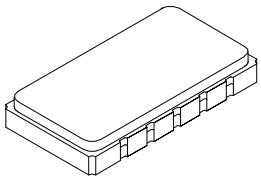
# SF2027B

# 199.0 MHz SAW Filter

- ***GSM BTS Receiver IF Applications***
- ***Small Size***
- ***Hermetic 13.3 X 6.5 mm Surface Mount Case***



**SMP-53-S**

| | |
|---|---|
| **Input power Level** short test | +18 dBm |
| standard operation, max | +10 dBm |
| Max DC Voltage between any 2 terminals | 10V |
| Input: possible for balanced and unbalanced operation (TBD) | |
| Output: Balanced | |
| External matching to 50 or 200 ohms | |

## Electrical Characteristics

| Characteristic | Sym | Notes | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|
| Nominal Frequency | $f_N$ | 1 | | 199.0 | | MHz |
| Insertion Loss (including matching to 200 ohms) | IL | | | < 7.0 | | dB |
| Group Delay Ripple, peak - peak (198.9 .. 199.1 MHz) | | | | < 700 | | ns |
| Amplitude Ripple, peak - peak (198.9 .. 199.1 MHz) | | | | < 1.0 | | dB |
| Relative attenuation fn - 100 kHz .. fn +100 kHz (passband) | | | | < 0.7 | | |
| fn - 300 kHz, fn +300 kHz | | | | > 10 | | dB |
| fn - 500 kHz, fn +500 kHz | | | | > 27 | | dB |
| fn - 600 kHz, fn +600 kHz | | | | > 36 | | dB |
| <fn - 700 kHz,> fn +700 kHz | | | | > 45 | | dB |

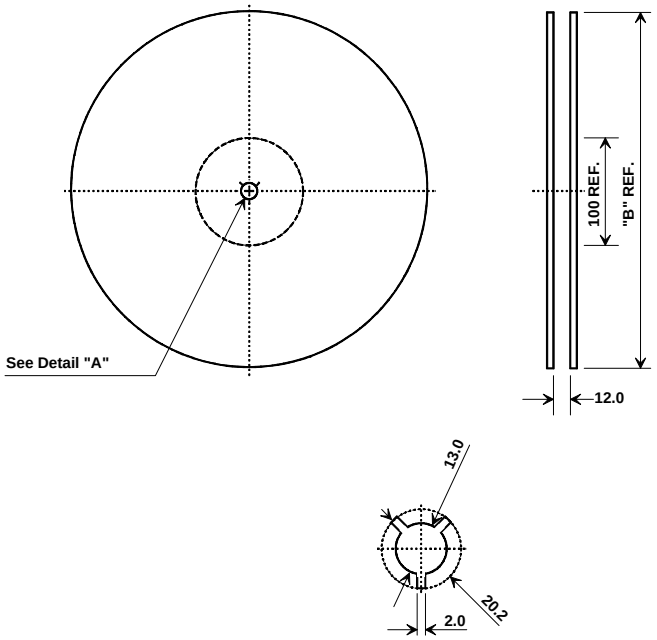
| | |
|---|---|
| Case Style | SMP-53-S 13.3 X 6.5 mm Nominal Footprint |
| Lid Symbolization (Y=year, WW=week, S=shift) See note 4 | RFM SF2027B YWWS |

### 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. A dB offset exists for RFM because of the loss introduced by using transformers on the Input and Output.
2. Rejection is measured as attenuation below the minimum IL point in the pass-band. Rejection in final user application is dependent on PCB layout and external impedance matching design. See Application Note No. 42 for details.
3. "LRIP" or "L" after the part number indicates "low rate initial production" and "ENG" or "E" indicates "engineering prototypes."
4. The design, manufacturing process, and specifications of this filter are subject to change.
5. 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.
6. US and international patents may apply.
7. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.
8. ©Copyright 1999, RF Monolithics Inc.
9. Electrostatic Sensitive Device. Observe precautions for handling.

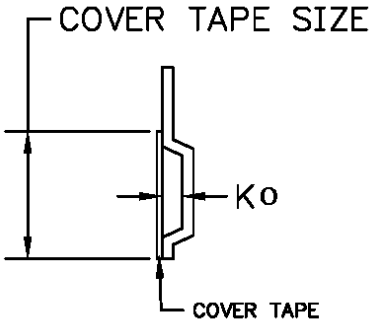
RF Monolithics, Inc. Phone: (972) 233-2903 Fax: (972) 387-8148 E-mail: info@rfm.com
RFM Europe Phone: 44 1963 251383 Fax: 44 1963 251510 http://www.rfm.com

## Tape and Reel Specifications

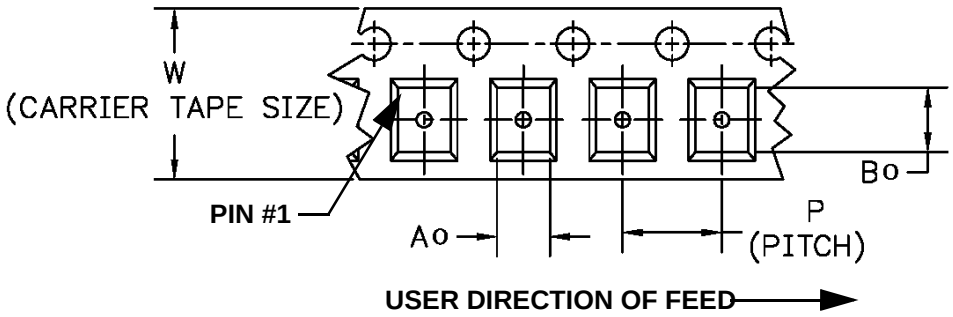



| "B " Nominal Size | | Quantity Per Reel |
|---|---|---|
| Inches | millimeters | |
| 7 | 178 | 500 |
| 13 | 330 | 1000 |

### COMPONENT ORIENTATION and DIMENSIONS

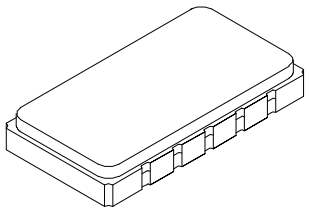



| Carrier Tape Dimensions | |
|---|---|
| **Ao** | .274 ± .004 (7.0) |
| **Bo** | .542 ± .004 (13.76) |
| **Ko** | .088 ± .004 (2.2) |
| **P** | 12mm |
| **W** | 24mm |
| **Tape Length** | 86M |
| **Pockets/M** | 83/M |



# SMP-53-S Case

## 10-Terminal Ceramic Surface-Mount Case
## 13.3 x 6.5 mm Nominal Footprint

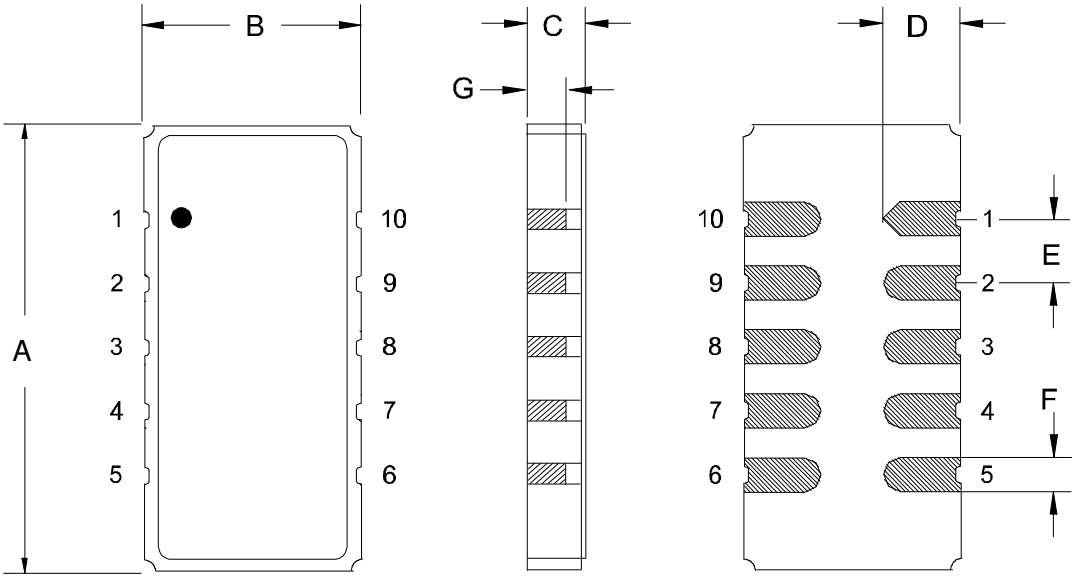


**Case Dimensions**

| Dimension | mm | | | Inches | | |
|---|---|---|---|---|---|---|
| | Min | Nom | Max | Min | Nom | Max |
| A | | 13.3 | | | .524 | |
| B | | 6.5 | | | .256 | |
| C | | | 2.00 | | | .078 |
| D | | 2.3 | | | .091 | |
| E | | 1.91 | | | .075 | |
| F | | 1.02 | | | .040 | |
| G | | 1.0 | | | 0.039 | |

**Electrical Connections**

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




TOP VIEW BOTTOM VIEW

## Solder Temperature Profile

Figure 1 shows the recommended temperature profile for reflow soldering SMP-03 and SMP53-S packages. The package consists of a ceramic base with a metal lid that is attached with high-temperature solder. The filter package is hermetically sealed and the solder seal must not be compromised with excessive heat in assembly. It is critical that the filter package is never heated above 250°C. It is recommended that the package be heated no higher than 240°C for no more than 10 seconds.

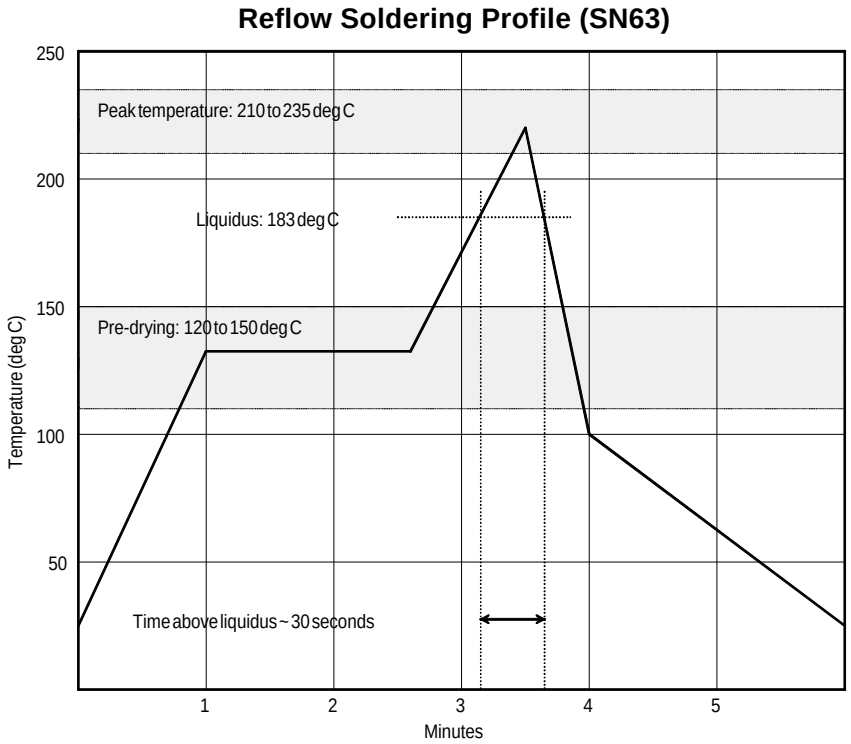



**Figure 1**