

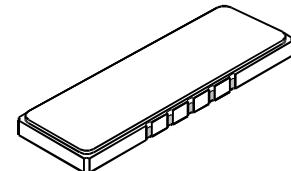


- **Designed for GSM BTS Receiver IF Applications**
- **Simple External Impedance Matching**
- **Hermetic SMP-87 Surface-Mount Case**
- **Unbalanced Input and Output**
- **Wider Temperature Version of SF1081A**
- **Complies with Directive 2002/95/EC (RoHS)**



# SF1081A-1

## 71.00 MHz SAW Filter



**SMP-87**

### Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
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	$f_C$			71.000		MHz
Passband	IL	1, 2		6	8.0	dB
	$BW_3$		±100	±140	±200	kHz
					1.5	dB <sub>P-P</sub>
	GDV			300	1000	ns <sub>P-P</sub>
	GD			2.8		μs
Rejection	fc-600 to fc-400 and fc+400 to fc+600 kHz	1, 2, 3	25	26		dB
	fc-1.0 to fc-0.6 and fc+0.6 to fc+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

### Electrical Connections

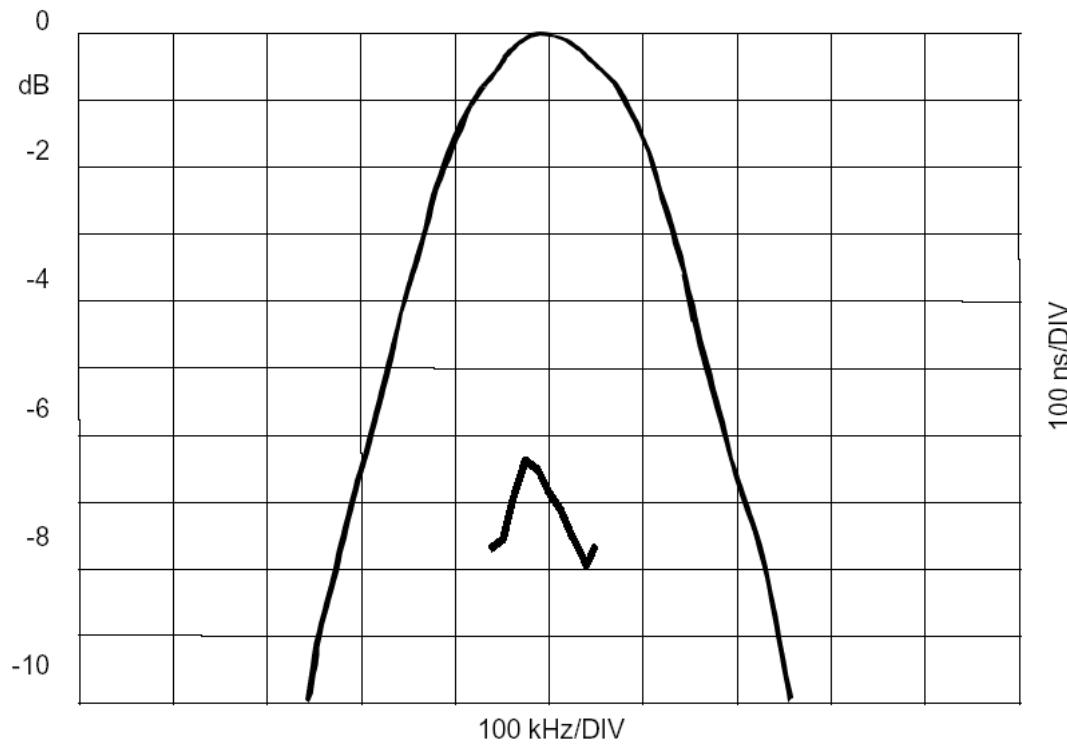
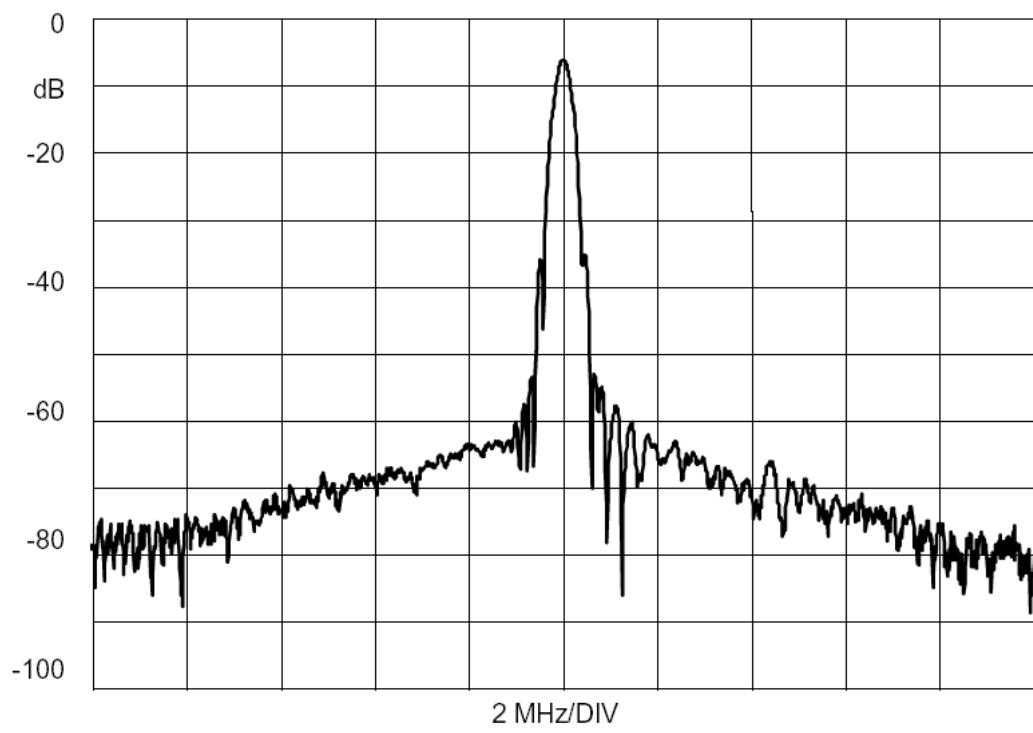
Connection	Terminals
Port 1Hot	1
Port 1 Gnd Return	10
Port 2 Hot	6
Port 2 Gnd Return	5
Case Ground	All Others

### 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.
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" 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. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.
9. ©Copyright 1999, RF Monolithics Inc.
10. Electrostatic Sensitive Device. Observe precautions for handling 

**71.000 MHz**

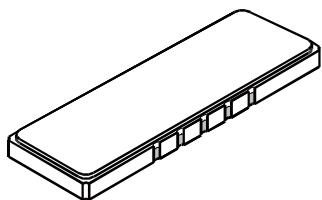
## **SAW Filter**



100 ns/DIV

## SMP-87 Case

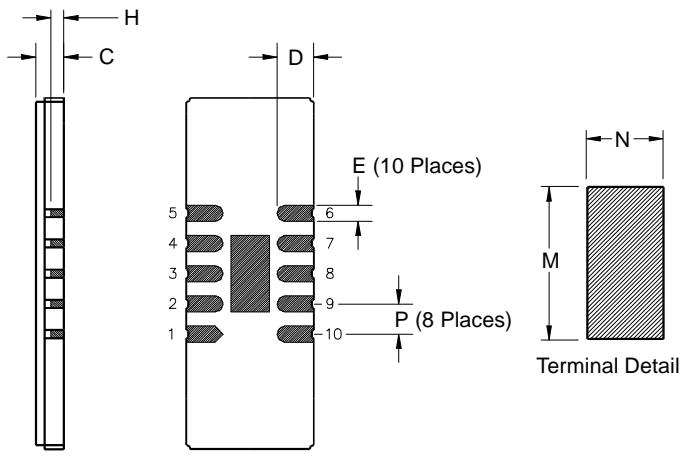
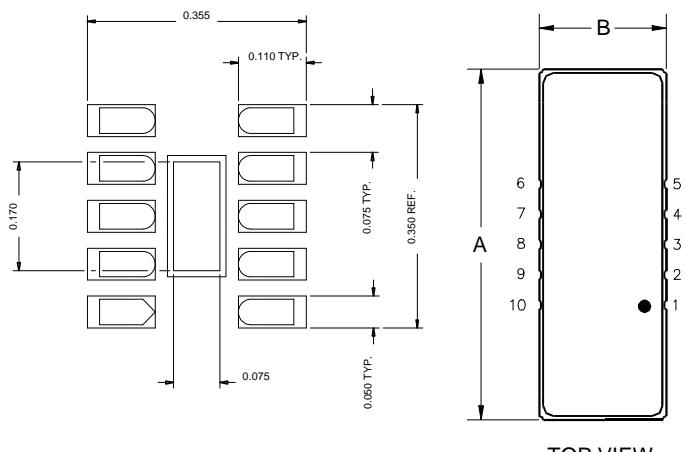
# 10-Terminal Ceramic Surface-Mount Case 22.1 x 8 mm Nominal Footprint



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	

Materials	
Solder Pad Termination	Au plating 30 - 60 $\mu$ inches (76.2-152 $\mu$ m) over 80-200 $\mu$ inches (203-508 $\mu$ m) Ni.
Lid	Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 $\mu$ inches Thick
Body	$\text{Al}_2\text{O}_3$ 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
<b>Single Ended Operation</b>		<b>Return is ground</b>
<b>Differential Operation</b>		<b>Return is hot</b>



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