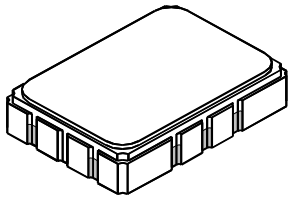
SF2242B

40 MHz SAW Filter

- ***Compact 40 MHz SAW Filter Design***
- ***Hermetic 5 x 7 mm Surface-mount Case***
- ***Complies with Directive 2002/95/EC (RoHS)***



SMP-03

Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
DC Voltage on any Non-ground Terminal	5	VDC
Storage Temperature Range in Tape and Reel	-40 to +85	°C
Suitable for Lead-free Soldering - Maximum Soldering Profile	260 °C for 30 s	

Electrical Characteristics

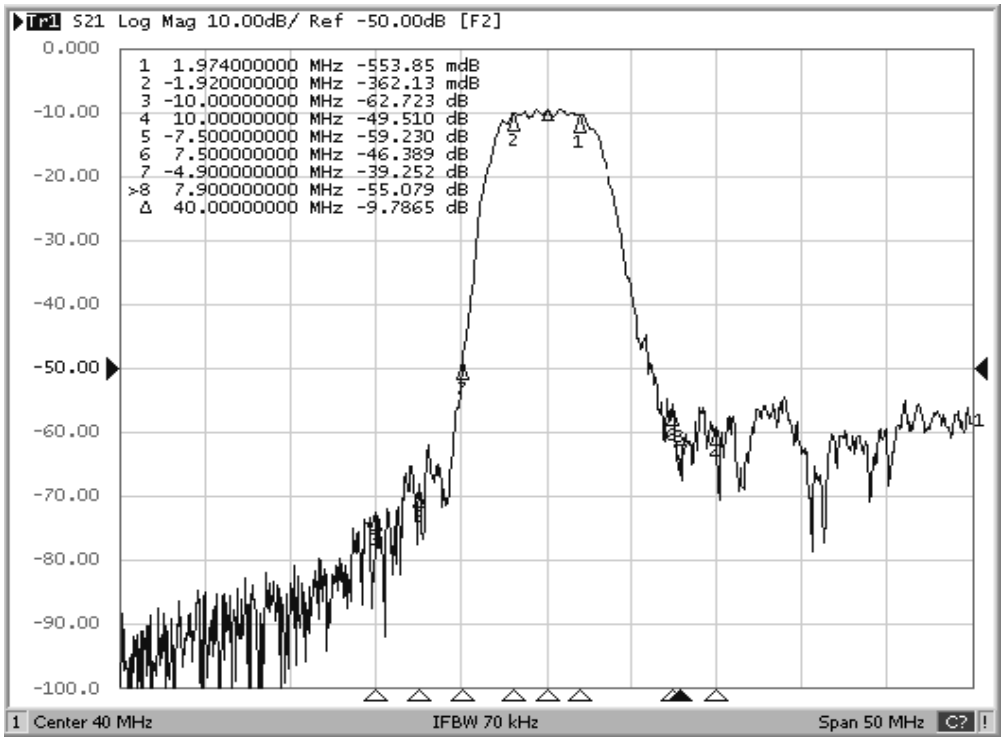
Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	f_C	1		40		MHz
Minimum insertion Loss	IL_{MIN}	1, 2		9.5	12.0	dB
3 dB Bandwidth			3.5	5.0		MHz
Amplitude Ripple, (f_C - 1.75 MHz to f_C + 1.75 MHz)				1.4	2.0	dB_{P-P}
Group Delay Ripple, (f_C - 1.75 MHz to f_C + 1.75 MHz)				190	250	ns_{P-P}
Attenuation Relative to IL_{MIN}:						dB
f_C - 5 MHz to f_C + 5 MHz			20	26		
27.5 to 32.5 MHz			31	40		
47.5 to 52.5 MHz			31	46		
0 to 30.0 MHz			35	64		
50.0 to 70.0 MHz			35	40		
Operating Temperature Range	T_A	1	-20		+85	°C

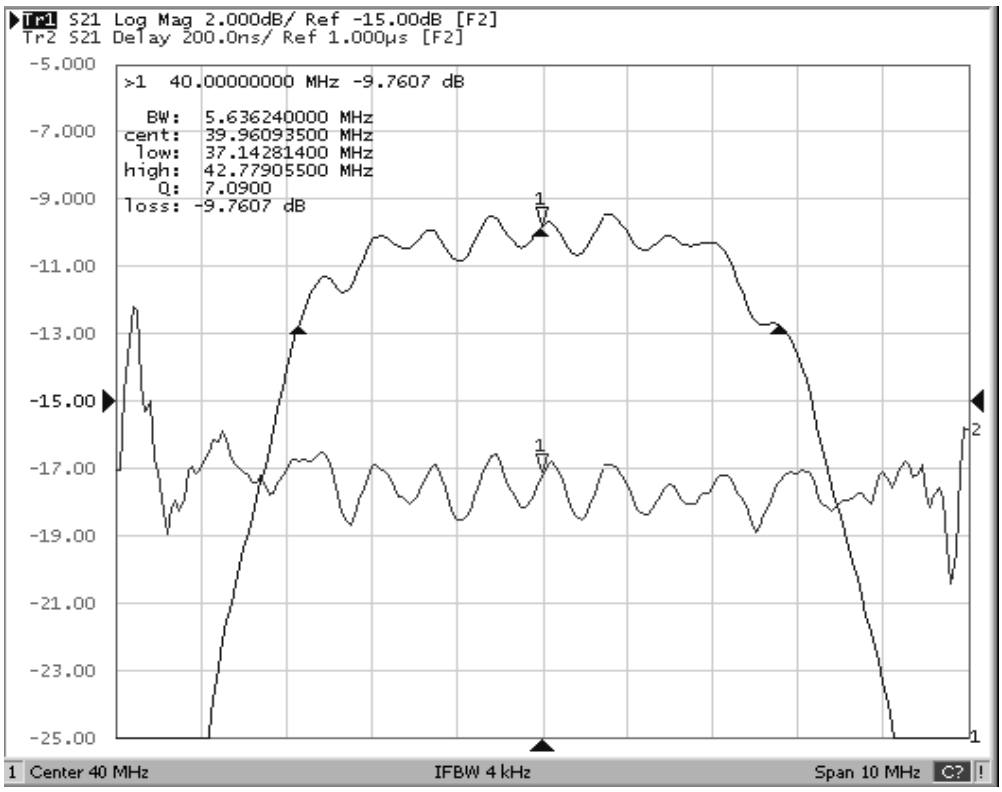
Terminating Source Impedance (through matching network)		Z_S = 50 ohms
Terminating Source Impedance (through matching network)		Z_L = 50 ohms
Case Style	6	SMP-03 7 x 5 mm Nominal Footprint
Lid Symbolization (YY = year, WW = week)		RFM/SF2242B/YYWW

Notes:

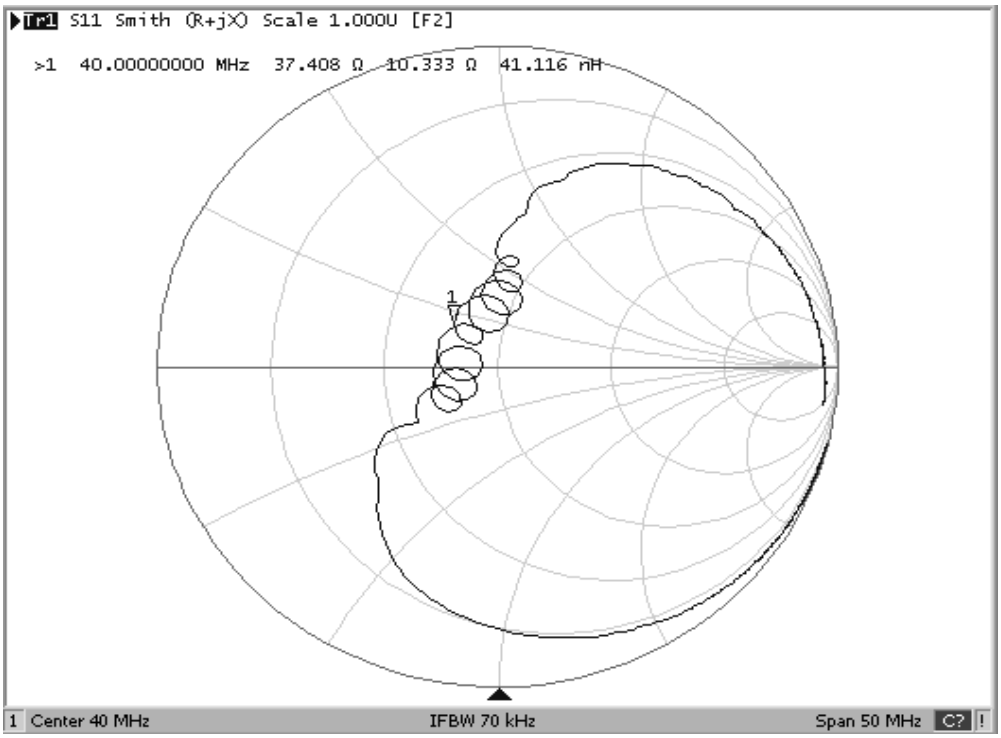
1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to 50 Ω and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency, fc.
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. Electrostatic Sensitive Device. Observe precautions for handling.

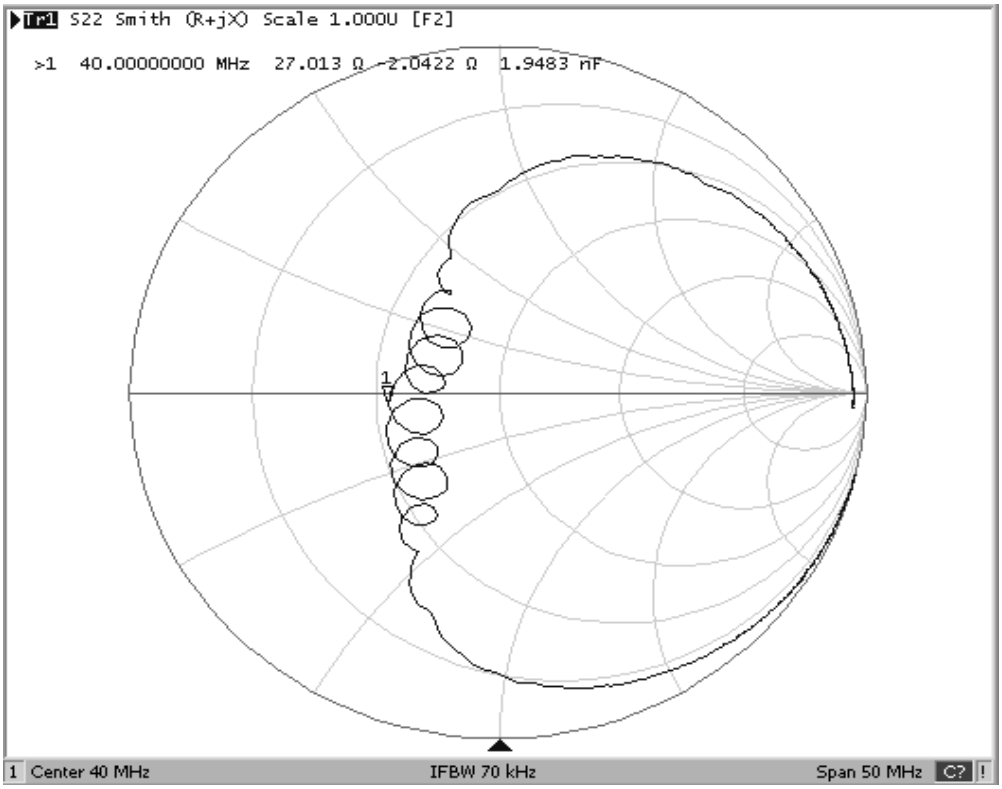
Filter Response Plots



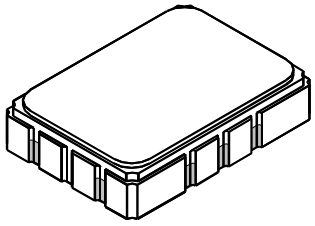


Filter Input/Output Impedance Plots



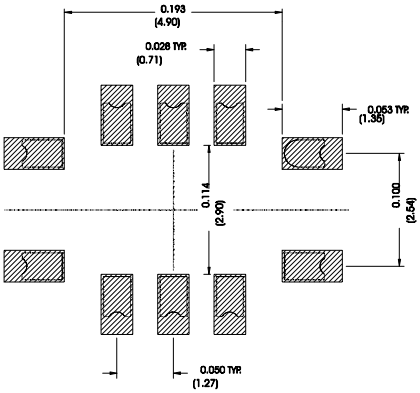


SMP-03 10-Terminal Ceramic Surface-mount Case
5 x 7 mm Nominal Footprint



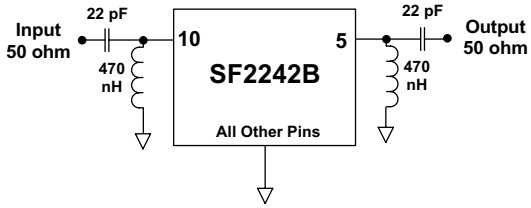
Case Dimensions						
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	6.80	7.00	7.20	0.268	0.276	0.283
B	4.80	5.00	5.20	0.189	0.197	0.205
C	-	1.65	2.00	-	0.065	0.079
D	0.47	0.60	0.73	0.019	0.024	0.029
E	2.41	2.54	2.67	0.095	0.100	0.105
H	0.87	1.0	1.13	0.034	0.039	0.044
J	4.87	5.00	5.13	0.192	0.197	0.202
K	2.87	3.00	3.13	0.113	0.118	0.123
P	1.14	1.27	1.40	0.045	0.050	0.055

Recommended PCB Footprint

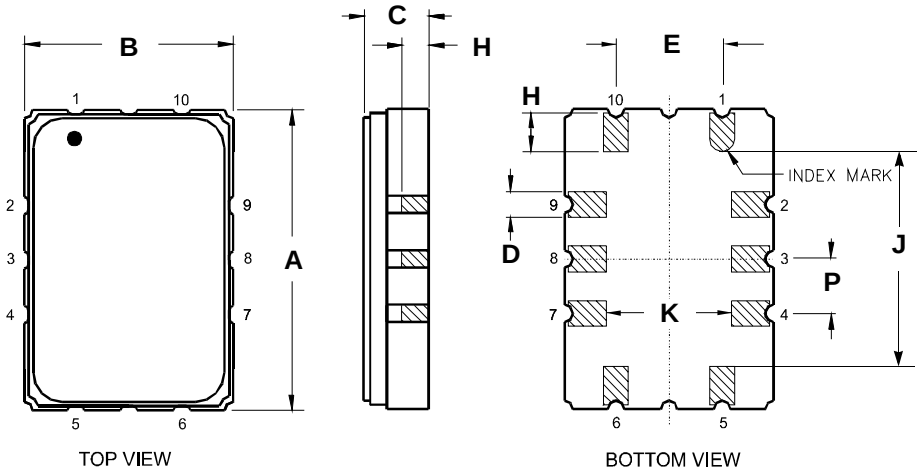


Electrical Connections		
Connection		Terminals
Port 1	Input or Balanced Input	10
Port 2	Output or Balanced Output	5
Ground		All others
Single-ended or Differential Operation		

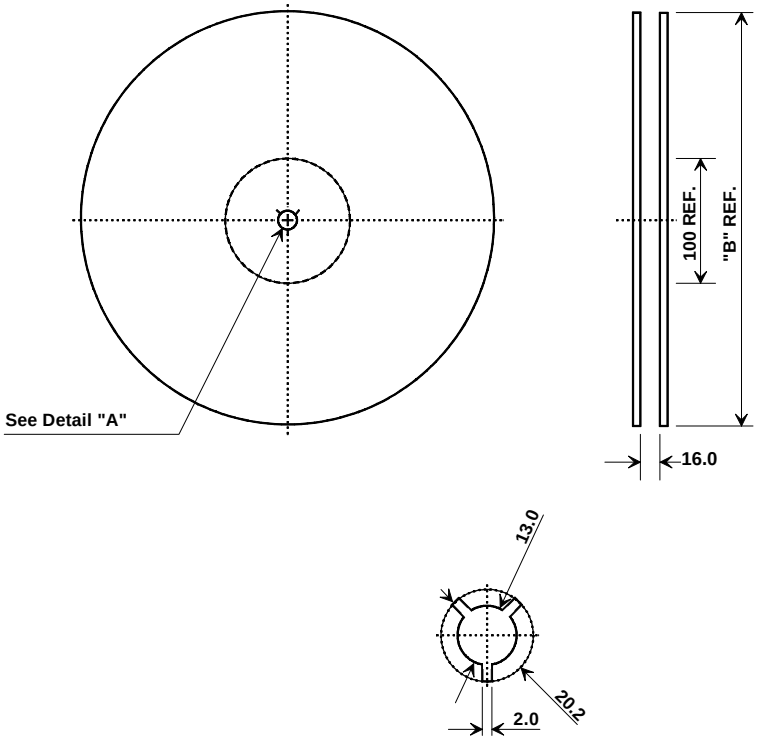
Matching Circuit



Case 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	



Tape and Reel Specifications



"B" Nominal Size		Quantity Per Reel
Inches	millimeters	
7	178	500
13	330	2000

COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
Ao	5.6 mm
Bo	7.6 mm
Ko	2.0 mm
Pitch	8.0 mm
W	16.0 mm