

- **Designed for WiMax Applications**
- **Low Insertion Loss IF Filter**
- **Hermetic 13.3 x 6.5 mm Surface-mount Case**
- **Complies with Directive 2002/95/EC (RoHS)**

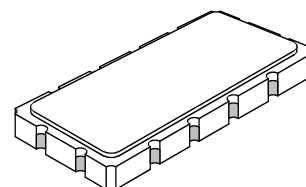


Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Maximum DC Voltage Between any Two Terminals	30	VDC
Storage Temperature Range	-50 to +125	°C
Suitable for Lead-free Soldering - Maximum Soldering Profile	260 °C for 30 s	

SF2157A

**156 MHz
SAW Filter**



SM13365-12

Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	f_c	1		156		MHz
1 dB Bandwidth	BW_1	1	20.0	22.0		MHz
3 dB Bandwidth	BW_3	1	21.0	24.0		MHz
40 dB Bandwidth	BW_{40}	1		27	30	MHz
Insertion Loss	IL	1		10.0	12.0	dB
Attenuation Relative to IL		1, 2, 3				dB
0 to 123 MHz			45	50		
190 to 1000 MHz			45	50		
Passband Ripple, 146 to 166 MHz		1, 2, 3		1.0	1.8	dB _{P-P}
Absolute Group Delay, 156 MHz				1.13	1.50	μs
Group Delay Ripple, 146 to 166 MHz				30	100	ns _{P-P}
Operating Temperature Range		1	-40		+85	°C
Source Impedance				50		ohm
VSWR to Source through Matching Network				1.4:1	2:1	
Load Impedance				50		ohm
VSWR to Load through Matching Network				1.4:1	2:1	
Frequency Temperature Coefficient				-94		ppm/K

Impedance Matching to 50 Ω Unbalanced	External L-C
Case Style	SM13365-12 13.3 x 6.5 mm Nominal Footprint
Lid Symbolization (YY = year, WW = week)	RFM SF2157A YYWW

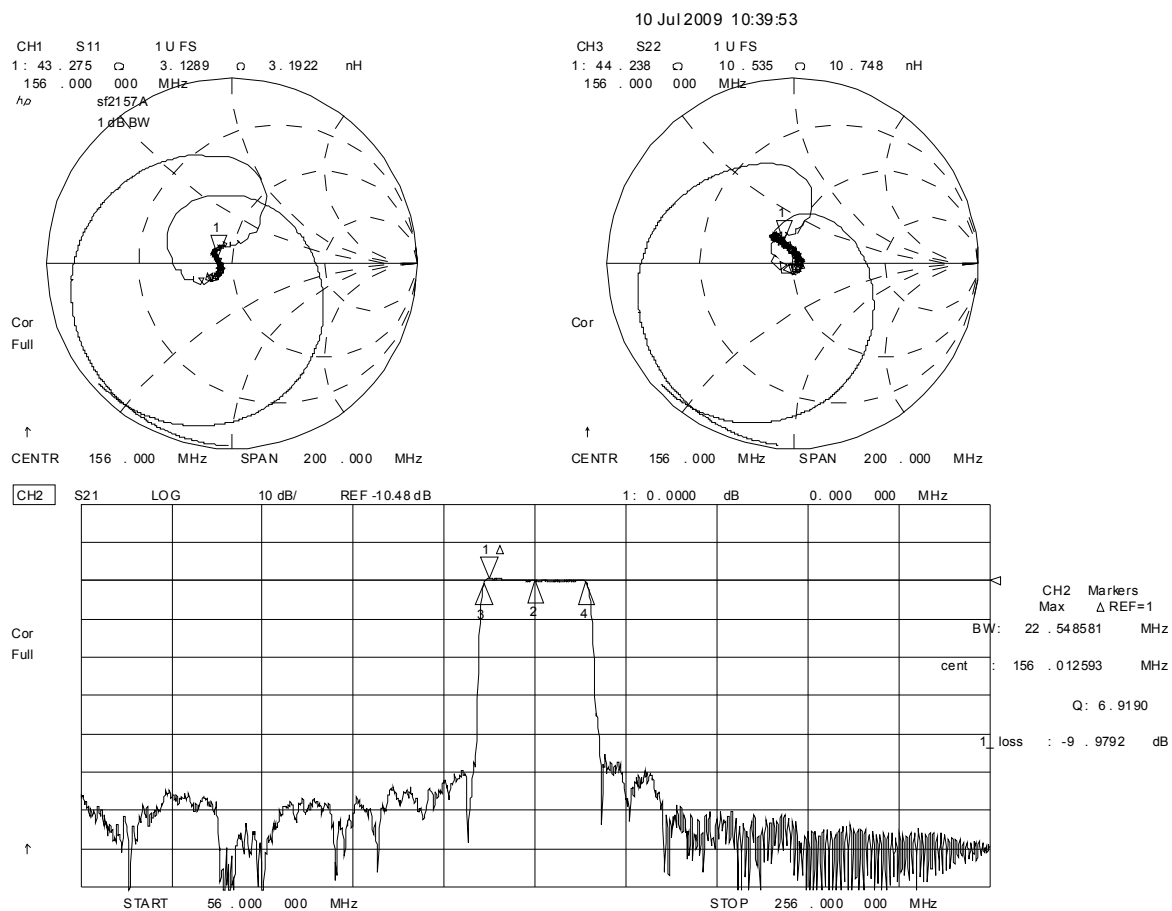


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

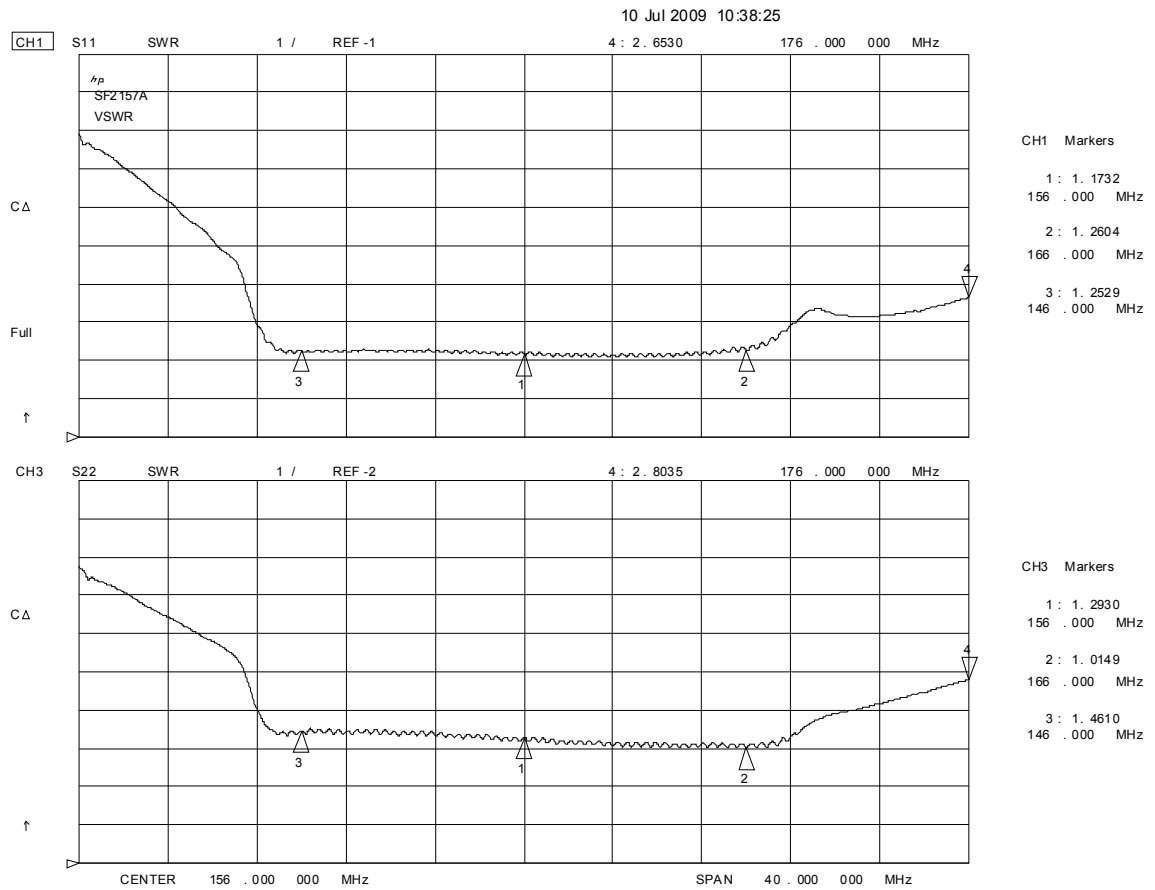
NOTES:

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. Part to part absolute delay measurement records the absolute delay mean across 1 dB passband.
5. "LRIP" or "L" after the part number indicates "low rate initial production" and "ENG" or "E" indicates "engineering prototypes."
6. The design, manufacturing process, and specifications of this filter are subject to change.
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.

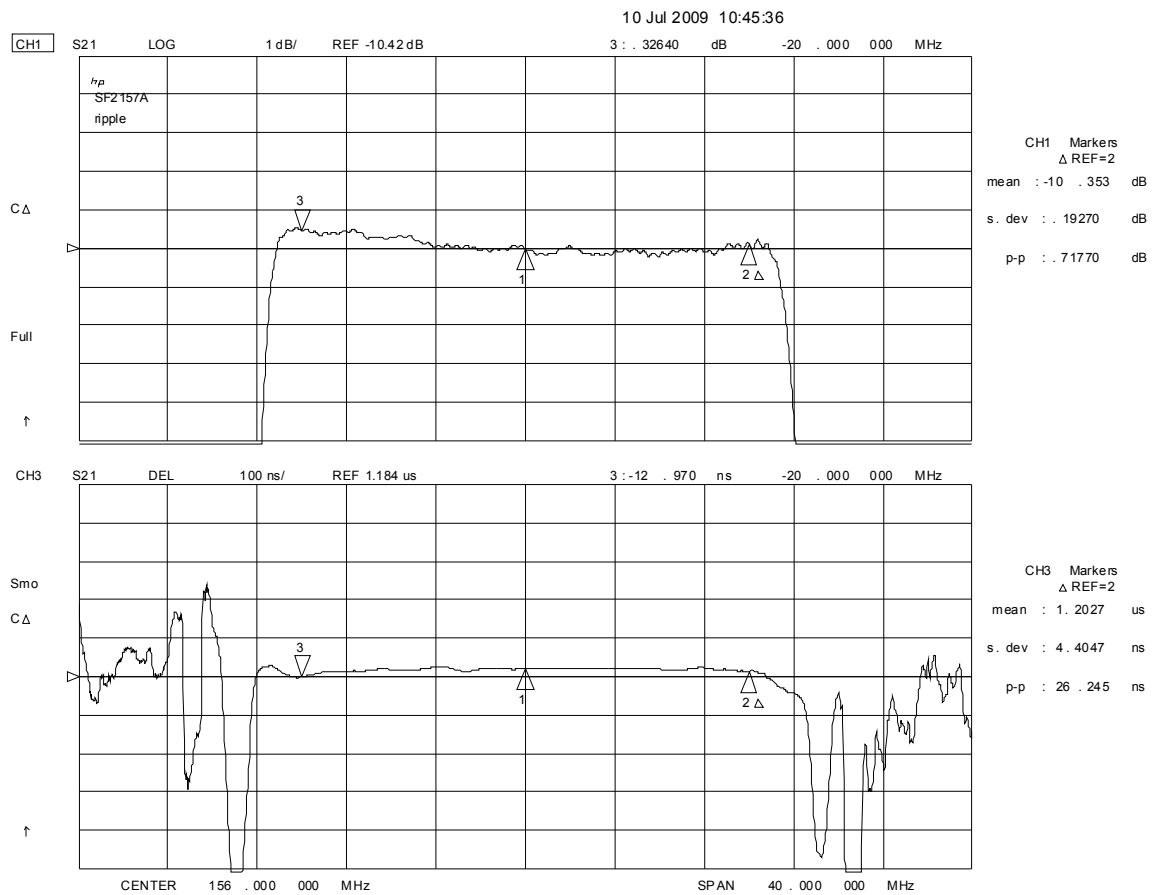
S₁₁, S₂₂ and S₂₁ Filter Plots



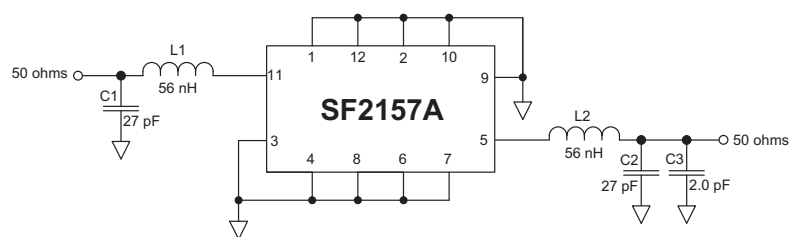
Filter Passband VSWR



Filter Amplitude and Group Delay Ripple

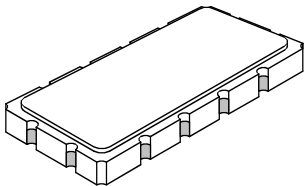


SF2157A Demonstration Circuit



SM13365-12 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
Input	11
Output	5
Case Ground	All others

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 ₂ O ₃ Ceramic
Pb Free	

