

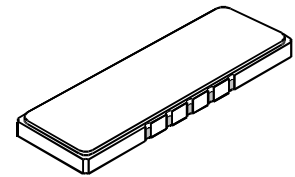


- Designed for GSM BTS Receiver IF Applications
- Simple External Impedance Matching
- Hermetic SMP-87 Surface-mount Case
- Unbalanced Input and Output
- Extended Temperature Range Version of SF1081A
- Complies with Directive 2002/95/EC (RoHS)



SF1081A-1

**71.00 MHz
SAW Filter**



SMP-87

Absolute Maximum Ratings

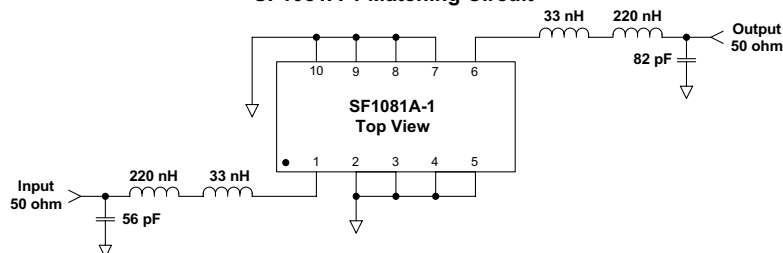
| Rating | Value | Units |
|--|-----------------|-------|
| Maximum Incident Power in Passband | +10 | dBm |
| Maximum DC Voltage on any Non-ground Terminal | 30 | VDC |
| Storage Temperature Range | -40 to +85 | °C |
| Suitable for Lead-free Soldering - Maximum Soldering Profile | 260 °C for 30 s | |

Electrical Characteristics

| Characteristic | Sym | Notes | Min | Typ | Max | Units |
|-----------------------------|---|--------|-----------|-----------|-----------|-------------------|
| Nominal Center Frequency | f_c | 1 | 71.000 | | | MHz |
| Passband | Insertion Loss at f_c | IL | | 6 | 8.0 | dB |
| | 3 dB Passband | BW_3 | ± 100 | ± 140 | ± 200 | kHz |
| | Amplitude Ripple over $f_c \pm 80$ kHz | | | | 1.5 | dB _{P-P} |
| | Group Delay Variation over $f_c \pm 50$ kHz | GDV | | 300 | 1000 | ns _{P-P} |
| | Absolute Group Delay | GD | | 2.8 | | μ s |
| Rejection | $f_c - 600$ to $f_c - 400$ and $f_c + 400$ to $f_c + 600$ kHz | | 25 | 26 | | dB |
| | $f_c - 1.0$ to $f_c - 0.6$ and $f_c + 0.6$ to $f_c + 1.8$ MHz | | 35 | 40 | | |
| | 69.6 to 70.0 MHz | | 40 | 45 | | |
| | 31 to 69.6 and 71.8 to 111 MHz | | 35 | 50 | | |
| Operating Temperature Range | T_A | 1 | -40 | | +85 | °C |

| | |
|--|--------------------------------------|
| Impedance Matching to 50 Ω unbalanced | External L-C |
| Case Style | SMP-87 22.1 X 8 mm Nominal Footprint |
| Lid Symbolization (YY=year, WW=week) | RFM SF1081A-1 YYWW |

SF1081A-1 Matching Circuit

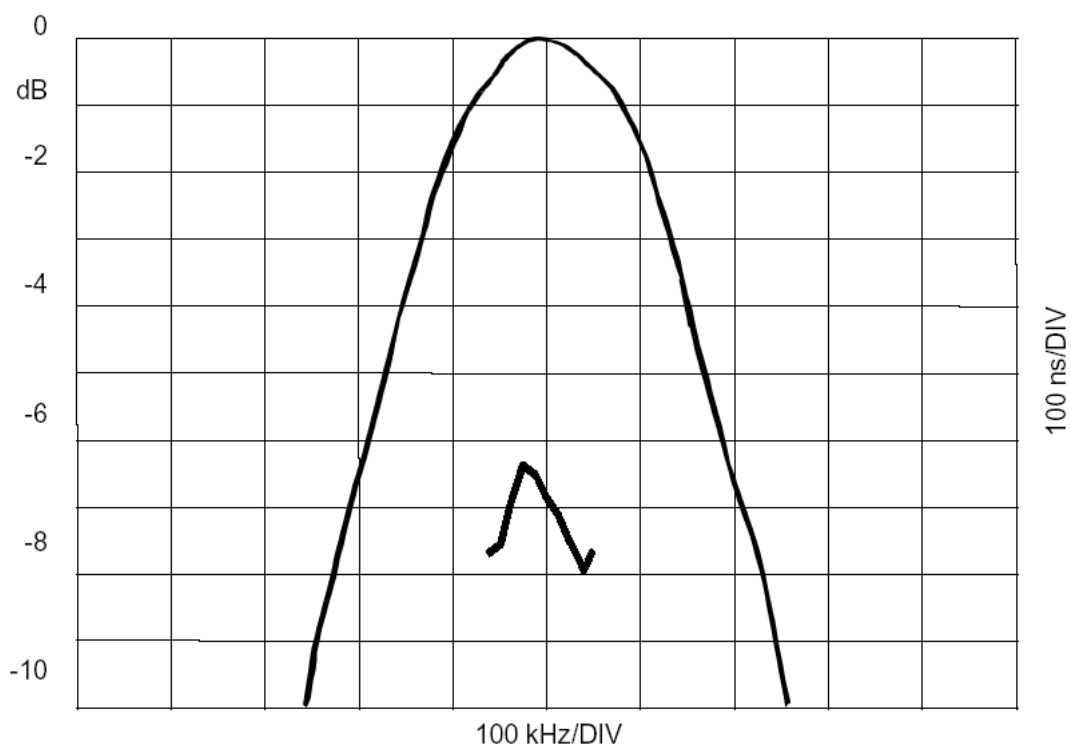
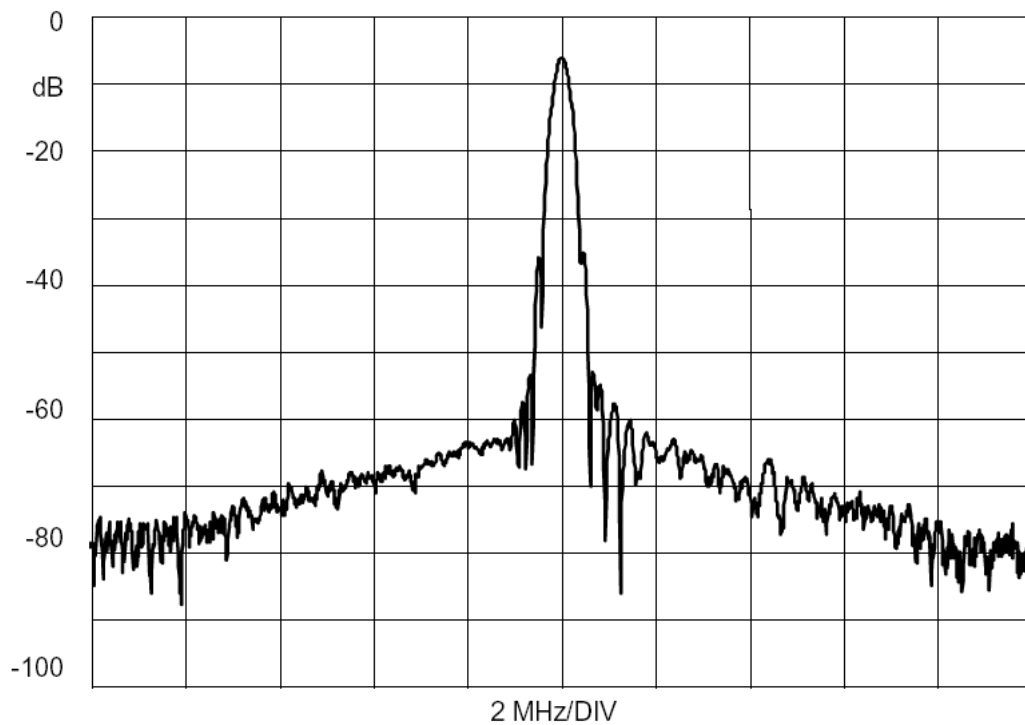


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

Notes:

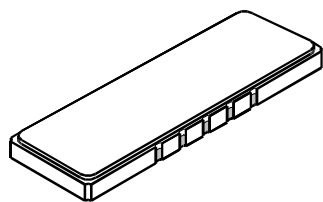
1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to a demonstration board with impedance matching to 50 Ω and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center 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"

5. and "ENG" or "E" indicates "engineering prototypes."
6. The design, manufacturing process, and specifications of this filter are subject to change.
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.



SMP-87 Case

10-Terminal Ceramic Surface-Mount Case
22.1 x 8 mm Nominal Footprint



Materials

| | |
|--------------------|--|
| Solder Pad Plating | 1.015 μm Gold minimum over 2.030 μm Nickel |
| Lid Plating | 2.0 to 3.0 μm Nickel |
| Body | Al_2O_3 Ceramic |
| Pb Free | |

Case Dimensions

| Dimension | mm | | | Inches | | |
|-----------|-------|-------|-------|--------|-------|-------|
| | Min | Nom | Max | Min | Nom | Max |
| A | 21.90 | 22.10 | 22.40 | 0.862 | 0.870 | 0.882 |
| B | 7.80 | 8.00 | 8.30 | 0.307 | 0.315 | 0.327 |
| C | | 1.78 | 2.00 | | 0.070 | 0.079 |
| D | | 2.29 | | | 0.090 | |
| E | | 1.02 | | | 0.040 | |
| H | | 1.0 | | | 0.039 | |
| M | | 4.83 | | | 0.190 | |
| N | | 2.41 | | | 0.095 | |
| P | | 1.905 | | | 0.075 | |

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 |

