

- **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)**

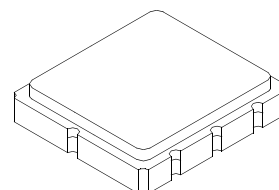


Absolute Maximum Ratings

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	

SF2037C

76.500 MHz SAW Filter



SM5050-8

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 _{P-P}
Group Delay Ripple, $f_C \pm 1.9$ MHz	GDV	1		55	150	ns _{P-P}
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			

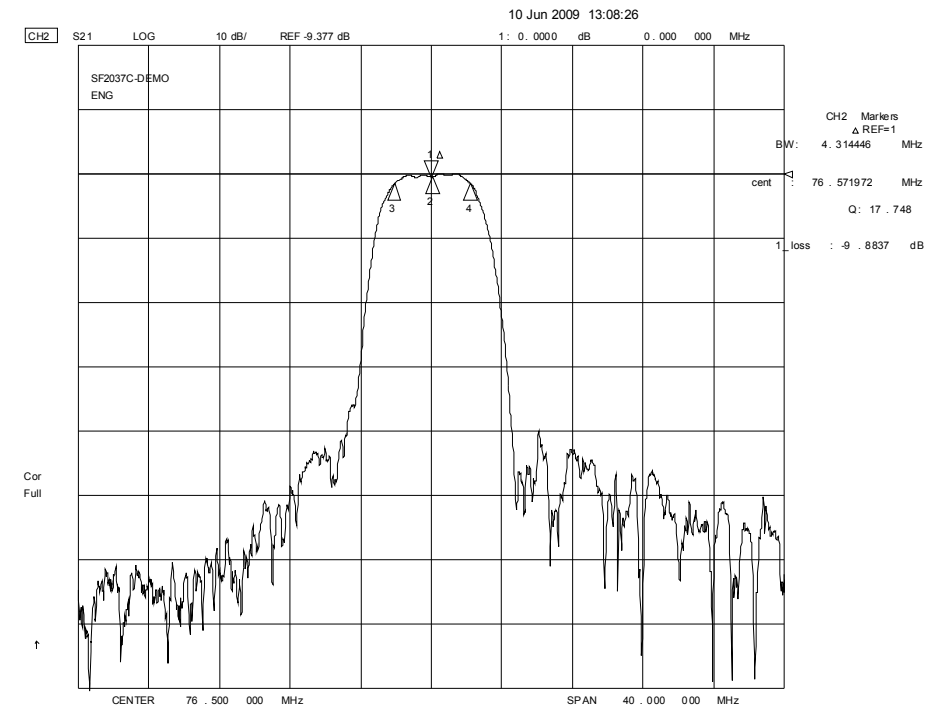


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

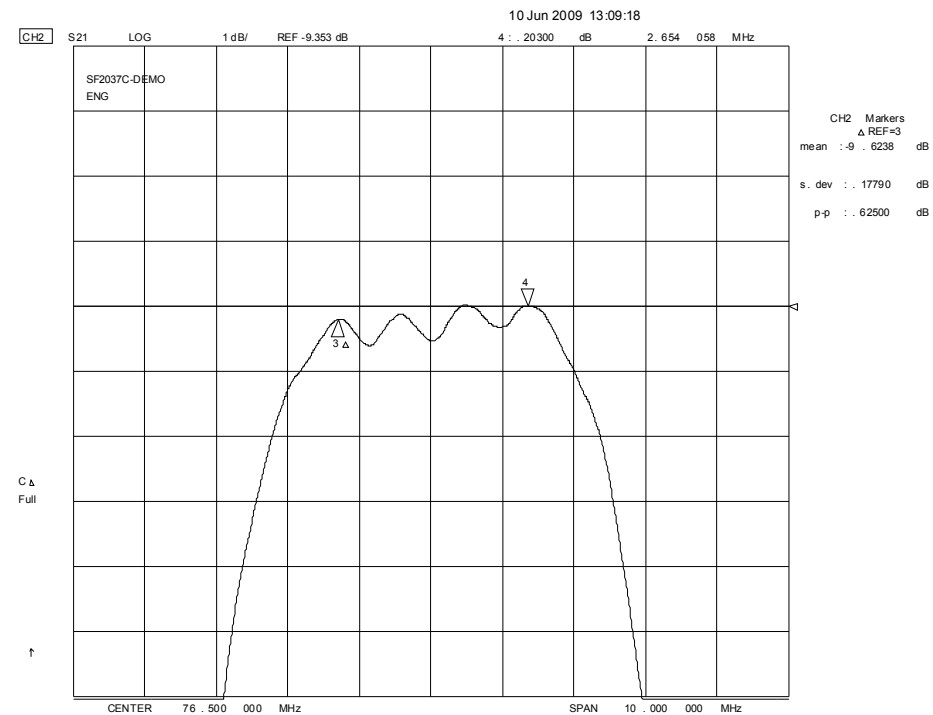
NOTES:

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 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. 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. Murata, stylized Murata logo, and Murata N.A., Inc. are registered trademarks of Murata Manufacturing Co., Ltd.

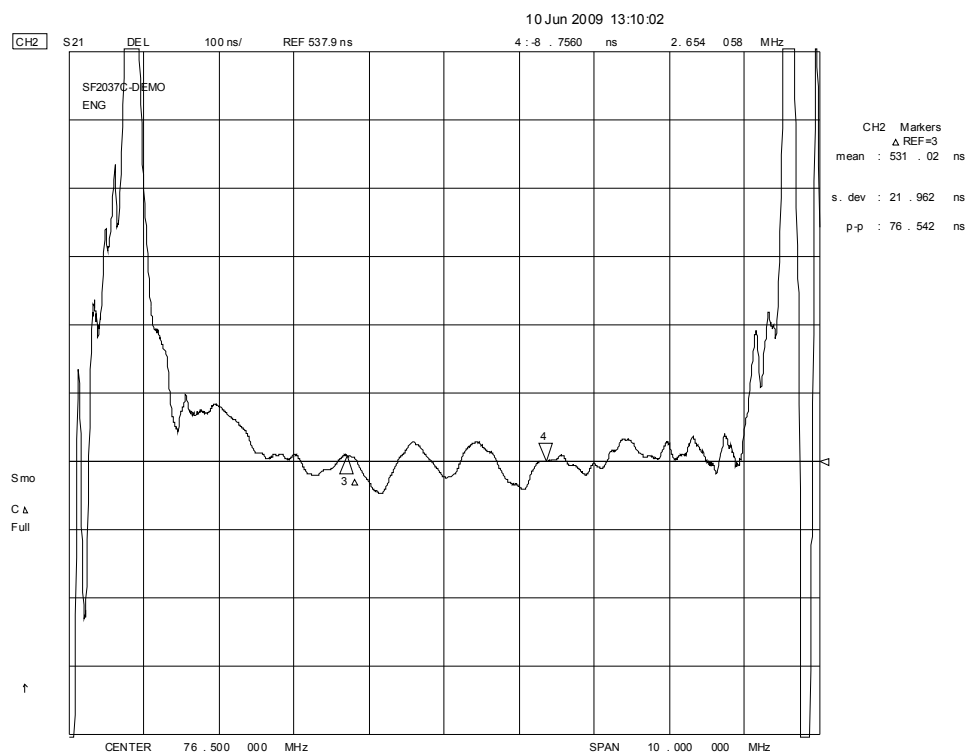
Filter Amplitude Response Plot, 56.5 to 96.5 MHz



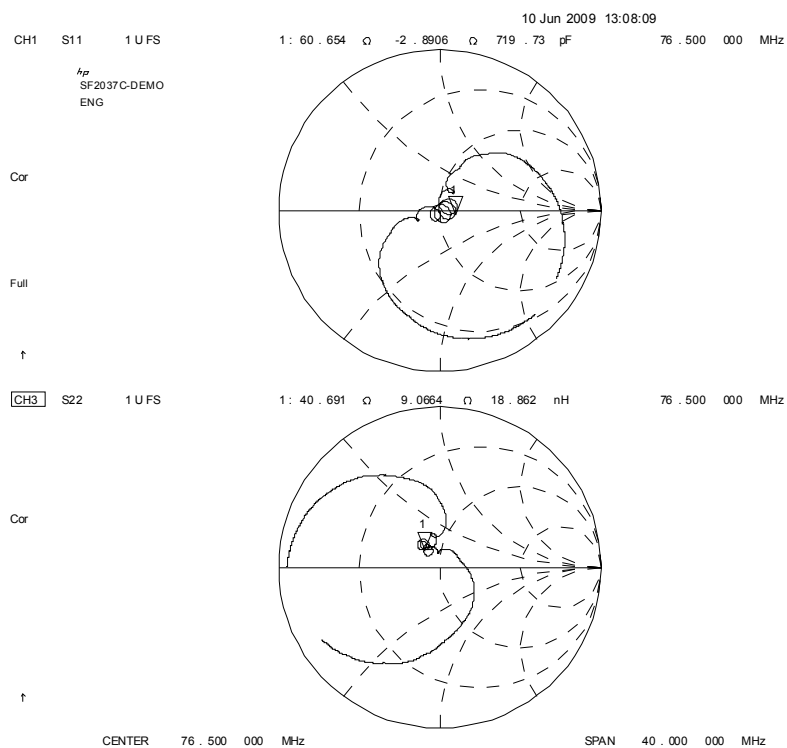
Filter Passband Amplitude Plot



Filter Passband Group Delay Plot



Filter Input and Output Impedance Plots

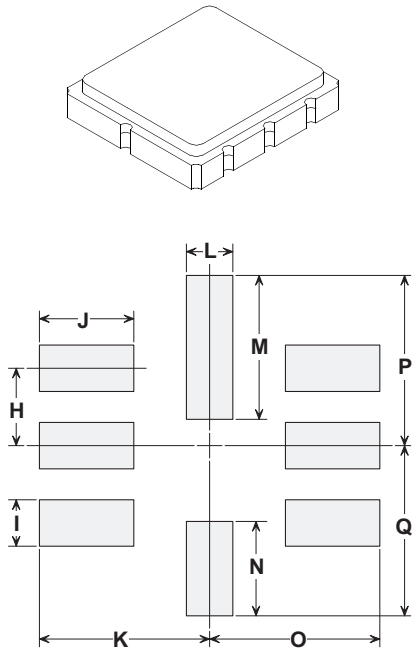


SM5050-8 Surface-Mount 8-Terminal Ceramic Case

5.0 X 5.0 mm Nominal Footprint

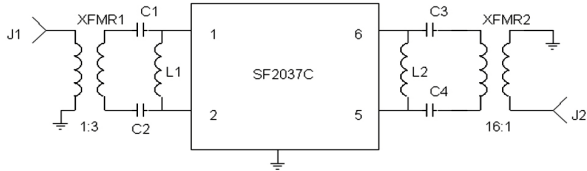
Case Dimensions

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.

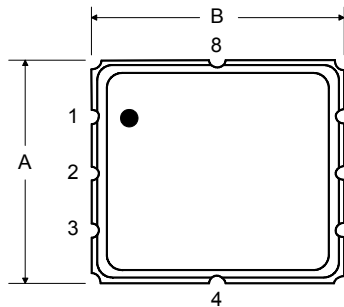
Case Materials

Materials	
Solder Pad Plating	0.3 to 1.0 μ m Gold over 1.27 to 8.89 μ m Nickel
Lid Plating	2.0 to 3.0 μ m Nickel
Body	Al ₂ O ₃ Ceramic
Pb Free	

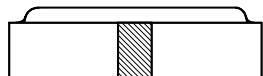
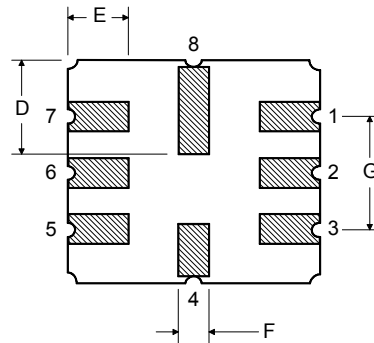
Electrical Connections

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		

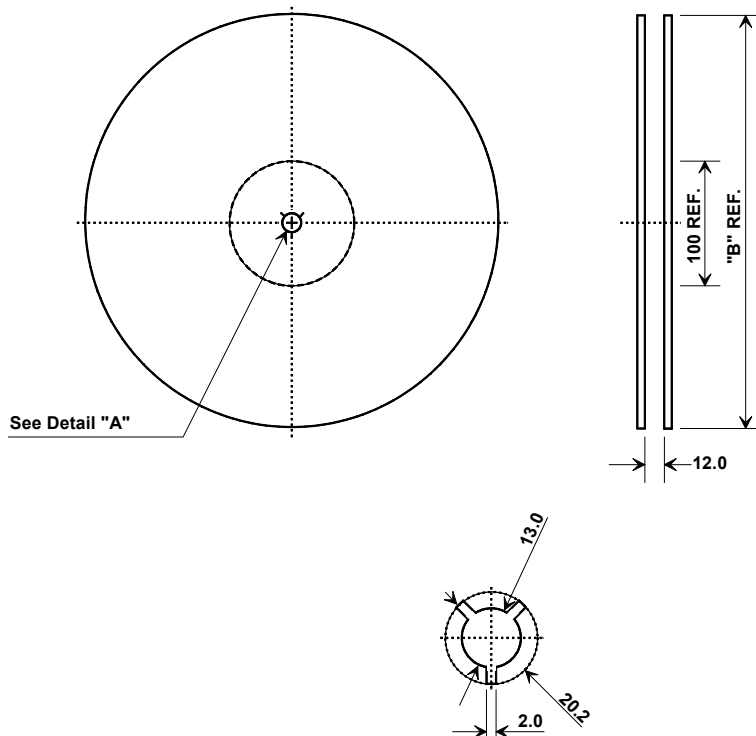
TOP VIEW



BOTTOM VIEW



Tape and Reel Specifications



"B"		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

