



**SF2037C**

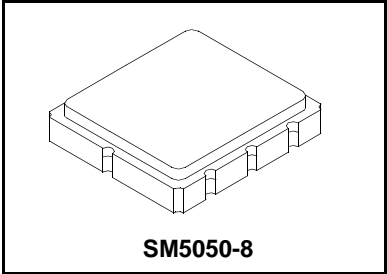
**76.500 MHz  
SAW Filter**

- *Designed for SDARS IF Receiver*
- *5.0 X 5.0 mm Surface-mount Case*
- *Differential or Single-ended Input and Output*
- *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 in Tape and Reel	-40 to +85	°C
Maximum Soldering Profile	265 °C for 10 s	



**Electrical Characteristics**

Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	$f_c$	1		76.500		MHz
Insertion Loss	IL	1		10.0	12.0	dB
1 dB Bandwidth	$BW_1$	1	3.8	4.4		MHz
15 dB Bandwidth	$BW_{15}$	1		7.1	7.4	MHz
30 dB Bandwidth	$BW_{30}$	1		8.2	8.5	MHz
Amplitude Ripple, $f_c \pm 1.9$ MHz		1		0.7	1.10	dB <sub>p-p</sub>
Group Delay Ripple, $f_c \pm 1.9$ MHz	GDV	1		55	150	ns <sub>p-p</sub>
Rejection:						
50 to 70.44 MHz		1, 3	34	41		dB
70.44 to 72.04 MHz			31	37		
81.26 to 82.56 MHz			36	42		
82.56 to 86.50 MHz			36	43		
86.5 to 91.50 MHz			40	46		
91.50 to 100.00 MHz			42	51		
Operating Temperature Range	$T_A$	1	-40		+85	°C
Frequency Temperature Coefficient	FTC			-18		ppm/°C
Differential Input				175 ohms		
Differential Output				1000 ohms		
Case Style		6	SM5050-8 5 x 5 mm Nominal Footprint			
Lid Symbolization (Y=year, WW=week, S=shift) See note 4			RFM 912 YWWS			

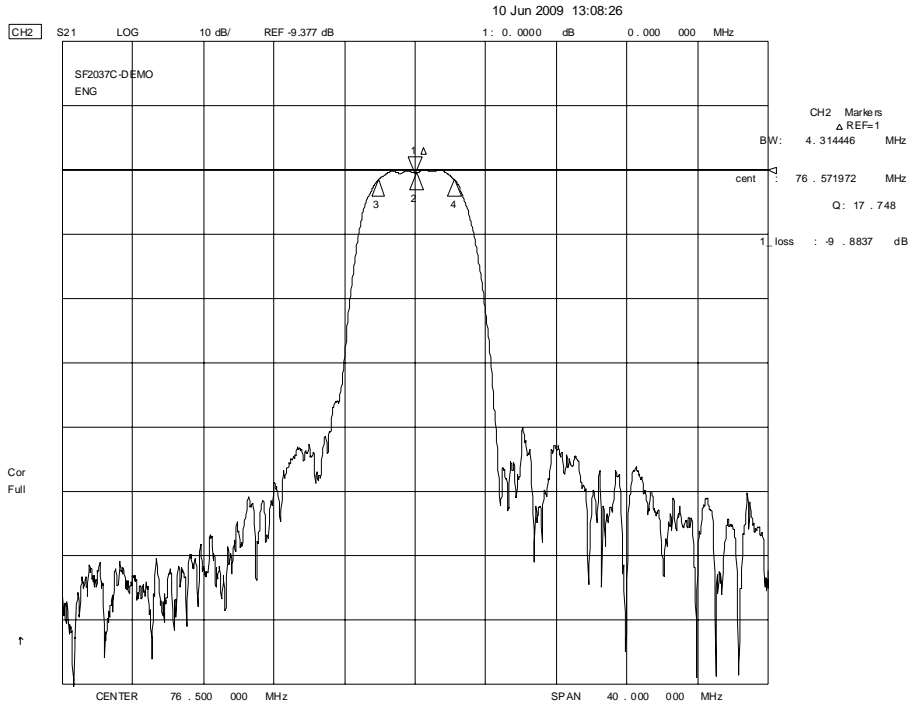


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

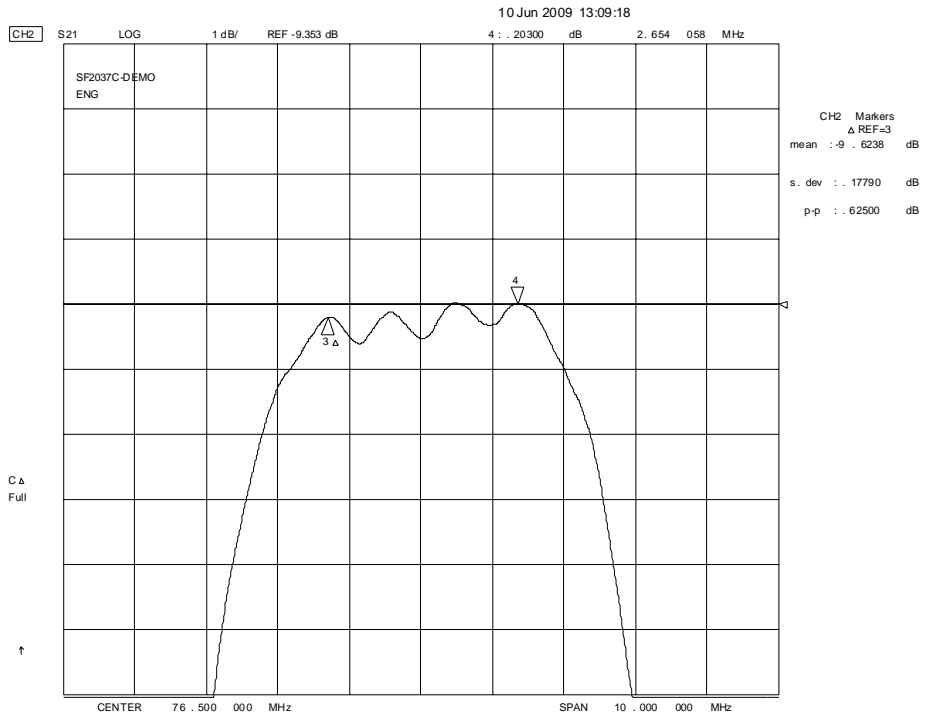
**Notes:**

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  $\Omega$  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. Tape and Reel Standard ANSI / EIA 481.
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. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.

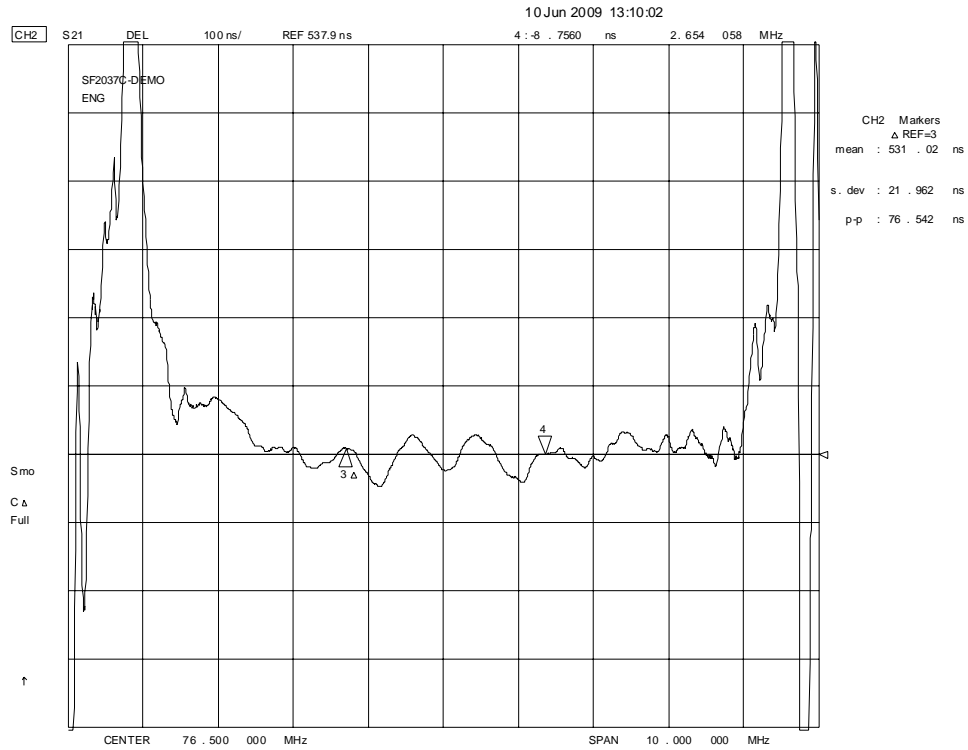
# Filter Amplitude Response Plot, 56.5 to 96.5 MHz



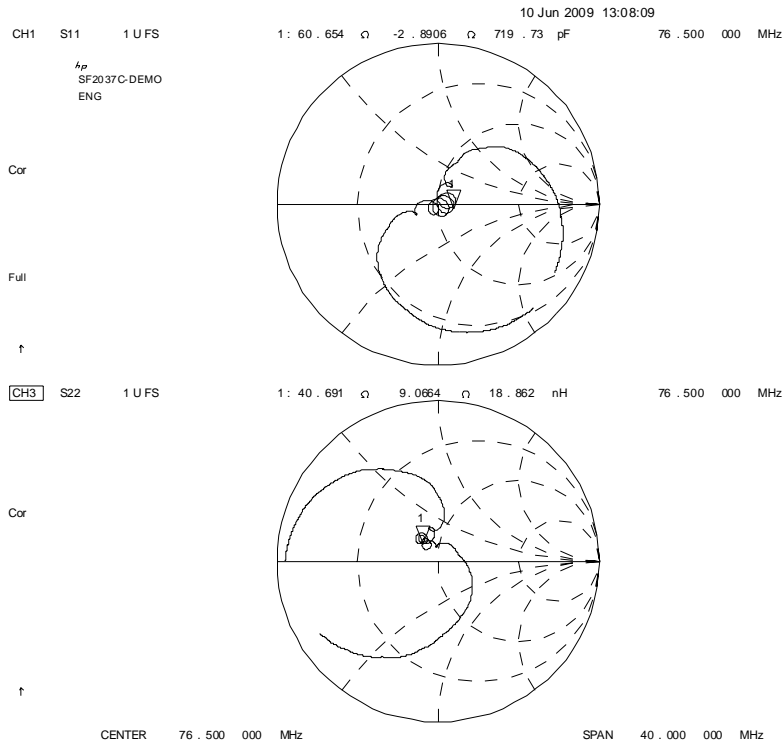
# Filter Passband Amplitude Plot



# Filter Passband Group Delay Plot



# Filter Input and Output Impedance Plots

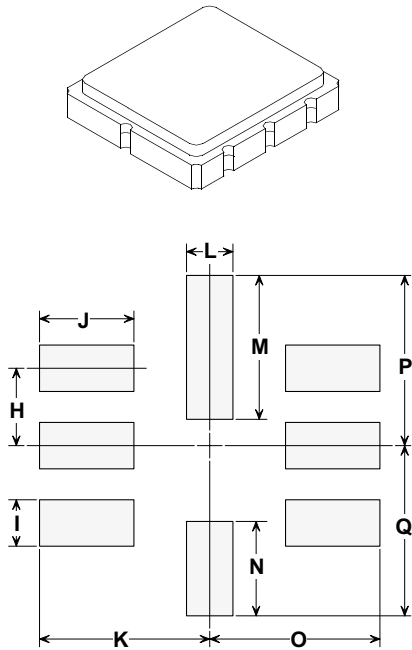


# SM5050-8 Surface-Mount 8-Terminal Ceramic Case

## 5.0 X 5.0 mm Nominal Footprint

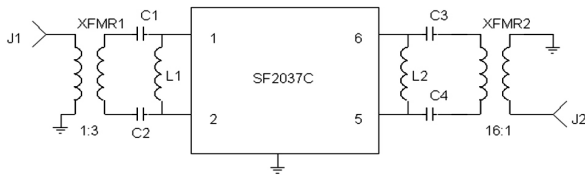
### Case Dimensions

Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	4.80	5.00	5.20	0.189	0.197	0.205
B	4.80	5.00	5.20	0.189	0.197	0.205
C	1.30	1.50	1.70	0.050	0.060	0.067
D	1.98	2.08	2.18	0.078	0.082	0.086
E	1.07	1.17	1.27	0.042	0.046	0.050
F	0.50	0.64	0.70	0.020	0.025	0.028
G	2.39	2.54	2.69	0.094	0.100	0.106
H		1.27			0.050	
I		0.76			0.030	
J		1.55			0.061	
K		2.79			0.110	
L		0.76			0.030	
M		2.36			0.093	
N		1.55			0.061	
O		2.79			0.110	
P		2.79			0.110	
Q		2.79			0.110	



### PCB Footprint

SF2037C Demo Board



- C1,C2      501-0621-090 9pF 0603
- C3,C4      501-0621-180 18pF 0603
- L1,L2      501-1068-331 330nH 0603CS
- XFMR1      501-0912-003 3:1 Transformer
- XFMR2      501-0912-004 16:1 Transformer
- PCB        401-1706-001 5x5 PCB pins 1, 2 & 5, 6
- J1, J2      500-1241-001 SMA e-snap fem gold conn.

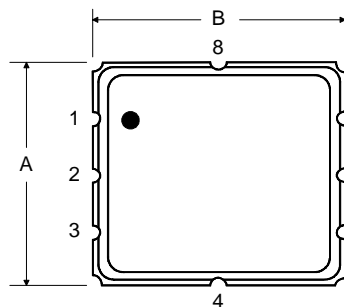
### Case Materials

Materials	
Solder Pad Plating	0.3 to 1.0 $\mu$ m Gold over 1.27 to 8.89 $\mu$ m Nickel
Lid Plating	2.0 to 3.0 $\mu$ m Nickel
Body	Al <sub>2</sub> O <sub>3</sub> Ceramic
	Pb Free

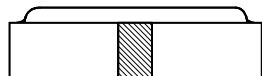
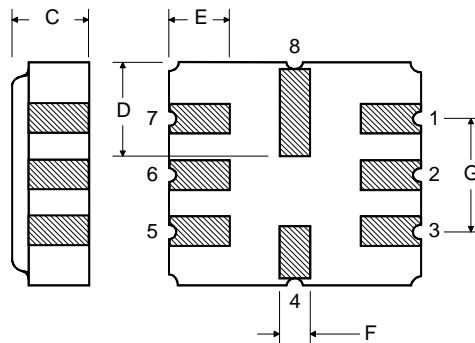
### Electrical Connections

Connection		Terminals
Port 1	Differential Input	1, 2
Port 2	Differential Output	5, 6
	Ground	All others
Single-ended Operation		Return is ground
Differential Operation		Return is hot
Dot indicates Pin 1		

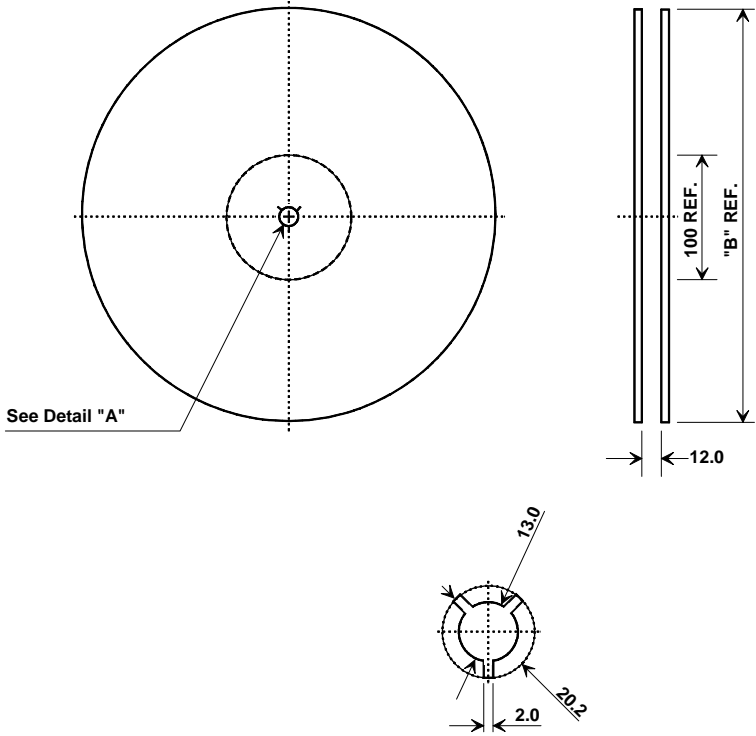
### TOP VIEW



### BOTTOM VIEW



# 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	
Ao	5.3 mm
Bo	5.3 mm
Ko	2.0 mm
Pitch	8.0 mm
W	12.0 mm

