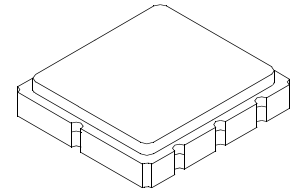




SF2172C

280 MHz SAW Filter



SM5050-8

- Low Insertion Loss
- 5.0 X 5.0 mm Surface-Mount Case
- Single Ended Input and Output
- Complies with Directive 2002/95/EC (RoHS)



Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+13	dBm
Maximum DC Voltage Between any Two Terminals	30	VDC
Storage Temperature Range	-40 to +85	°C
Suitable for Lead-free Soldering - Maximum Soldering Temperature	260°C for 30 s	

Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Nominal Center Frequency	f_C	1		280		MHz
Insertion Loss	IL_{MIN}	1		8.8	11	dB
Passband Ripple, $f_C \pm 7.5$ MHz		1		0.4	1.0	dB _{p,p}
Passband Rippl2, $f_C \pm (7.5 \text{ to } 8.5)$ MHz				0.7	2.0	dB _{p,p}
1 dB Bandwidth	BW_1	1	15	19.8		MHz
Group Delay Deviation, $f_C \pm 7.5$ MHz		1		24	50	ns
40 dB Bandwidth				29.5	31.0	MHz
Attenuation Referenced to IL_{MIN}						
$F_c \pm(15 \text{ to } 17)$ MHz			10	40		dB
$F_c \pm(17 \text{ to } 100)$ MHz			40	45		dB
Operating Temperature Range			-40		85	°C
Case Style			SM5050-8 5 x 5 mm Nominal Footprint			
Lid Symbolization (Y=year, WW=week, S=shift)			RFM 852 YWWS			



CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

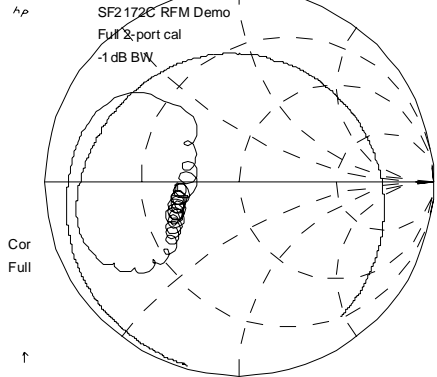
Notes:

1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to 50 Ω and measured with 50 Ω network analyzer.
2. 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.
3. The design, manufacturing process, and specifications of this filter are subject to change.
4. Tape and Reel Standard ANSI / EIA 481.
5. 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.
6. US and international patents may apply.
7. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.

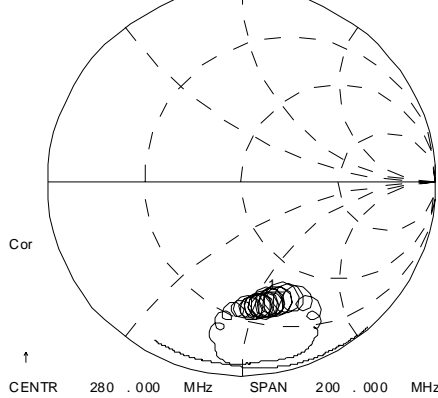
Frequency Response and Smith Charts

24 Oct 2008 08:05:05

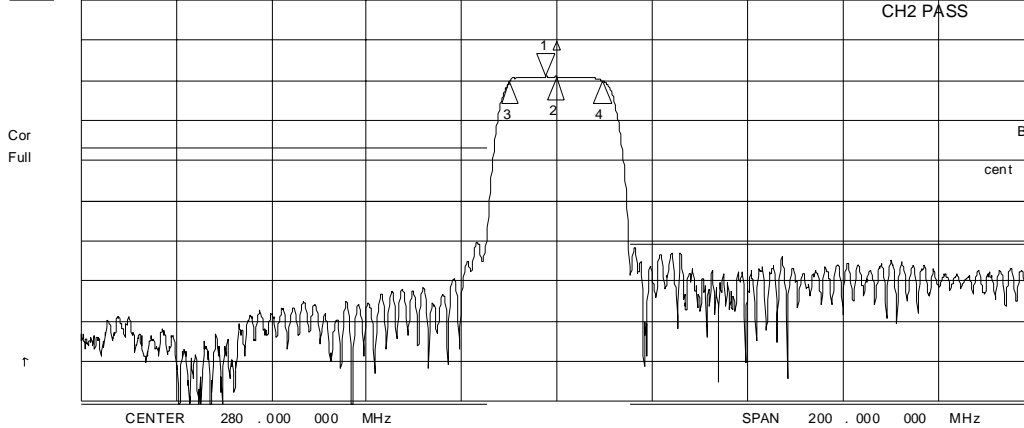
CH1 S11 1 UFS
 1: 24.943 Ω -10.939 Ω 51.960 pF
 280.000 000 MHz



CH3 S22 1 UFS
 1: 21.977 Ω -59.455 Ω 9.5603 pF
 280.000 000 MHz



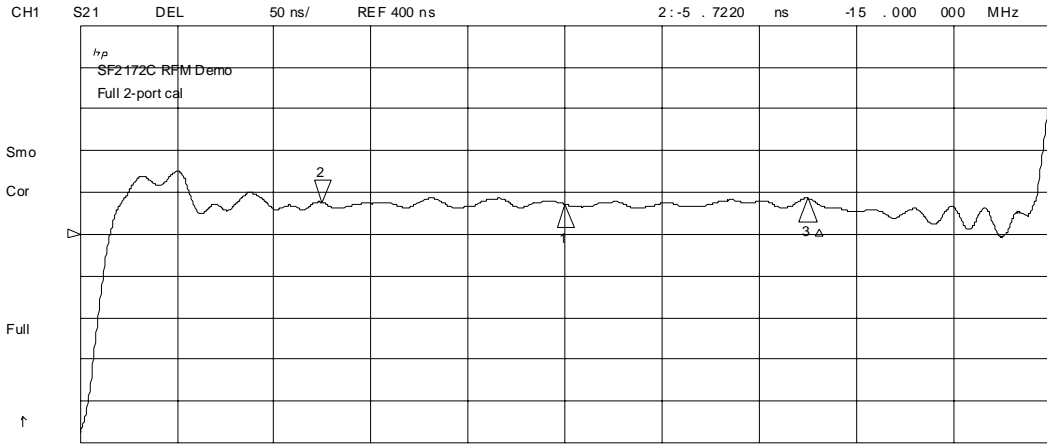
CH2 S21 LOG 10 dB/ REF -40 dB 1: 0.0000 dB 0.000 000 MHz



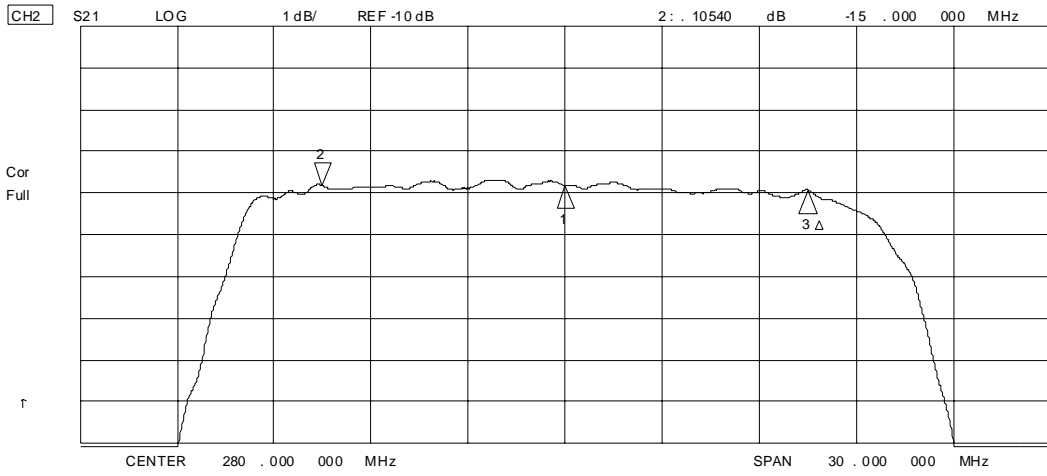
CH2 Markers
 Max Δ REF=1
 BW: 19.478600 MHz
 cent: 279.799573 MHz
 Q: 14.364
 loss: -9.0532 dB

Passband Response

24 Oct 2008 08:16:12



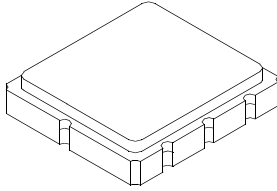
CH1 Markers
Δ REF=3
mean : 436 . 23 ns
s . dev : 3 . 1525 ns
p-p : 12 . 258 ns



CH2 Markers
Δ REF=3
mean : -8 . 8777 dB
s . dev : . 09710 dB
p-p : . 42720 dB

SM5050-8 Case and Test Circuit

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



Case Dimension

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	

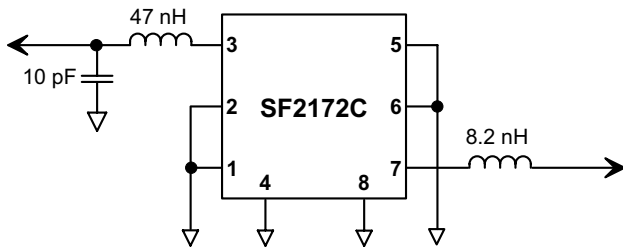
Electrical Connection

Connection	Terminals
Port 1	Input 3
Port 2	Output 7
	Ground All others

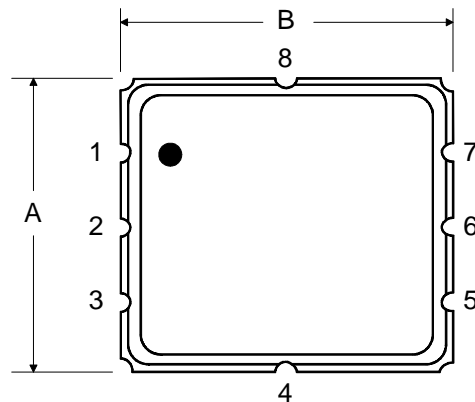
Dot indicates Pin 1

Materials	
Solder Pad Plating	0.3 to 1.0 μm Gold over 1.27 to 8.89 μm Nickel
Lid Plating	2.0 to 3.0 μm Nickel
Body	Al_2O_3 Ceramic
Pb Free	

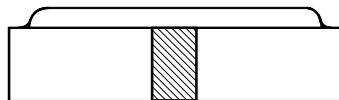
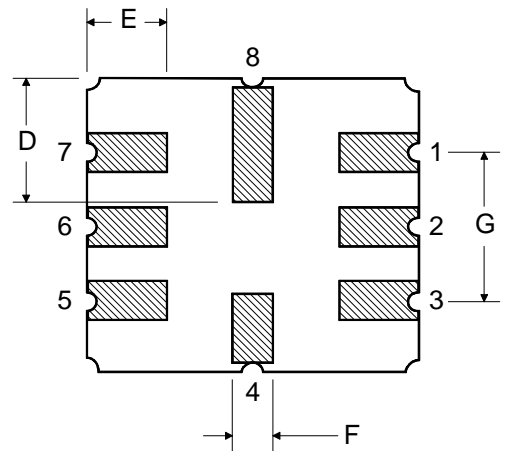
SF2172C Test Circuit



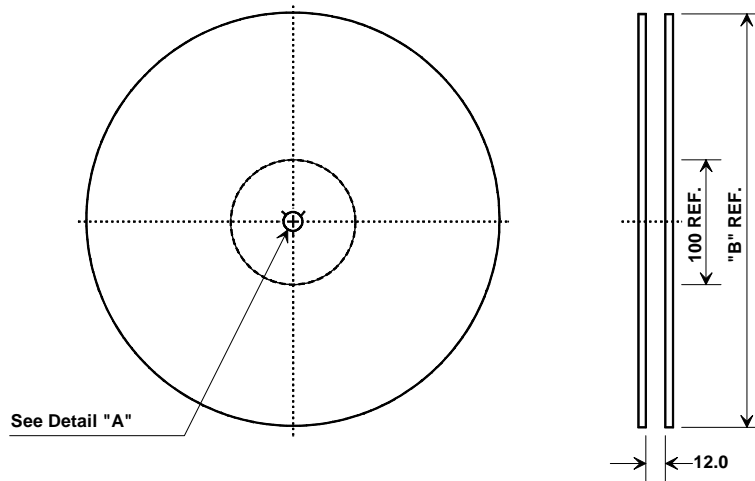
TOP VIEW



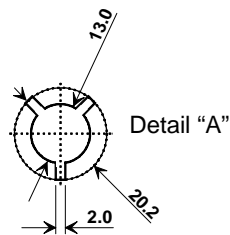
BOTTOM VIEW



Tape and Reel Specifications



"B" Nominal Size		Quantity Per Reel
Inches	Millimeters	
7	178	500 pcs
13	330	3,000 pcs



COMPONENT ORIENTATION

