

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

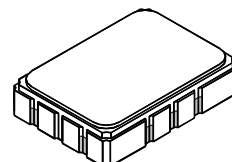


## Absolute Maximum Ratings

| Rating                                       | Value           | Units |
|----------------------------------------------|-----------------|-------|
| Maximum Incident Power in Passband           | +15             | 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 |       |

## SF2155B

## 153.6 MHz SAW Filter



**SMP-03-S**

## Electrical Characteristics

| Characteristic                               | Sym             | Notes   | Min                                 | Typ | Max | Units              |
|----------------------------------------------|-----------------|---------|-------------------------------------|-----|-----|--------------------|
| Nominal Center Frequency                     | $f_C$           | 1       | 153.6                               |     |     | MHz                |
| Insertion Loss at $f_C$                      | IL              |         |                                     | 8   | 10  | dB                 |
| 3 dB Passband                                | BW <sub>3</sub> |         |                                     | 20  |     | MHz                |
| Fast Amplitude Ripple over 20 MHz Passband   |                 | 1, 2    |                                     |     | 1.2 | dB <sub>P-P</sub>  |
| Group Delay Variation over 20 MHz Passband   | GDV             |         |                                     | 20  | 300 | ns <sub>P-P</sub>  |
| Phase Ripple over 20 MHz Passband            |                 |         |                                     |     | 10  | deg <sub>P-P</sub> |
| Rejection:                                   |                 |         |                                     |     |     |                    |
| 1 to 80 MHz                                  |                 | 1, 2, 3 | 50                                  |     |     | dB                 |
| 80 to 105 MHz                                |                 |         | 55                                  |     |     |                    |
| 200 to 230 MHz                               |                 |         | 50                                  |     |     |                    |
| 230 to 1000 MHz                              |                 |         | 40                                  |     |     |                    |
| Input VSWR                                   |                 |         |                                     |     | 3:1 |                    |
| Output VSWR                                  |                 |         |                                     |     | 3:1 |                    |
| Operating Temperature Range                  | $T_A$           | 1       | -40                                 |     | +85 | °C                 |
| Input/Output Impedance                       |                 |         | 50 ohms                             |     |     |                    |
| Case Style                                   |                 | 6       | SMP-03-S 7 x 5 mm Nominal Footprint |     |     |                    |
| Lid Symbolization, YY=year, WW=week, S=shift |                 |         | RFM SF2155B YYWWS                   |     |     |                    |

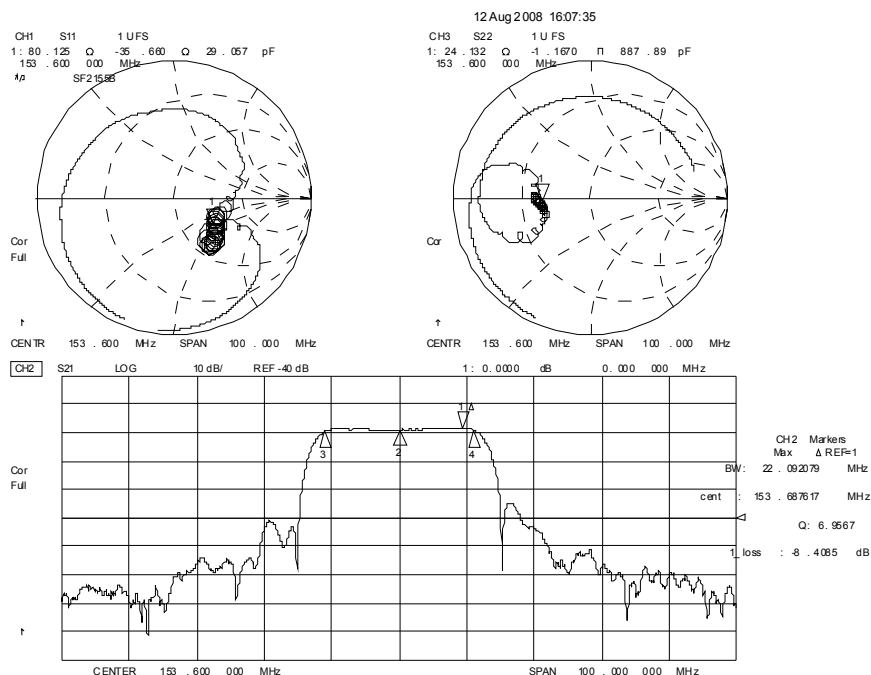


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

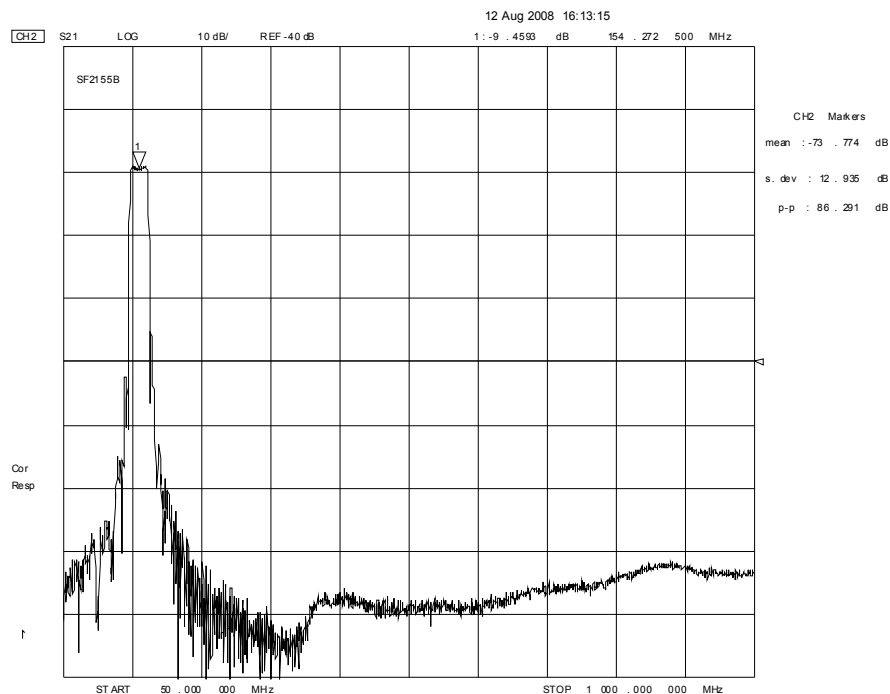
### NOTES:

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  $\Omega$  and measured with 50  $\Omega$  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.

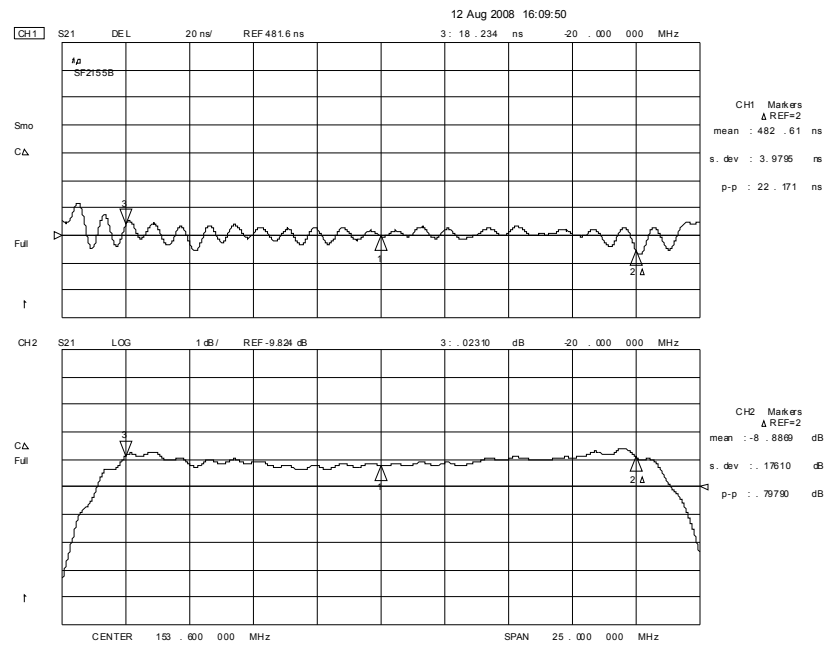
# SF2155B Input/Output Impedance Plots and Amplitude Response



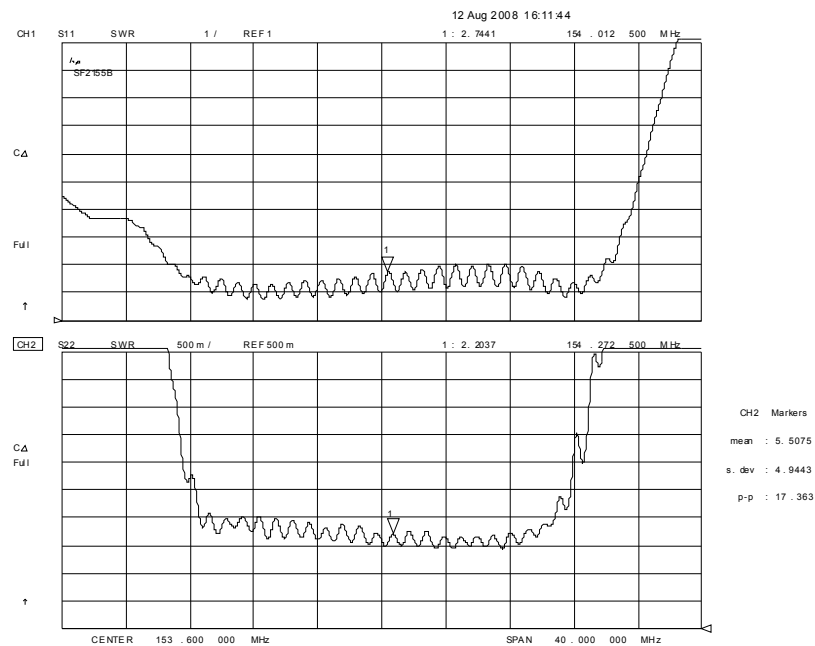
## SF2155B Broadband Amplitude Response



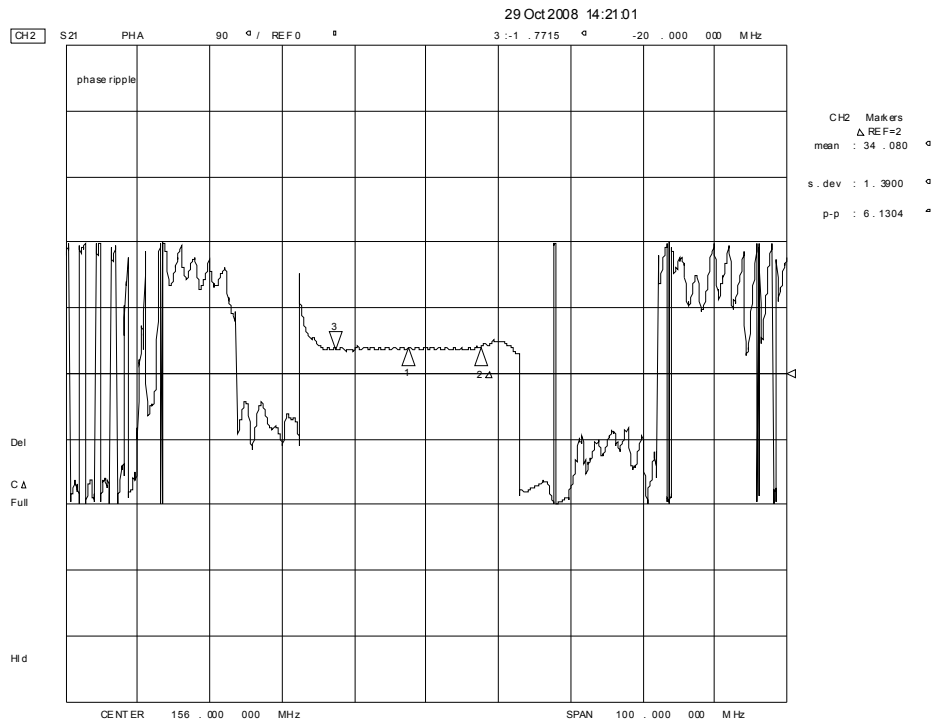
# SF2155B Passband Group Delay Deviation and Amplitude Ripple



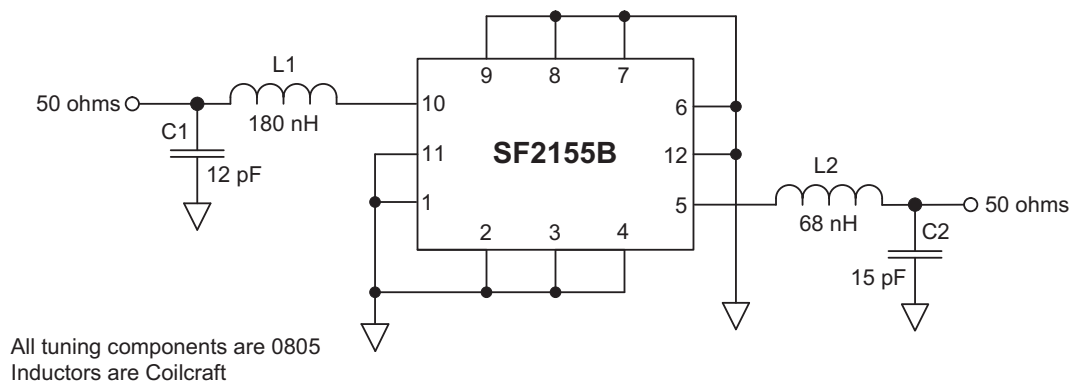
# SF2155B Input/Output VSWR



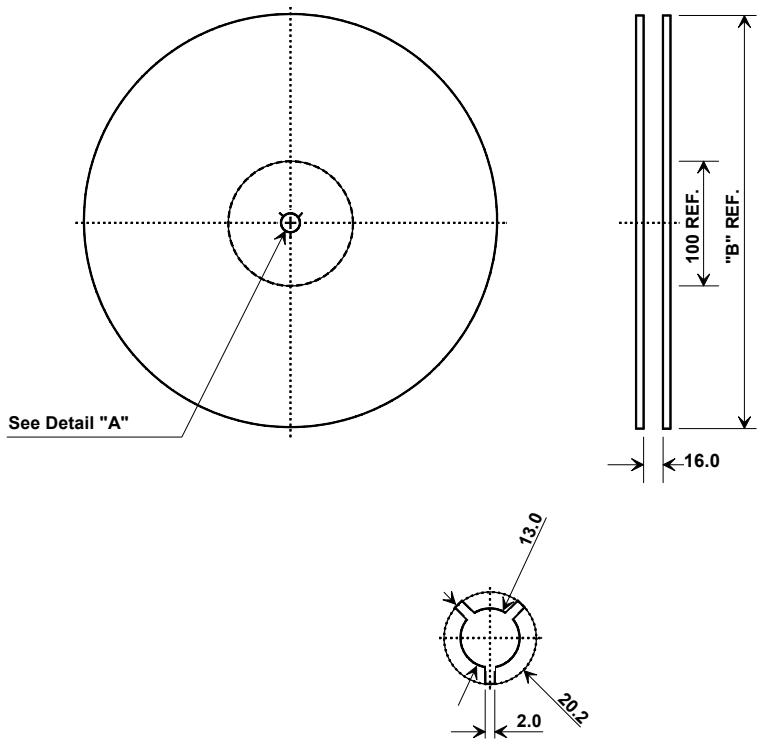
# SF2155B Passband Phase Ripple



# SF2155B Test Circuit



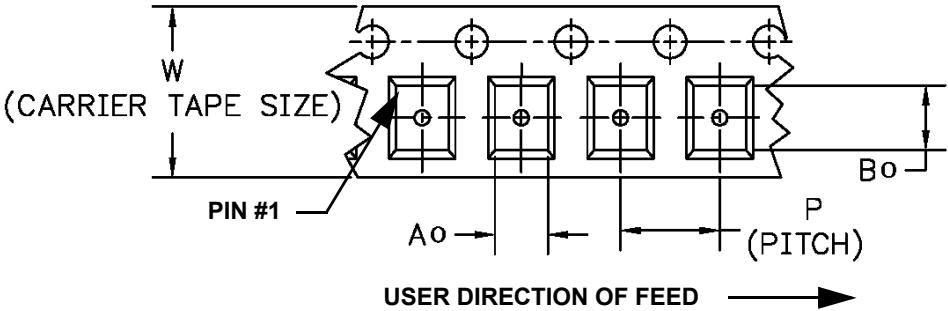
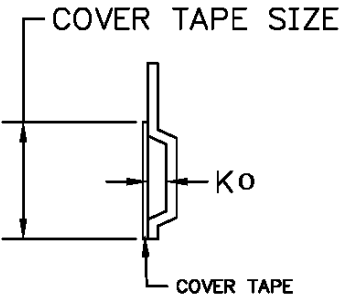
Tape and Reel Specifications



| “B”<br>Nominal Size |             | Quantity Per Reel |
|---------------------|-------------|-------------------|
| Inches              | millimeters |                   |
| 7                   | 178         | 500               |
| 13                  | 330         | 2000              |

COMPONENT ORIENTATION and DIMENSIONS

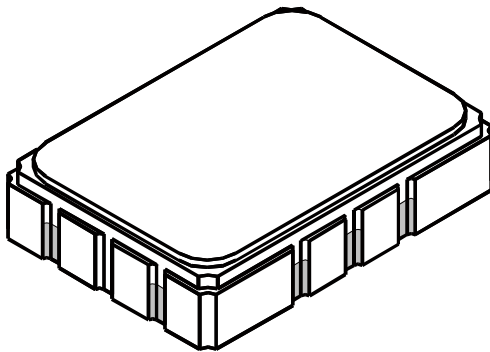
| Carrier Tape Dimensions |         | Tolerance |
|-------------------------|---------|-----------|
| Ao                      | 5.5 mm  | ± 0.1mm   |
| Bo                      | 7.5 mm  | ± 0.1mm   |
| Ko                      | 2.0 mm  | ± 0.1mm   |
| Pitch                   | 8.0 mm  | ± 0.1mm   |
| 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 $\mu\text{m}$ Gold over 1.27 to 8.89 $\mu\text{m}$ Nickel |
| Lid Plating        | 2.0 to 3.0 $\mu\text{m}$ Nickel                                      |
| Body               | $\text{Al}_2\text{O}_3$ Ceramic                                      |
| Pb Free            |                                                                      |

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

