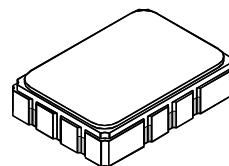




- **Designed for SDARS IF Receiver**
- **Low Insertion Loss**
- **5.0 X 7.0 mm Surface-Mount Case**
- **Differential Input and Output**

**SF1143B-1****315 MHz  
SAW Notch Filter****SMP-03****Absolute Maximum Ratings**

| Rating                                  | Value          | Units |
|---|----------------|-------|
| Maximum Incident Power in Passband      | +10            | dBm   |
| Max. DC voltage between any 2 terminals | 30             | VDC   |
| Storage Temperature Range               | -40 to +85     | °C    |
| Max Soldering Profile                   | 265°C for 10 s |       |

**Electrical Characteristics**

| Characteristic  | Sym    | Notes   | Min                               | Typ   | Max     | Units             |
|---|--------|---------|-----------------------------------|-------|---------|-------------------|
| Nominal Center Frequency  | $f_c$  | 1       |                                   | 315.0 |         | MHz               |
| Passband Insertion Loss at $f_c$                                | IL     |         |                                   | 15.1  | 17.0    | dB                |
| Passband 1 low frequency  | $BW_3$ |         |                                   |       | 309.40  | MHz               |
| Passband 1 high frequency                                       |        |         | 313.435                           |       |         | MHz               |
| Passband 2 low frequency  |        |         |                                   |       | 317.965 | MHz               |
| Passband 2 high frequency                                       |        |         | 321.685                           |       |         | MHz               |
| Notch 3dB rejection band relative to Passband 1 and Passband 2: |        | 1, 2    |                                   |       |         |                   |
| 3dB low frequency rejection                                     |        |         |                                   |       | 315.030 | MHz               |
| 3dB high frequency rejection                                    |        |         | 315.865                           |       |         |                   |
| Maximum Notch depth at $f_c$                                    |        |         | -10                               |       |         | dB                |
| Amplitude Ripple over Passband 1 +Passband 2                    |        |         |                                   |       | 1.0     | dB <sub>p-p</sub> |
| Group Delay Variation over Passband 1 +Passband 2               | GDV    |         |                                   | 23    | 200     | ns <sub>p-p</sub> |
| Rejection 100 MHz to $f_c-10.3$ and $f_c+10.3$ to $f_c+100$ MHz |        | 1, 2, 3 | 40                                |       |         | dB                |
| Operating Temperature Range                                     | $T_A$  | 1       | -40                               |       | +85     | °C                |
| Differential Input and Output Impedance                         |        |         | 250 ohms                          |       |         |                   |
| Case Style  |        | 6       | SMP-03 7 x 5 mm Nominal Footprint |       |         |                   |
| Lid Symbolization (YY=year, WW=week, S=shift) See note 4        |        |         | RFM SF1143B-1 YYWWS               |       |         |                   |

**Electrical Connections**

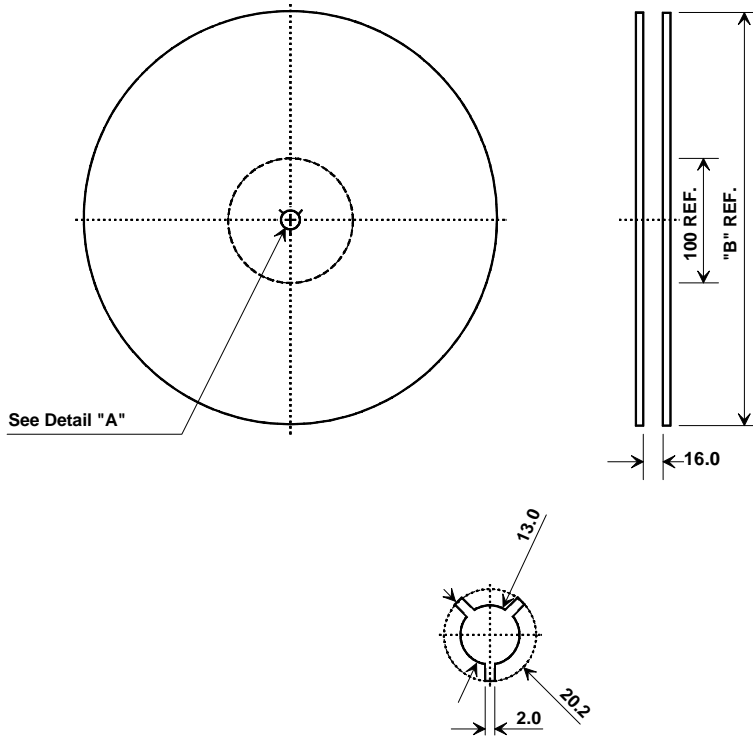
| Connection           | Terminals  |
|----------------------|------------|
| Port 1 Hot           | 10         |
| Port 1 Ground Return | 1          |
| Port 2 Hot           | 5          |
| Port 2 Ground Return | 6          |
| Case Ground          | All Others |

**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. 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. "LRIP" or "L" after the part number indicates "low rate initial production" and "ENG" or "E" indicates "engineering prototypes."
5. The design, manufacturing process, and specifications of this filter are subject to change.
6. Tape and Reel Standard ANSI / EIA 481.
7. 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.
8. US and international patents may apply.
9. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.
10. ©Copyright 1999, RF Monolithics Inc.
11. Electrostatic Sensitive Device. Observe precautions for handling.

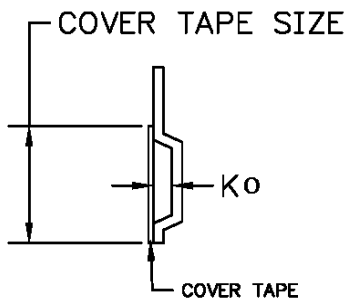


## Tape and Reel Specifications

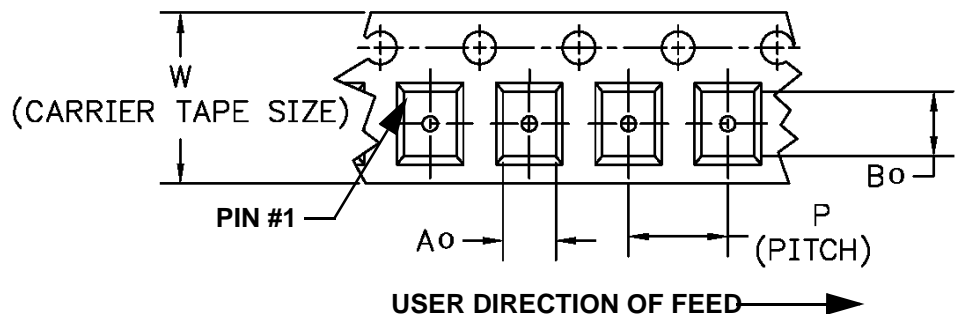


| "B"    |             | Quantity Per Reel |
|--------|-------------|-------------------|
| Inches | millimeters |                   |
| 7      | 178         | 500               |
| 13     | 330         | 2000              |

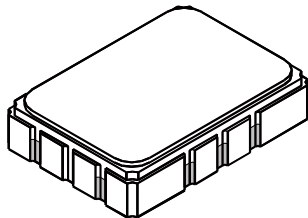
## COMPONENT ORIENTATION and DIMENSIONS



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



## 10-Terminal Ceramic Surface-Mount Case 7 x 5 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         |      | 0.60 |      |        | 0.024 |       |
| E         |      | 2.54 |      |        | 0.100 |       |
| H         |      | 1.0  |      |        | 0.039 |       |
| J         |      | 5.00 |      |        | 0.197 |       |
| K         |      | 3.00 |      |        | 0.118 |       |
| P         |      | 1.27 |      |        | 0.050 |       |

### Electrical Connections

| Connection             |                  | Terminals        |
|------------------------|------------------|------------------|
| Port 1                 | Input or Return  | 10               |
|                        | Return or Input  | 1                |
| Port 2                 | Output or Return | 5                |
|                        | Return or Output | 6                |
| Ground                 |                  | All others       |
| Single Ended Operation |                  | Return is ground |
| Differential Operation |                  | Return is hot    |

