

- **Designed for SDARS IF Receiver**
- **Low Insertion Loss**
- **5.0 X 7.0 mm Surface-Mount Case**
- **Differential Input and Output**
- **Complies with Directive 2002/95/EC (RoHS)**

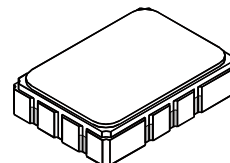


#### Absolute Maximum Ratings

| 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 |       |

**SF1141B**

**75.00 MHz  
SAW Filter**



**SMP-03**

#### Electrical Characteristics

| Characteristic                                                             | Sym             | Notes   | Min                               | Typ    | Max  | Units             |
|----------------------------------------------------------------------------|-----------------|---------|-----------------------------------|--------|------|-------------------|
| Nominal Center Frequency                                                   | $f_c$           | 1       |                                   | 75.000 |      | MHz               |
| Passband Insertion Loss at $f_c$                                           | IL              | 1       |                                   | 12.5   | 16.0 | dB                |
| 1dB Passband                                                               | BW <sub>1</sub> | 1, 2    | ±6.35                             | ±7.43  |      | MHz               |
| Fast Amplitude Ripple over $f_c \pm 6.35$ MHz                              |                 | 1, 2    |                                   |        | 1.5  | dB <sub>P-P</sub> |
| Group Delay Variation over $f_c \pm 6.35$ MHz                              | GDV             | 1, 2    |                                   | 75     | 200  | ns <sub>P-P</sub> |
| Rejection $f_c - 100$ to $f_c - 10.95$ and $f_c + 18.8$ to $f_c + 100$ MHz |                 | 1, 2, 3 | 40                                | 45     |      | dB                |
| $f_c + 10.95$ to $f_c + 18.8$ MHz                                          |                 | 1, 2, 3 | 30                                | 36     |      | dB                |
| Operating Temperature Range                                                | T <sub>A</sub>  | 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 SF1141B YYWWSS                |        |      |                   |

#### 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 |



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

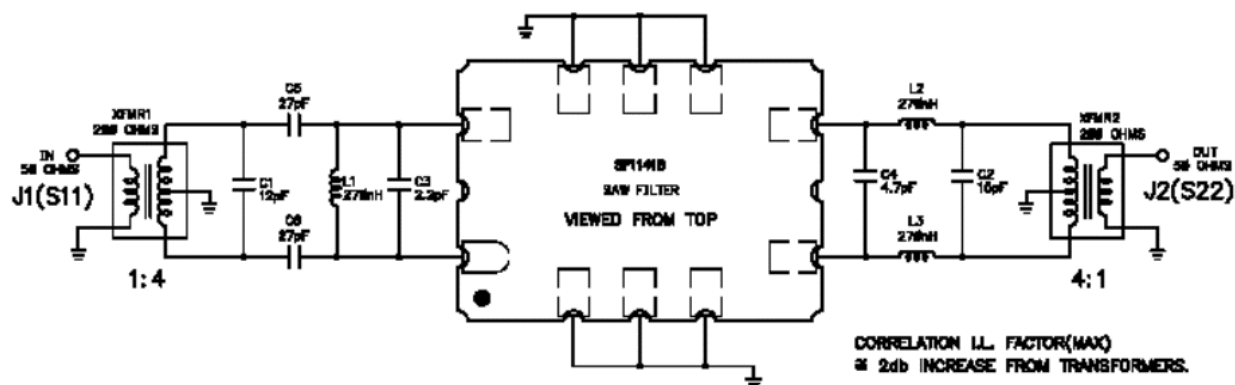
#### NOTES:

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.

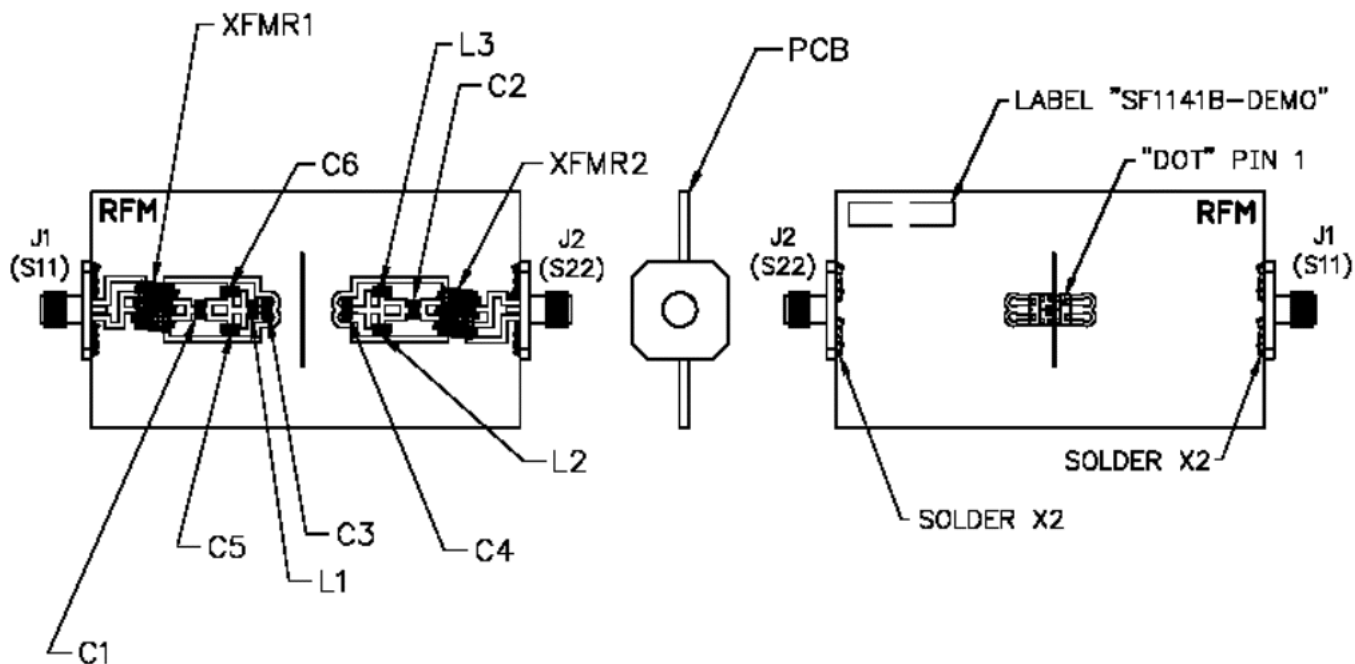
# NOTES:

- 1 USE A WRIST STRAP WHEN SOLDERING TRANS 1, AND TRANS 2 TO PCB.  
(CUT LEADS .87 IN.)
- 2 MOUNT AND SOLDER ALL COMPONENTS ON PCB.
- 3 CUT CENTER CONDUCTORS FROM J1 AND J2 TO .18 IN.
- 4 MOUNT J1 AND J2 AS SHOWN (SOLDER BACKSIDE ALSO).
- 5 LABEL DEMO BOARD ACCORDINGLY.
- 6 MOUNT "FILTER" ON TOPSIDE OF PCB AS SHOWN.

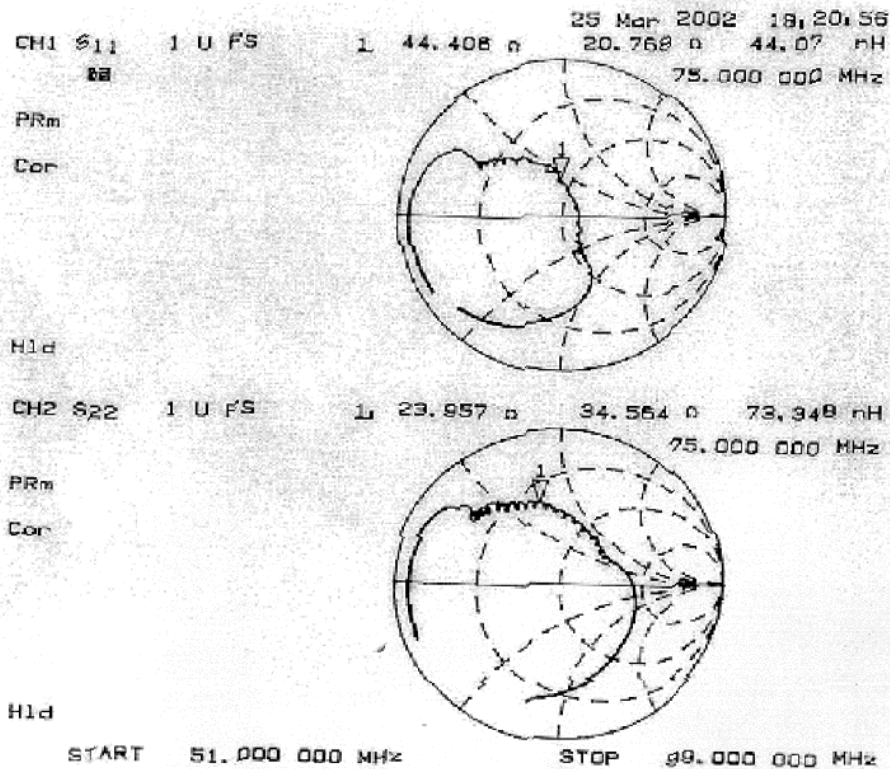
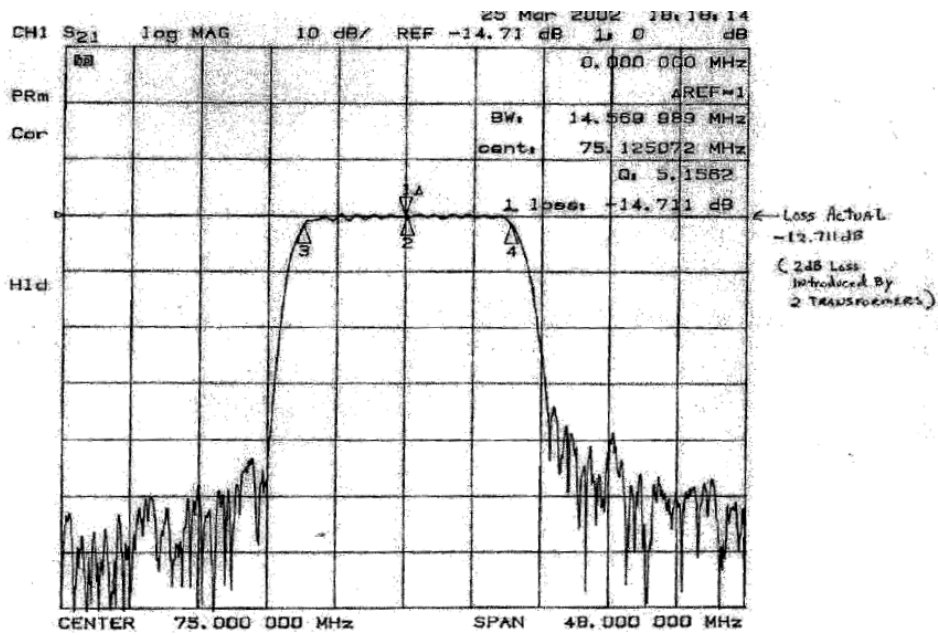
| REV | SIZE  | DESCRIPTION     | DATE    |
|-----|-------|-----------------|---------|
| A   | 9248  | INITIAL RELEASE | 11dec88 |
| B   | 10658 | REVISED         | 30apr92 |
| C   | 11076 | REVISED         | 28nov92 |

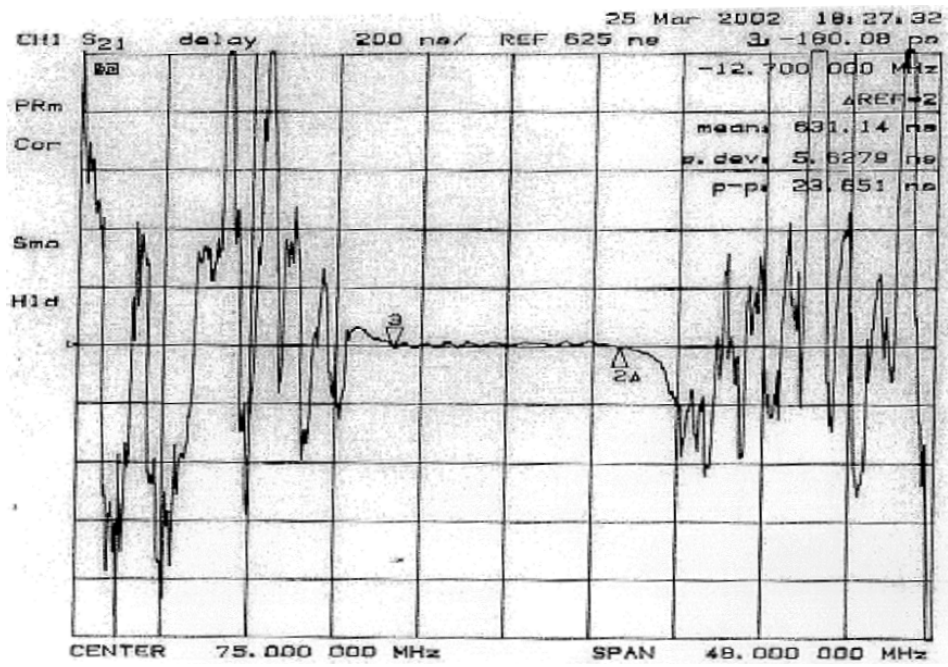


| TITLE                                    |          |             |     |       |
|------------------------------------------|----------|-------------|-----|-------|
| ASSY DIAGRAM, DEMO BOARD, SF1141B, S, TD |          |             |     |       |
| SIZE                                     | FORM NO. | QWL NO.     | REV | SHEET |
| B                                        | 2U874    | SF1141B-100 | C   | 1/2   |

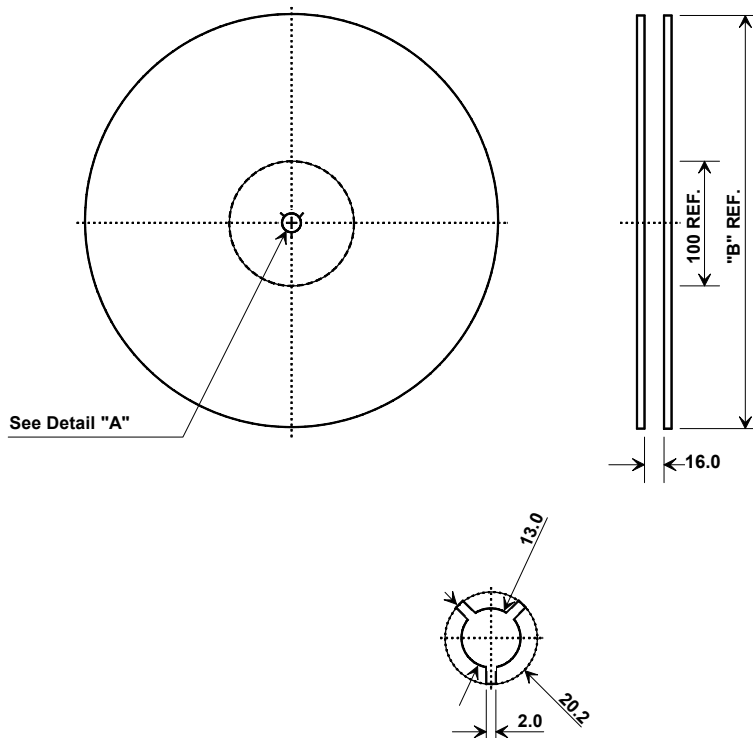


| SIZE | FORM NO. | QWL NO.     | REV | SHEET |
|------|----------|-------------|-----|-------|
| B    | 2U874    | SF1141B-100 | C   | 2     |



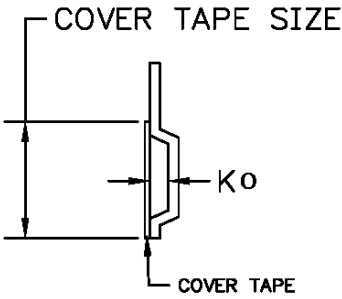


## Tape and Reel Specifications

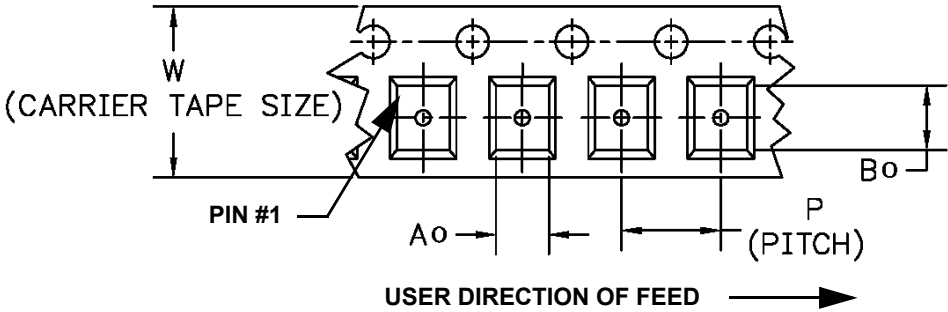


| "B" Nominal Size |             | Quantity Per Reel |
|------------------|-------------|-------------------|
| Inches           | millimeters |                   |
| 7                | 178         | 500               |
| 13               | 330         | 2000              |

COMPONENT ORIENTATION and DIMENSIONS

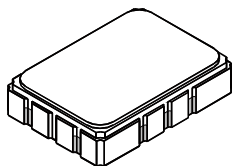


| Carrier Tape Dimensions |         | Tolerance |
|-------------------------|---------|-----------|
| Ao                      | 5.5 mm  | ± 0.1mm   |
| Bo                      | 7.5 mm  | ± 0.1mm   |
| Ko                      | 2.0 mm  | ± 0.1mm   |
| Pitch                   | 8.0 mm  | ± 0.1mm   |
|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

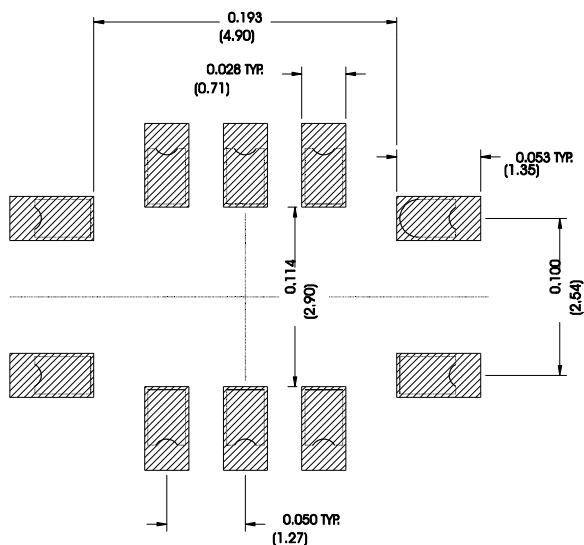


# SMP-03 Case

## 10-Terminal Ceramic Surface-Mount Case 7 x 5 mm Nominal Footprint



### Recommended PCB 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               | .47  | 0.60 | .73  | 0.019  | 0.024 | 0.029 |
| E               | 2.41 | 2.54 | 2.67 | 0.095  | 0.100 | 0.105 |
| H               | 0.87 | 1.0  | 1.13 | 0.034  | 0.039 | 0.044 |
| J               | 4.87 | 5.00 | 5.13 | 0.192  | 0.197 | 0.202 |
| 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 Termination | Au plating 30 - 60 ulnches (76.2-152 uM) over 80-200 ulnches (203-508 uM) Ni.    |
| Lid                    | Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 ulnches Thick |
| Body                   | Al <sub>2</sub> O <sub>3</sub> Ceramic                                           |
| Pb Free                |                                                                                  |

| 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    |

