

- **Precision SAW Filter**
- **Excellent Size-to-Performance Ratio**
- **Hermetic 13.3 x 6.5 mm Surface-mount Case**
- **Complies with Directive 2002/95/EC (RoHS)**

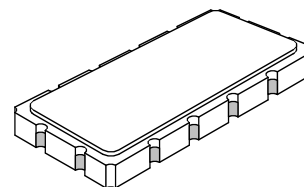


Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Maximum DC Voltage Between any Two Terminals	30	VDC
Operating Temperature Range	-40 to +85	°C
Storage Temperature Range	-40 to +85	°C
Suitable for Lead-free Soldering - Maximum Soldering Profile	260 °C for 30 s	

SF2111A

**140 MHz
SAW Filter**



SMP-53

Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	f_C	1	138.85	140	141.15	MHz
Insertion Loss				9	11	dB
1 dB Bandwidth	BW_1		15.0	16.2		MHz
3 dB Bandwidth	BW_3		16.0	17.0		MHz
35 dB Bandwidth	BW_{35}			20	22	MHz
Passband Ripple, 133.6 - 146.4 MHz				0.4	1	dB _{P-P}
Phase Linearity, 133.6 - 146.4 MHz				2.5	6	deg
Group Delay Variation, 133.6 - 146.4 MHz				15	50	ns _{P-P}
Absolute Group Delay				0.928		μs
Temperature Shift				-94		ppm/K
Source Impedance				50		Ω
Load Impedance				50		Ω
Rejection Relative to Attenuation at f_C						dB
100 to 128.7 MHz			40	49		
128.7 to 129 MHz			40	55		
151 to 152.3 MHz			28	40		
152.3 to 180 MHz			37	42		

Case Style	SMP-53 13.3 x 6.5 mm Nominal Footprint
Lid Symbolization (YY = year, WW = week)	RFM SF2111A YYWW

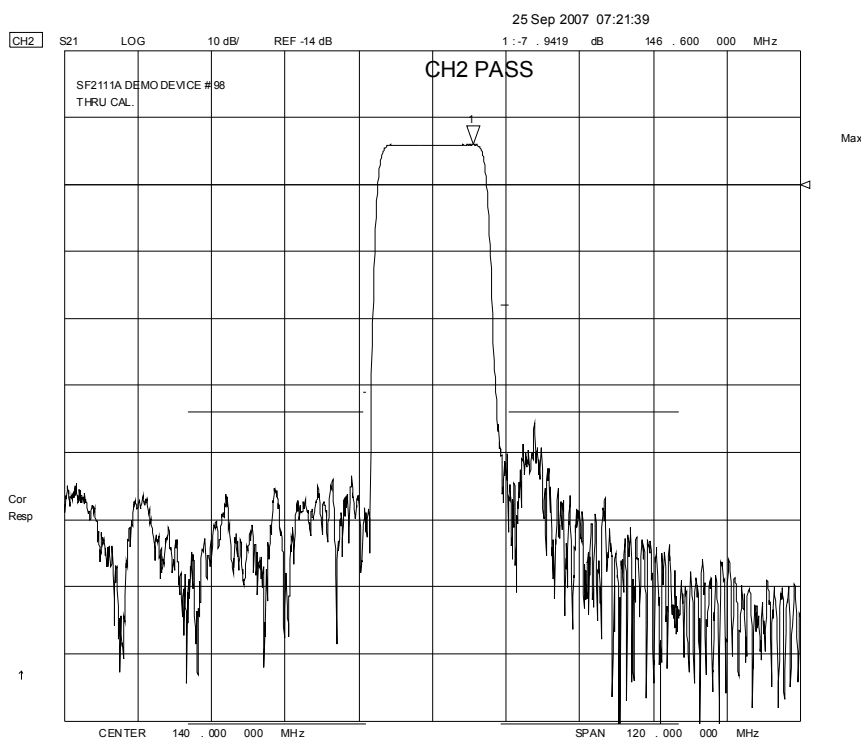
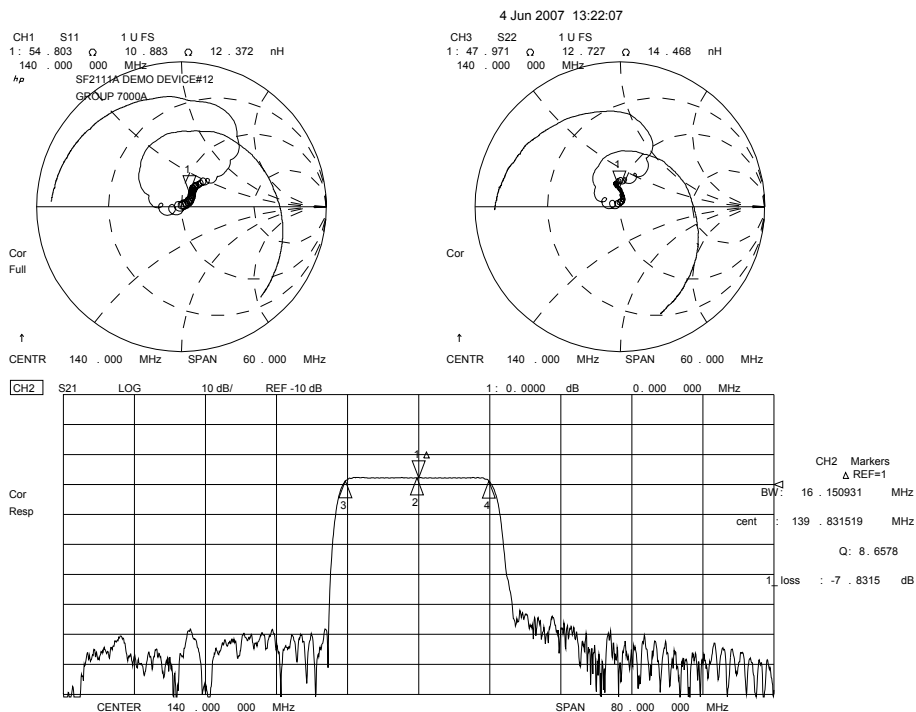


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

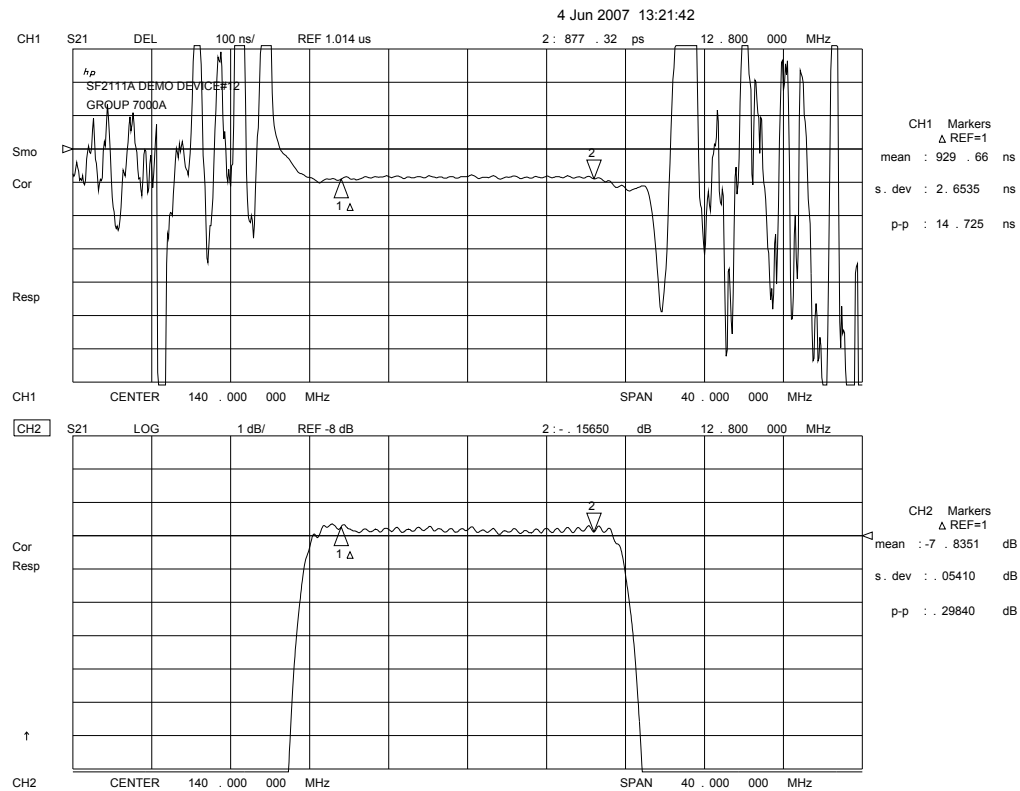
Notes:

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. The design, manufacturing process, and specifications of this filter are subject to change.
4. US and international patents may apply.

S₁₁, S₂₂ and S₂₁ Filter Plots

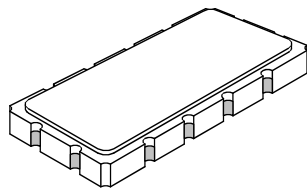


Filter Group Delay and Amplitude Ripple



SMP-53 Case

12-Terminal Ceramic Surface-Mount Case 13.3 x 6.5 mm Nominal Footprint



Case Dimensions

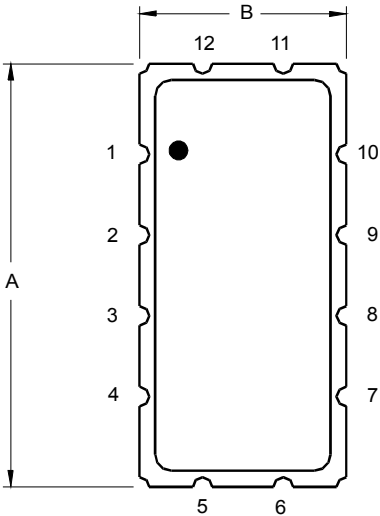
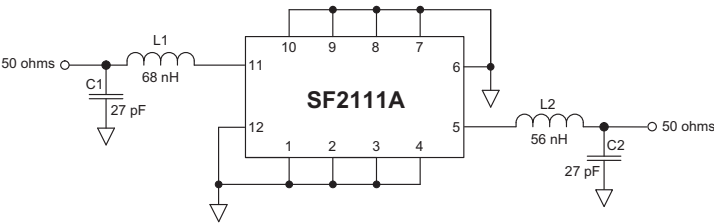
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	13.08	13.31	13.60	0.515	0.524	0.535
B	6.27	6.50	6.80	0.247	0.256	0.268
C		1.91	2.00		0.075	0.079
D		1.50			0.059	
E		0.79			0.031	
H		1.0			0.039	
P		2.54			0.100	

Electrical Connections

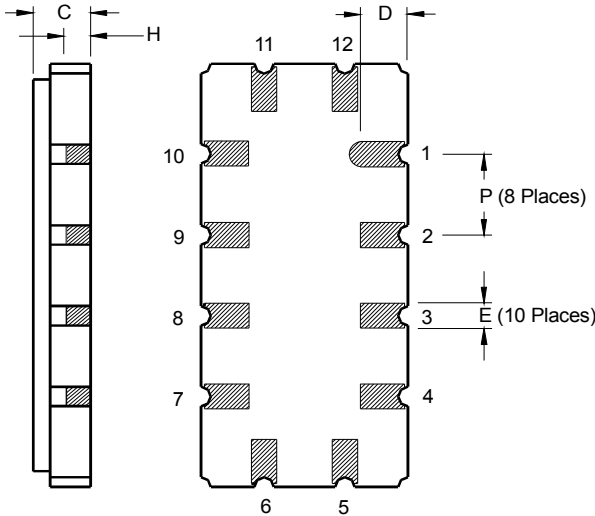
Connection		Terminals
Port 1	Input or Return	11
	Return or Input	12
Port 2	Output or Return	5
	Return or Output	6
	Ground	All others
Single-ended Operation		Return is ground
Differential Operation		Return is hot

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	

SF2111A Tuning Network



TOP VIEW



BOTTOM VIEW