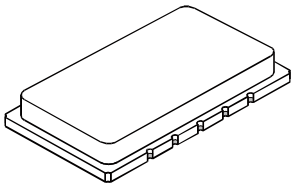
# SF1097A

# 71 MHz SAW Filter

- ***Designed for GSM Terminal IF Applications***
- ***Excellent Size-to-Performance Ratio***
- ***Hermetic 14 x 8 mm Surface-Mount Case***



**SMP-08**

### Absolute Maximum Ratings

| Rating | Value | Units |
|---|---|---|
| Maximum Incident Power in Passband | +20 | dBm |
| Max. DC voltage between any 2 terminals | 30 | VDC |
| Storage Temperature Range | -40 to +85 | °C |
| Max. Soldering Profile | 235°C for 90 s | |

### Electrical Characteristics

| Characteristic | | Sym | Notes | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|---|
| Nominal Center Frequency | | $f_C$ | 1 | | 71.000 | | MHz |
| Passband | Insertion Loss at fc | IL | | | 6.5 | 9.0 | dB |
| | 2 dB Passband | $BW_2$ | 1, 2 | ±90 | | | kHz |
| | 3 dB Passband | $BW_3$ | | ±110 | | | |
| | Group Delay Variation over fc ±90 kHz | GDV | | | 500 | 1500 | $ns_{P-P}$ |
| Rejection | fc-350 to fc-250 and fc+250 to fc+250 kHz | | 1, 2, 3 | 5 | | | dB |
| | fc-500 to fc-350 and fc+350 to fc+500 kHz | | | 20 | | | |
| | fc-700 to fc-500 and fc+500 to fc+700 kHz | | | 30 | | | |
| | fc-2500 to fc-700 and fc+700 to fc+2500 kHz | | | 35 | | | |
| | Ultimate 10 MHz to fc-2.5 MHz and fc+2.5 MHz to 130 MHz | | | 40 | | | |
| | Except spurious responses at 1.05, 1.6, 1.8, & 2 x fc | | | 35 | | | |
| Operating Temperature Range | | $T_A$ | 1 | -20 | | +80 | °C |

| | |
|---|---|
| Case Style | SMP-08 14 x 8 mm Nominal Footprint |
| Lid Symbolization (YY = year, WW = week) | RFM SF1097A YYWW |

**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 W and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency, fc.
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. 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.
7. US and international patents may apply.
8. Electrostatic Sensitive Device. Observe precautions for handling.

### Electrical Connections

| Connection | Terminals |
|---|---|
| Port 1 | 1, 10 |
| Port 2 | 5, 6 |
| Case Ground | All others |

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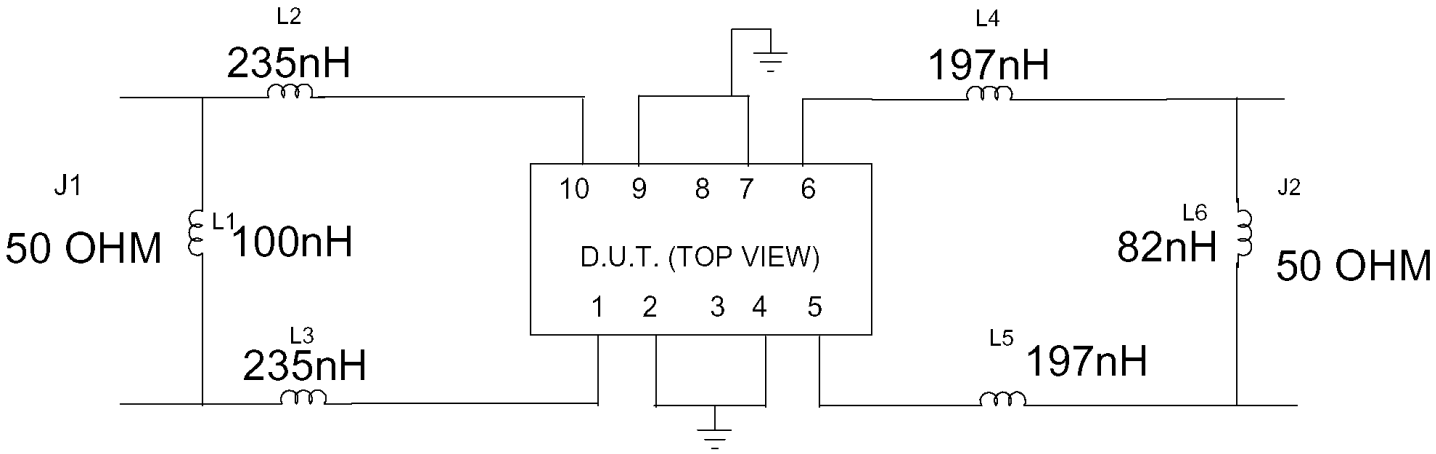
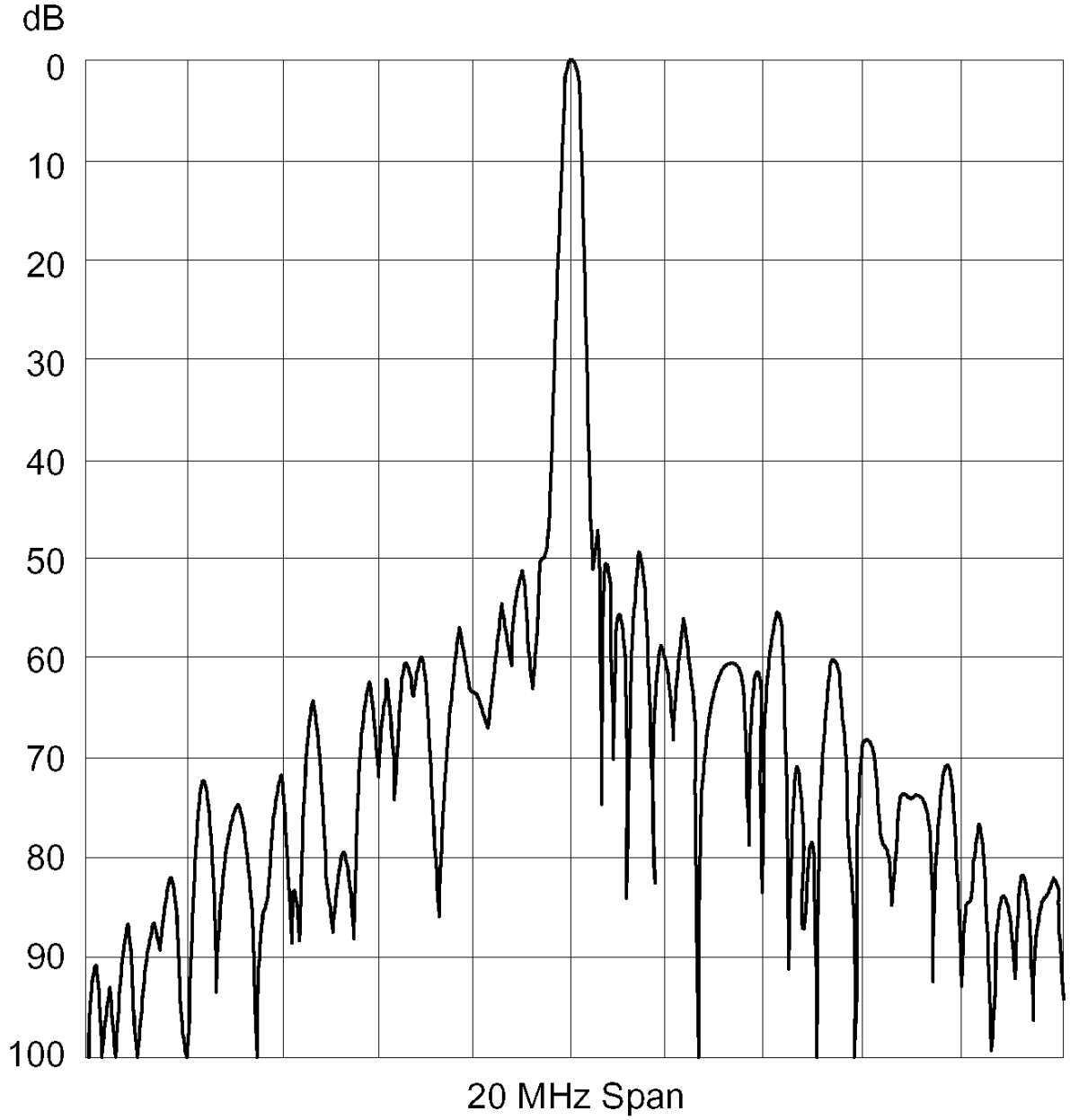
## *71 MHz SAW Filter Suggested Matching Network*

Pinout and reference matching network. Actual values will be different on customer PCB.



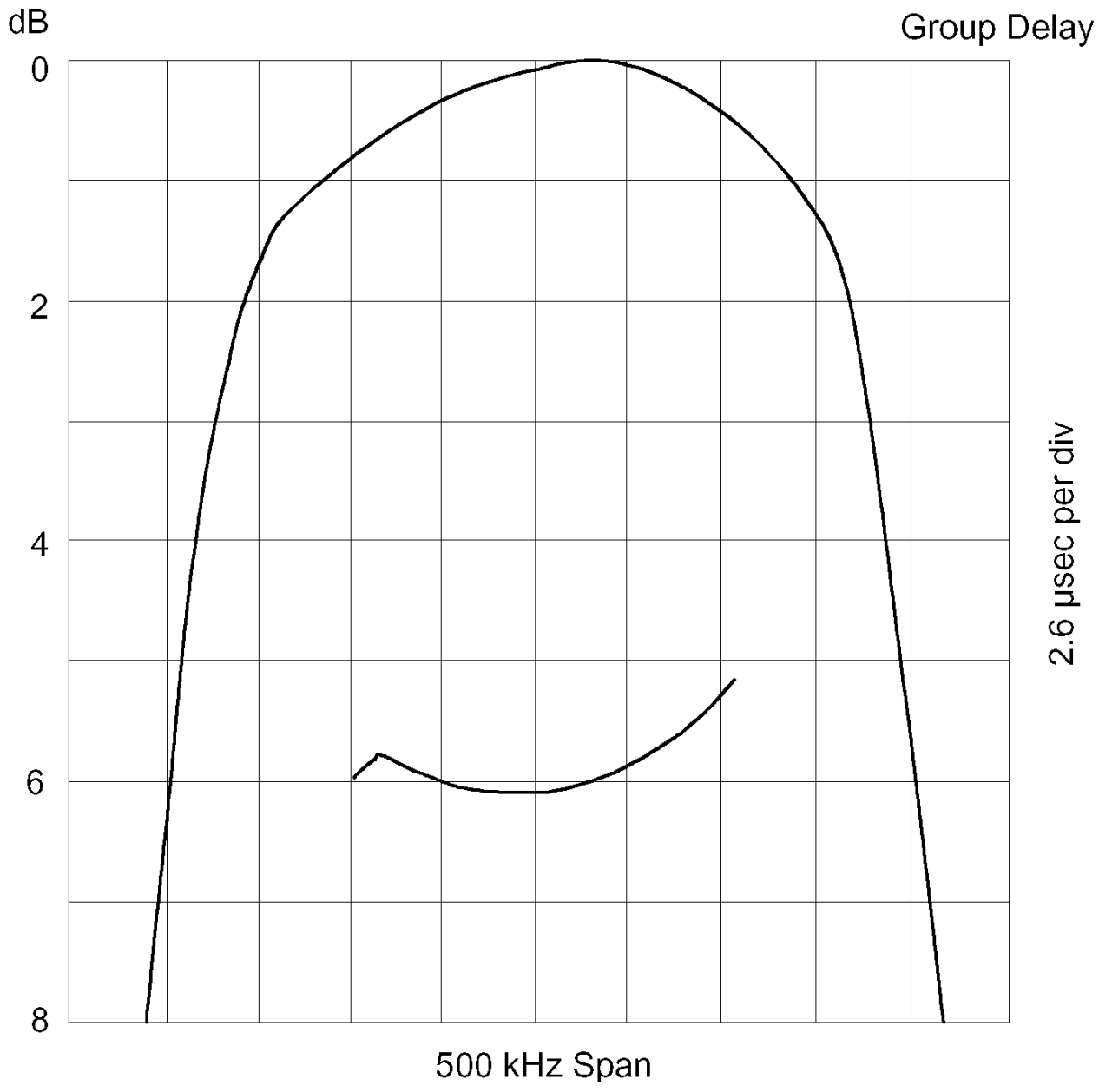
# SF1097A

## 71 MHz SAW Filter Wide Span Plot



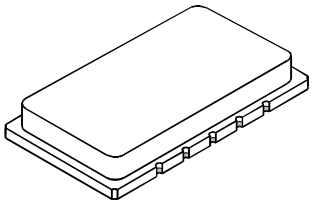
# SF1097A

## 71 MHz SAW Filter Narrow Span Plot



# SMP-08 Case

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



**Case Dimensions**

| Dimension | mm | | | Inches | | |
|---|---|---|---|---|---|---|
| | Min | Nom | Max | Min | Nom | Max |
| A | 13.69 | 14.00 | 14.30 | 0.539 | 0.551 | 0.563 |
| B | 7.70 | 8.00 | 8.30 | 0.303 | 0.315 | 0.327 |
| C | | 1.70 | 2.00 | | 0.067 | 0.079 |
| D | | 2.30 | | | 0.091 | |
| E | | 1.02 | | | 0.040 | |
| F | | 3.19 | | | 0.126 | |
| G | | 0.60 | | | 0.024 | |
| H | | 1.0 | | | 0.039 | |
| 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** |