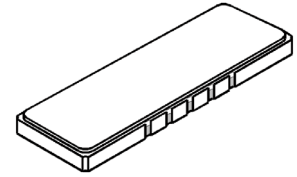


# SF1081A-1

## 71.00 MHz SAW Filter



SMP-87

- *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)*



### Absolute Maximum Ratings

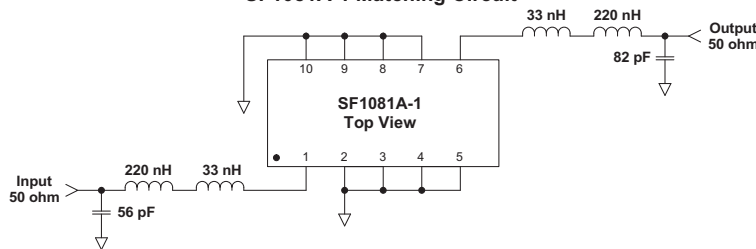
Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Maximum DC Voltage on any Non-ground Terminal	30	VDC
Storage Temperature Range	-40 to +85	°C
Suitable for Lead-free Soldering - Maximum Soldering Profile	260 °C for 30 s	

### 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	$BW_3$	$\pm 100$	$\pm 140$	$\pm 200$	kHz
	Amplitude Ripple over $f_C \pm 80$ kHz				1.5	dB <sub>P-P</sub>
	Group Delay Variation over $f_C \pm 50$ kHz	GDV		300	1000	ns <sub>P-P</sub>
	Absolute Group Delay	GD		2.8		$\mu$ 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 $\Omega$ 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

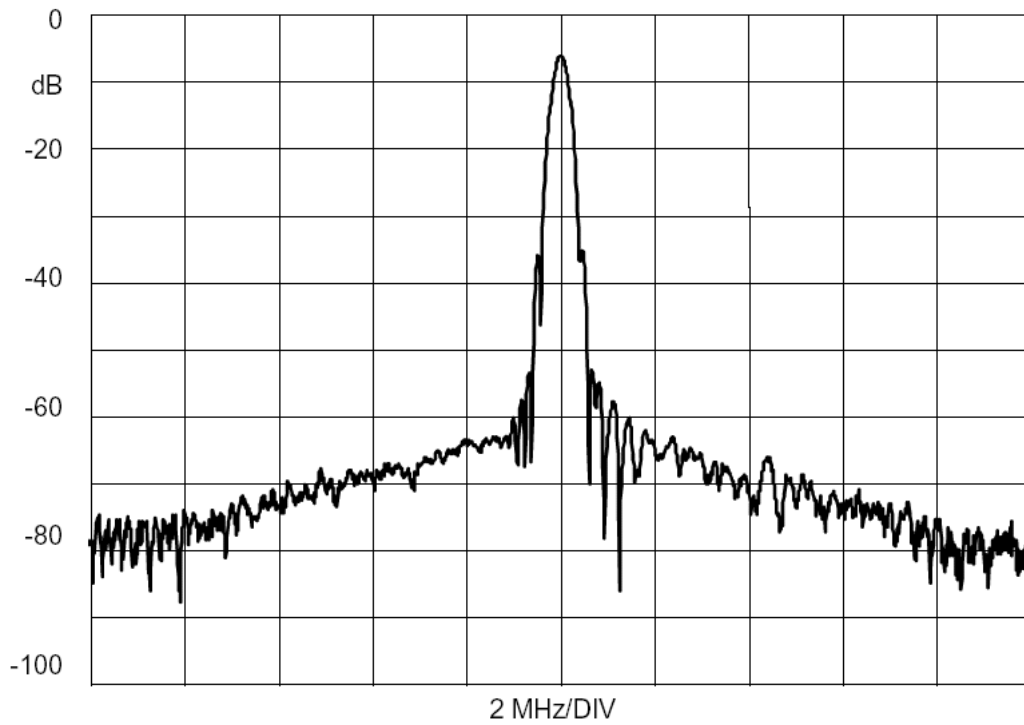


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

### NOTES:

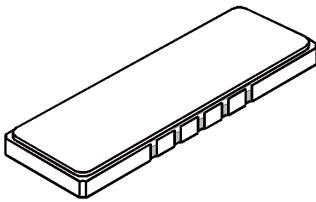
1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to a demonstration board with impedance matching to 50  $\Omega$  and measured with 50  $\Omega$  network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the 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. Murata, stylized Murata logo, and Murata N.A., Inc. are registered trademarks of Murata Manufacturing Co., Ltd..



# SMP-87 Case

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



Materials	
Solder Pad Plating	1.015 $\mu\text{m}$ Gold minimum over 2.030 $\mu\text{m}$ Nickel
Lid Plating	2.0 to 3.0 $\mu\text{m}$ Nickel
Body	$\text{Al}_2\text{O}_3$ 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

