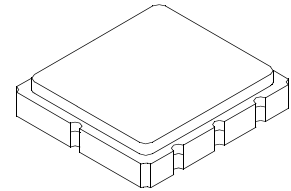




**SF1189B-1**

**280.00 MHz  
SAW Filter**



**SM5050-8**

- **Designed for WLAN IF Applications**
- **Low Insertion Loss**
- **5.0 x 5.0 x 1.7 mm Surface-Mount Case**
- **Single Ended or Differential Input and Output**
- **Differential Output**
- **Complies with Directive 2002/95/EC (RoHS)**



**Absolute Maximum Ratings**

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Max. DC voltage between any 2 terminals	0	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	$f_c$	1	280.0			MHz
Passband	Insertion Loss at $f_c$	IL		8.3	10	dB
		3 dB Passband	$BW_3$	1, 2	18.5	19.8
	Amplitude Ripple over $f_c \pm 9.0$ MHz			2.0	3.0	dB <sub>P-P</sub>
	Group Delay Variation over $f_c \pm 9.0$ MHz	GDV			60	125
Rejection	$f_c - 60$ to $f_c - 40$ MHz		1, 2, 3	40	46	dB
		$f_c - 40$ to $f_c - 22$ MHz		37	39	
		$f_c - 22$ to $f_c - 16$ MHz		30	39	
		$f_c + 16$ to $f_c + 22$ MHz		25	33	
		$f_c + 22$ to $f_c + 40$ MHz		34	36	
		$f_c + 40$ to $f_c + 60$ MHz		40	45	
Operating Temperature Range	$T_A$	1	-10		+85	°C

Differential Input / Output Impedance Match	External L-C
Case Style	SM5050-8 5 X 5 mm Nominal Footprint
Lid Symbolization (YY=year, WW=week, S=shift)	457, YYWWS

**Electrical Connections**

Connection		Terminals
Port 1	Single Ended Input	3
Port 2	Differential Output	6,7
	Ground	All others

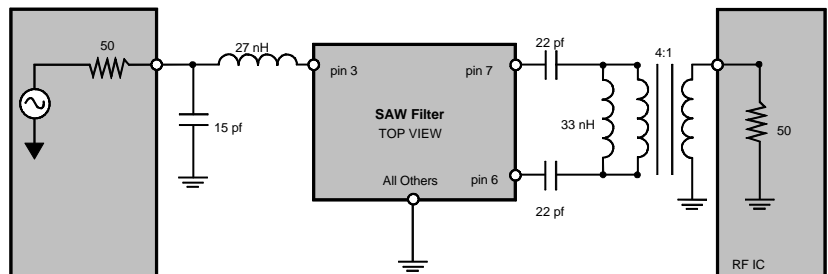


figure 1

**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  $\Omega$  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" 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



## Frequency Characteristics (For Single in, Balance out Type):

Note: Insertion loss of balun transformers is around -0.7dB

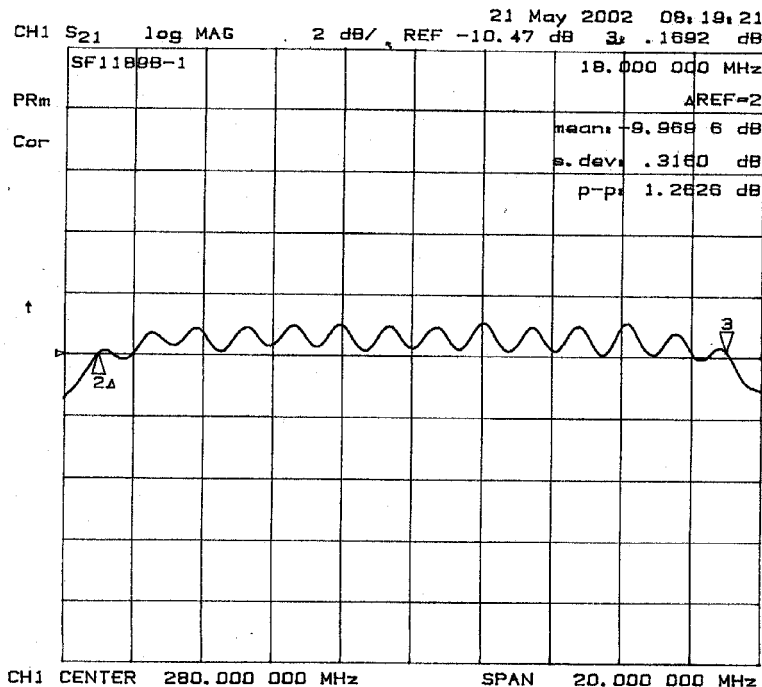
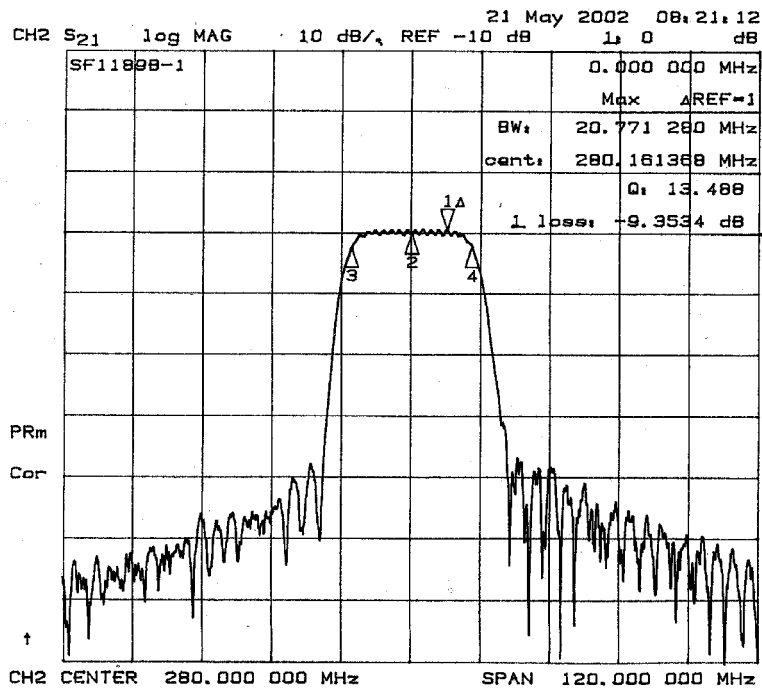


Fig-1 S21 Response

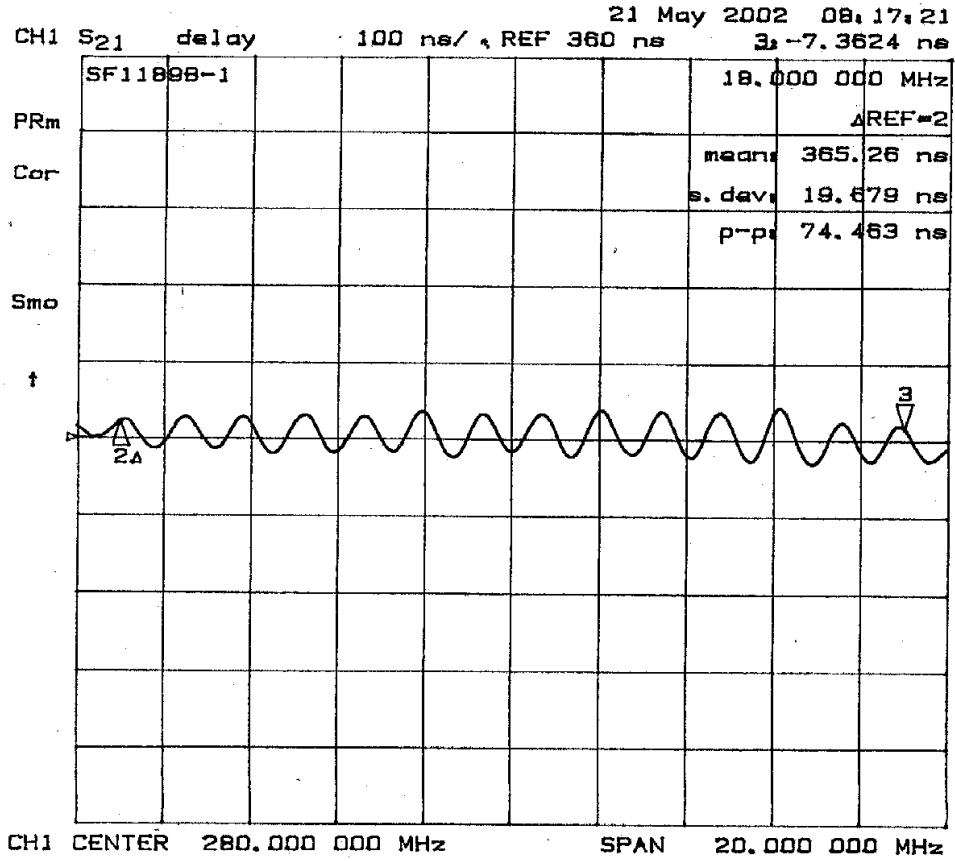
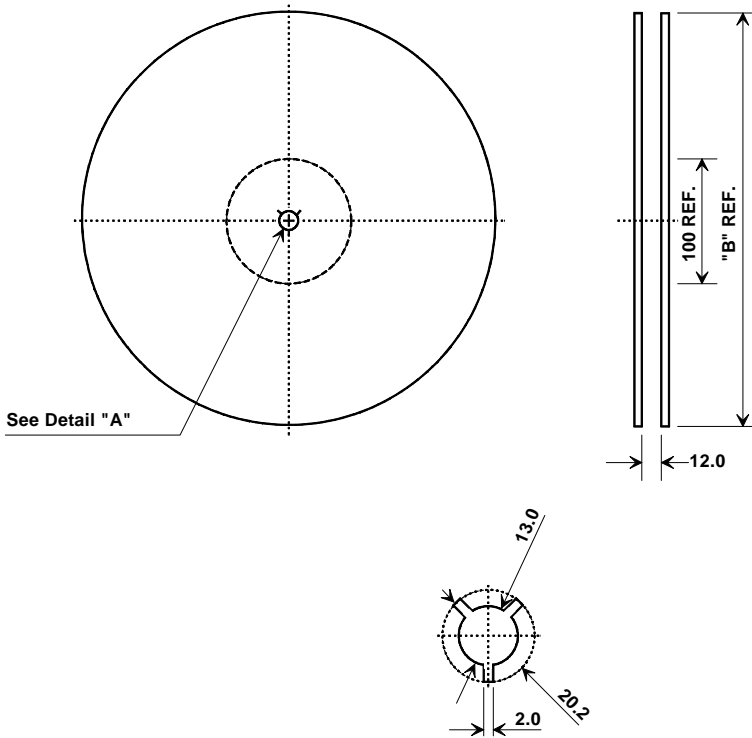


Fig-2 Group Delay

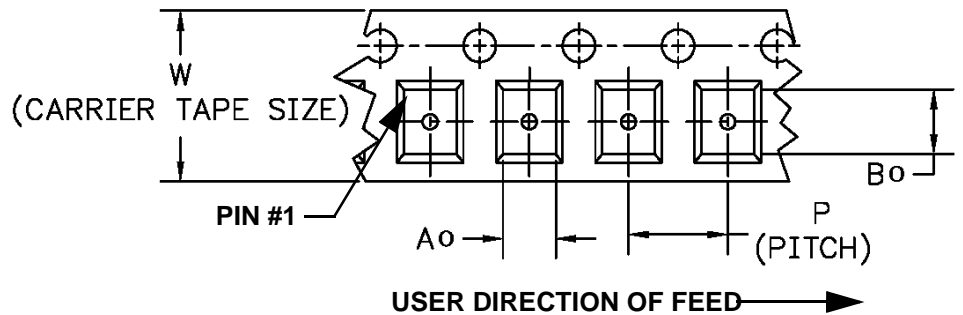
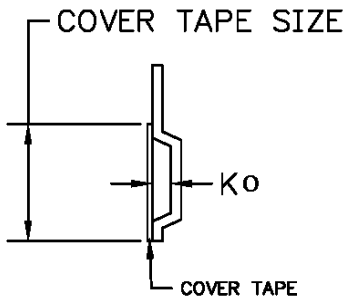
## Tape and Reel Specifications



"B" Nominal Size		Quantity Per Reel
Inches	millimeters	
7	178	500
13	330	3000

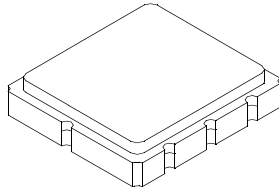
## COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
<b>Ao</b>	5.3 mm
<b>Bo</b>	5.3 mm
<b>Ko</b>	2.0 mm
<b>Pitch</b>	8.0 mm
<b>W</b>	12.0 mm



# SM5050-8 Case

## 8-Terminal Ceramic Surface-Mount Case 5.0 X 5.0 mm Nominal Footprint



### Case Dimensions

Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	4.8	5.0	5.2		0.1968	
B	4.8	5.0	5.2		0.1968	
C			1.7			0.0669
D		2.08			0.0818	
E		1.17			0.046	
F		0.64			0.0252	
G	2.39	2.54	2.69		0.100	

Materials	
Solder Pad Termination	Au plating 30 - 60 ulnches (76.2-152 uM) over 80-200 ulnches (203-508 uM) Ni.
Lid	Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 ulnches Thick
Body	Al <sub>2</sub> O <sub>3</sub> Ceramic
Pb Free	

### Electrical Connections

Connection		Terminals
Port 1	Input	3
Port 2	Differential Output	6,7
	Ground	All others
<b>Single Ended Operation</b>		<b>Return is ground</b>
<b>Differential Operation</b>		<b>Return is hot</b>
Dot indicates Pin 1		

TOP VIEW

BOTTOM VIEW

