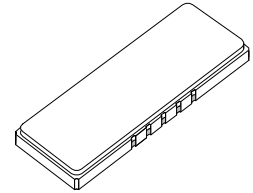


- *Designed for CDMA2000 BTS Applications*
- *Simple External Impedance Matching*
- *Hermetic SMP-97 Surface-Mount Case*
- *Unbalanced Input and Output*
- *Complies with Directive 2002/95/EC (RoHS)*



SF1111A

**160 MHz
SAW Filter**



SMP-97

Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Max. DC voltage between any 2 terminals	30	VDC
Storage Temperature Range	-40 to +85	°C
Suitable for lead-free soldering - Max. Soldering Profile	260°C for 30 s	

Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units			
Nominal Center Frequency	f_c	1	160.000			MHz			
Passband	Insertion Loss at f_c	IL	1.5 dB Passband		9	11.0	dB		
			3 dB Passband		$BW_{1.5}$	BW_3	± 590	kHz	
			Amplitude Ripple over $f_c \pm 470$ kHz			± 750	0.7	1.0	dB
			Phase Linearity over $f_c \pm 590$ kHz			10	20	deg _{P-P}	
			Rejection		$f_c - 10.0$ to $f_c - 1.25$ and $f_c + 1.25$ to $f_c + 10.0$ MHz	40			dB
		$f_c - 20$ to $f_c - 10.0$ and $f_c + 10.0$ to $f_c + 20$ MHz	50			dB			
Operating Temperature Range	T_A	1	-20		+70	°C			

Impedance Matching to 50 Ω Unbalanced	External L-C
Case Style	SMP-97 24.6 x 9 mm Nominal Footprint
Lid Symbolization (YY = year, WW = week)	RFM SF1111A YYWW



CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

NOTES:

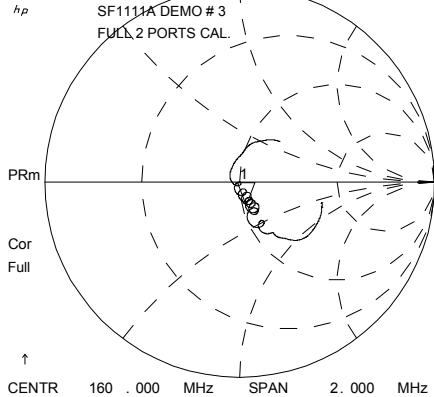
1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to 50 Ω and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency, f_c .
3. 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. 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.
7. US and international patents may apply.

Electrical Connections

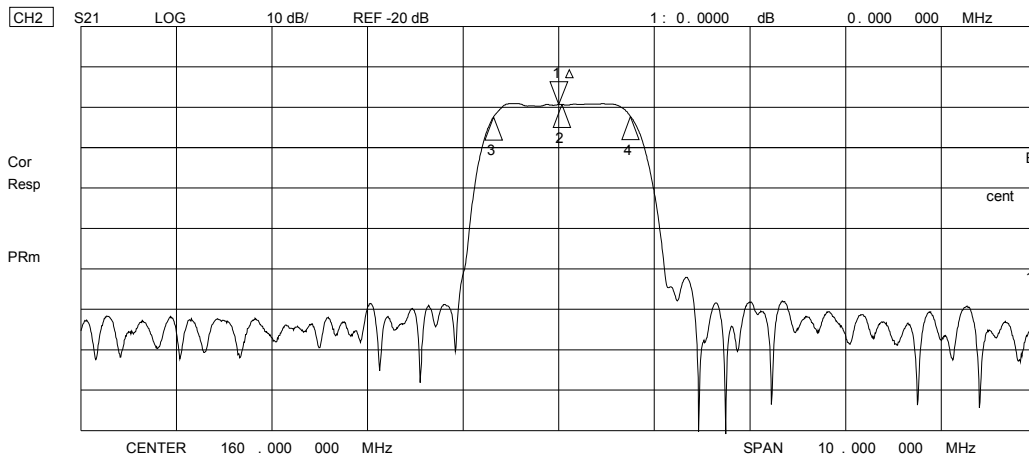
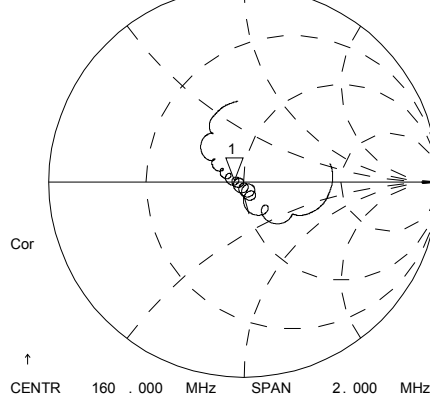
Connection	Terminals
Port 1 Hot	10
Port 1 Gnd Return	1
Port 2 Hot	5
Port 2 Gnd Return	6
Case Ground	All others

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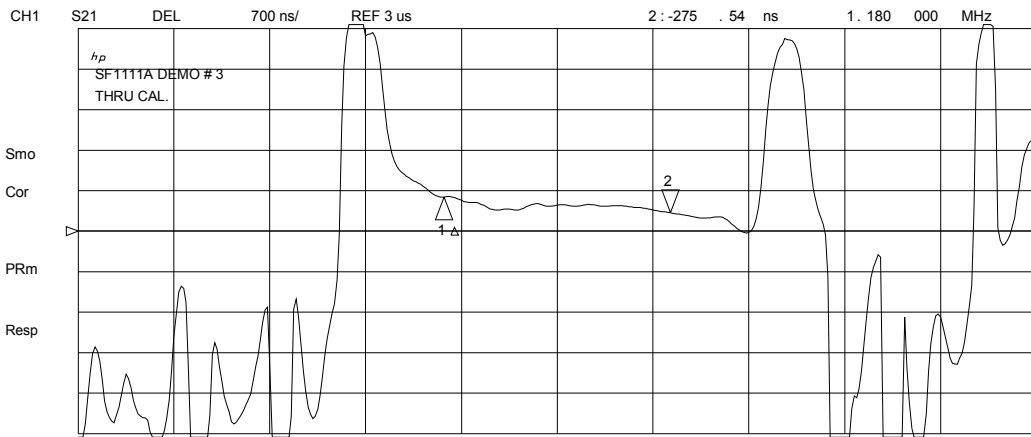
CH1 S11 1 UFS
 1: 52.115 Ω -12.555 Ω 79.231 pF
 160.000 000 MHz



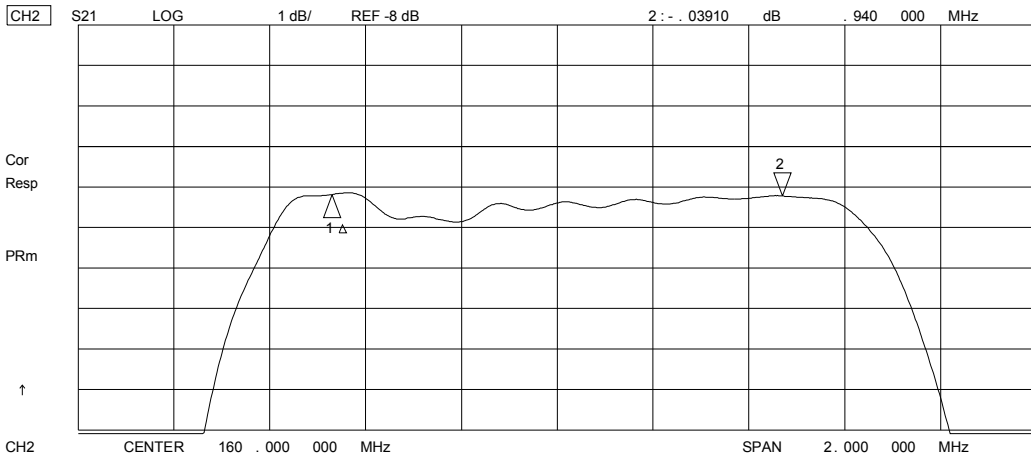
CH3 S22 1 UFS
 1: 45.631 Ω 0.7227 Ω 718.84 pH
 160.000 000 MHz



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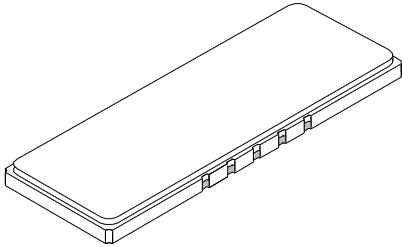
CH1 Markers
Δ REF=1
mean : 3.4409 us
s. dev : 63.113 ns
p-p : 276.79 ns



CH2 Markers
Δ REF=1
mean : -9.4556 dB
s. dev : .19950 dB
p-p : .72290 dB

SMP-97 Case

10-Terminal Ceramic Surface-Mount Case 24.6 x 9 mm Nominal Footprint



Case Dimensions

Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	24.41	24.64	24.94	0.961	0.970	0.982
B	8.80	8.99	9.30	0.349	0.354	0.366
C		1.75	2.00		0.069	0.079
D		2.29			0.090	
E		1.02			0.040	
H		1.0			0.039	
M		4.83			0.190	
N		3.40			0.134	
P		1.905			0.075	

Electrical Connections

Connection		Terminals
Port 1	Input or Return	10
	Return or Input	1
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 Termination	Au plating 30 - 60 ulnches (76.2-152 uM) over 80-200 ulnches (203-508 uM) Ni.
Lid	Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 ulnches Thick
Body	Al ₂ O ₃ Ceramic
Pb Free	

