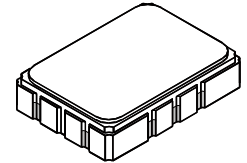


- **Low Insertion Loss**
- **5.0 X 7.0 mm Surface-Mount Case**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Moisture Sensitivity Level: 1**

RoHS  
Compliant

SF1146B

499.25 MHz  
SAW 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    |
| Suitable for lead-free soldering - Max Soldering Profile | 260°C for 30 s |       |

**Electrical Characteristics**

| Characteristic  | Sym    | Notes                   | Min                               | Typ    | Max | Units |
|---|--------|-------------------------|-----------------------------------|--------|-----|-------|
| Nominal Center Frequency  | $f_c$  |                         |                                   | 499.25 |     | MHz   |
| Passband  | IL     | Insertion Loss at $f_c$ |                                   |        | 3.5 | dB    |
|   | $BW_1$ | 1.5 dB Passband         | $\pm 15$                          |        |     | kHz   |
| Rejection   |        | $f_c \pm 1.5$ MHz       | 5                                 |        |     | dB    |
|   |        | $f_c \pm 6.0$ MHz       | 20                                |        |     |       |
|   |        | $f_c \pm 50$ MHz        | 50                                |        |     |       |
| Operating Temperature Range                                     | $T_A$  |                         | -40                               |        | +85 | °C    |
| Differential Input and Output Impedance after matching          |        |                         | 50 ohms                           |        |     |       |
| Case Style  |        |                         | SMP-03 7 x 5 mm Nominal Footprint |        |     |       |
| Lid Symbolization (YY=year, WW=week, S=shift, ## Sequence Code) |        |                         | RFM, SF1146B, <u>YYWWS##</u>      |        |     |       |

**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 |



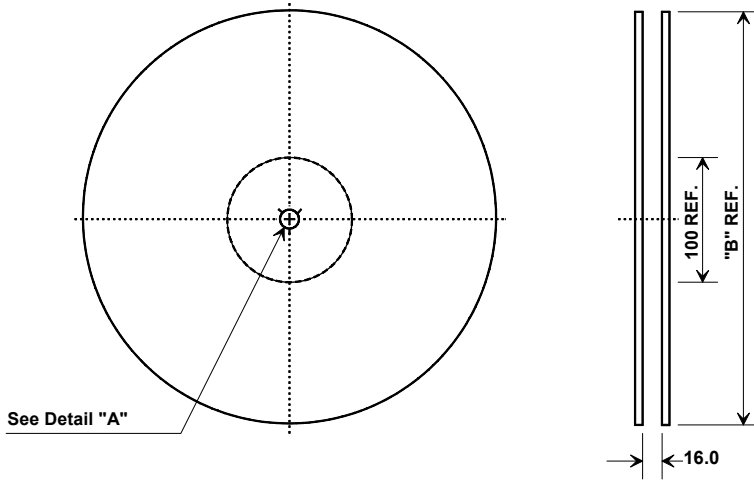
**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

**NOTES:**

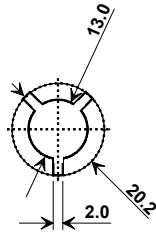
1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

## Tape and Reel Specifications

Tape and Reel Standard per ANSI/EIA-481

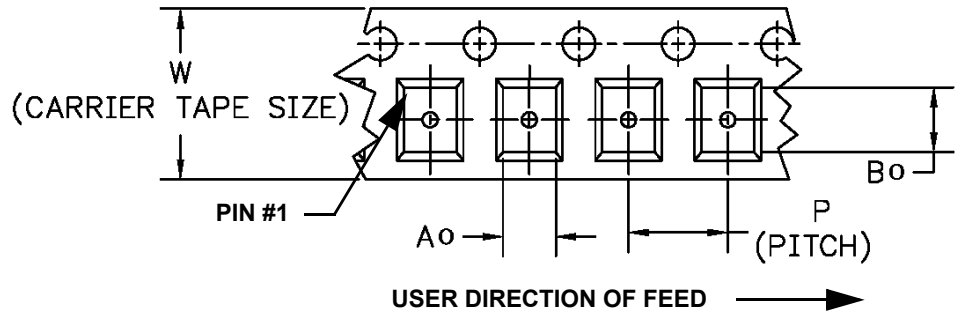
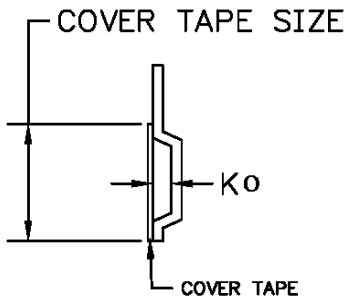


| "B "   |             | Quantity Per Reel |
|--------|-------------|-------------------|
| Inches | millimeters |                   |
| 7      | 178         | 500               |
| 13     | 330         | 2000              |



### COMPONENT ORIENTATION and DIMENSIONS

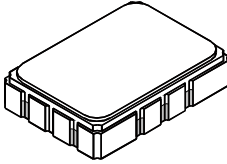
| Carrier Tape Dimensions |         |
|-------------------------|---------|
| Ao                      | 5.5 mm  |
| Bo                      | 7.5 mm  |
| Ko                      | 2.0 mm  |
| Pitch                   | 8.0 mm  |
| W                       | 16.0 mm |



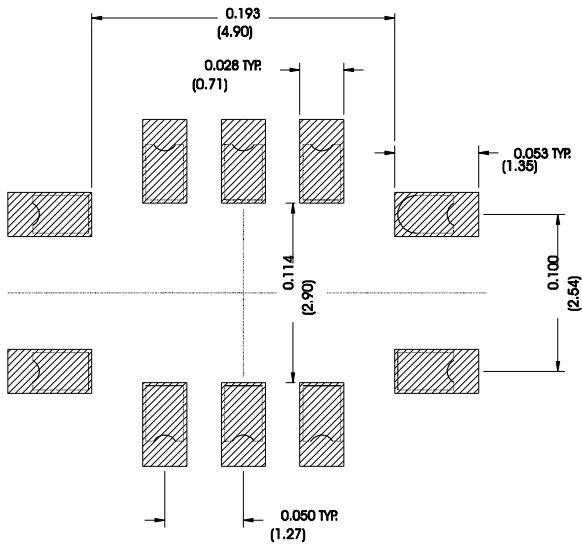
# SMP-03 Case

## 10-Terminal Ceramic Surface-Mount Case

### 7 x 5 mm Nominal Footprint



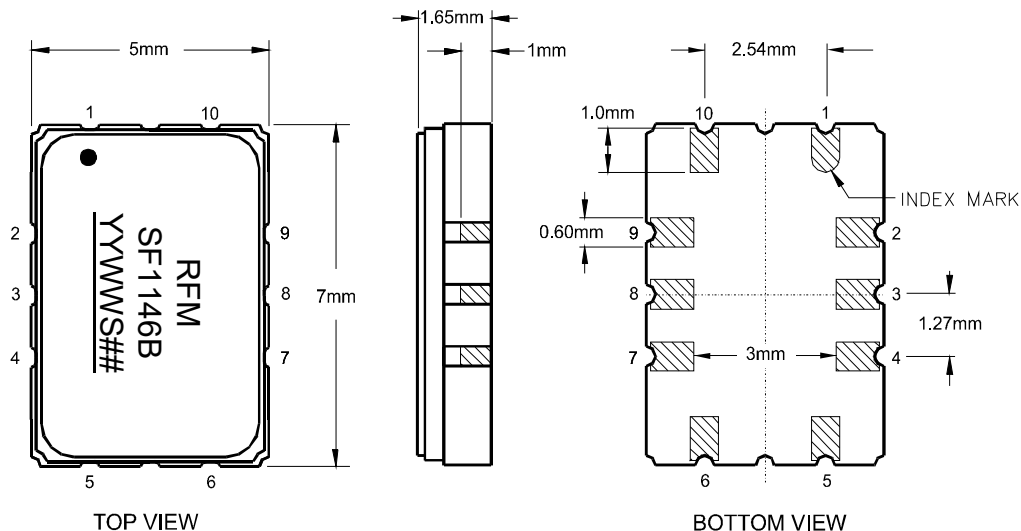
#### Recommended PCB Footprint



| 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               |      | 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              |
| <b>Single Ended Operation</b> |                  | <b>Return is ground</b> |
| <b>Differential Operation</b> |                  | <b>Return is hot</b>    |

| Materials              |   |
|------------------------|---|
| Solder Pad Termination | Au plating 30 - 60 unches (76.2-152 uM) over 80-200 unches (203-508 uM) Ni.     |
| Lid                    | Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 unches Thick |
| Body                   | Al <sub>2</sub> O <sub>3</sub> Ceramic  |



## Recommended Reflow Profile

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 260°C+0/-5°C peak (10 seconds).
4. Time: 5 times maximum.

