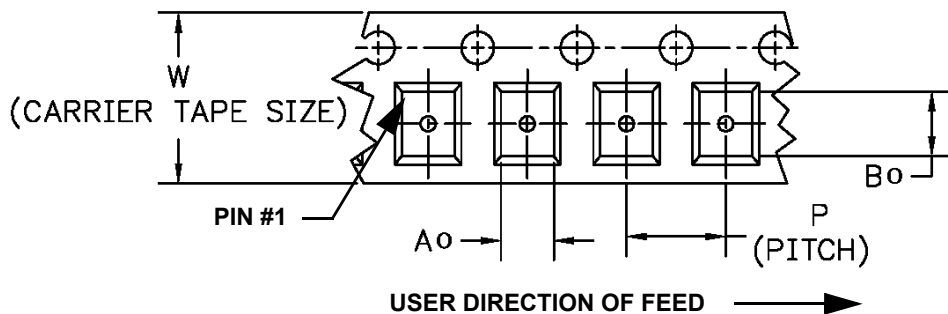
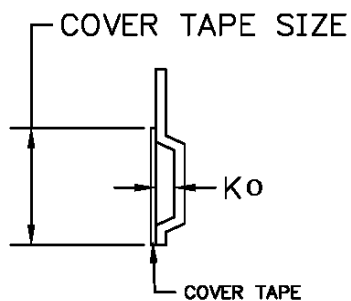
Tape and Reel Specifications



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

COMPONENT ORIENTATION and DIMENSIONS

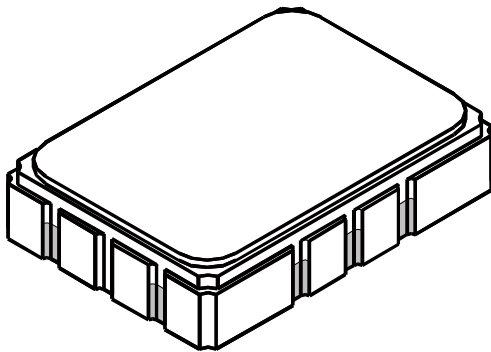
| Carrier Tape Dimensions | | Tolerance |
|-------------------------|---------|-----------|
| Ao | 5.5 mm | ± 0.1mm |
| Bo | 7.5 mm | ± 0.1mm |
| Ko | 2.0 mm | ± 0.1mm |
| Pitch | 8.0 mm | ± 0.1mm |
| W | 16.0 mm | ± 0.2mm |



SMP-03-S Case

12-Terminal Ceramic Surface-Mount Case

5 x 7 mm Nominal Footprint



| Case Dimensions | | | | | | |
|-----------------|------|------|------|--------|-------|-------|
| Dimension | mm | | | Inches | | |
| | Min | Nom | Max | Min | Nom | Max |
| A | 6.80 | 7.00 | 7.20 | 0.268 | 0.276 | 0.283 |
| B | 4.80 | 5.00 | 5.20 | 0.189 | 0.197 | 0.205 |
| C | | 1.65 | 2.00 | | 0.065 | 0.079 |
| D | | 0.80 | | | | |
| E | 2.41 | 2.54 | 2.67 | 0.095 | 0.100 | 0.105 |
| H | 0.87 | 1.1 | 1.13 | 0.034 | 0.039 | 0.044 |
| J | | 2.54 | | | | |
| K | 2.87 | 3.00 | 3.13 | 0.113 | 0.118 | 0.123 |
| P | 1.14 | 1.27 | 1.40 | 0.045 | 0.050 | 0.055 |

| 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 ₂ O ₃ Ceramic |
| Pb Free | |

| Electrical Connections | |
|------------------------|--------------------------|
| Input | 1, 10 |
| Output | 6, 5 |
| Ground | 2, 3, 4, 7, 8, 9, 11, 12 |

