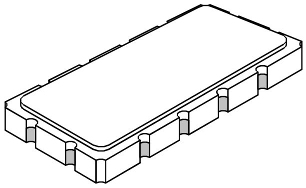
RFMi
A BRAND OF AKOUSTIS

SF2157A

156 MHz SAW Filter



SM13365-12

- ***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)***
- ***Tape and Reel Standard per ANSI/EIA-481***
- ***Moisture Sensitivity Level: 1***

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	

Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	f_C			156		MHz
1 dB Bandwidth	BW_1		20.0	22.0		MHz
3 dB Bandwidth	BW_3		21.0	24.0		MHz
40 dB Bandwidth	BW_{40}			27	30	MHz
Insertion Loss	IL			10.0	12.0	dB
Attenuation Relative to IL						dB
0 to123 MHz			45	50		
190 to 1000 MHz			45	50		
Passband Ripple, 146 to 166 MHz				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			-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

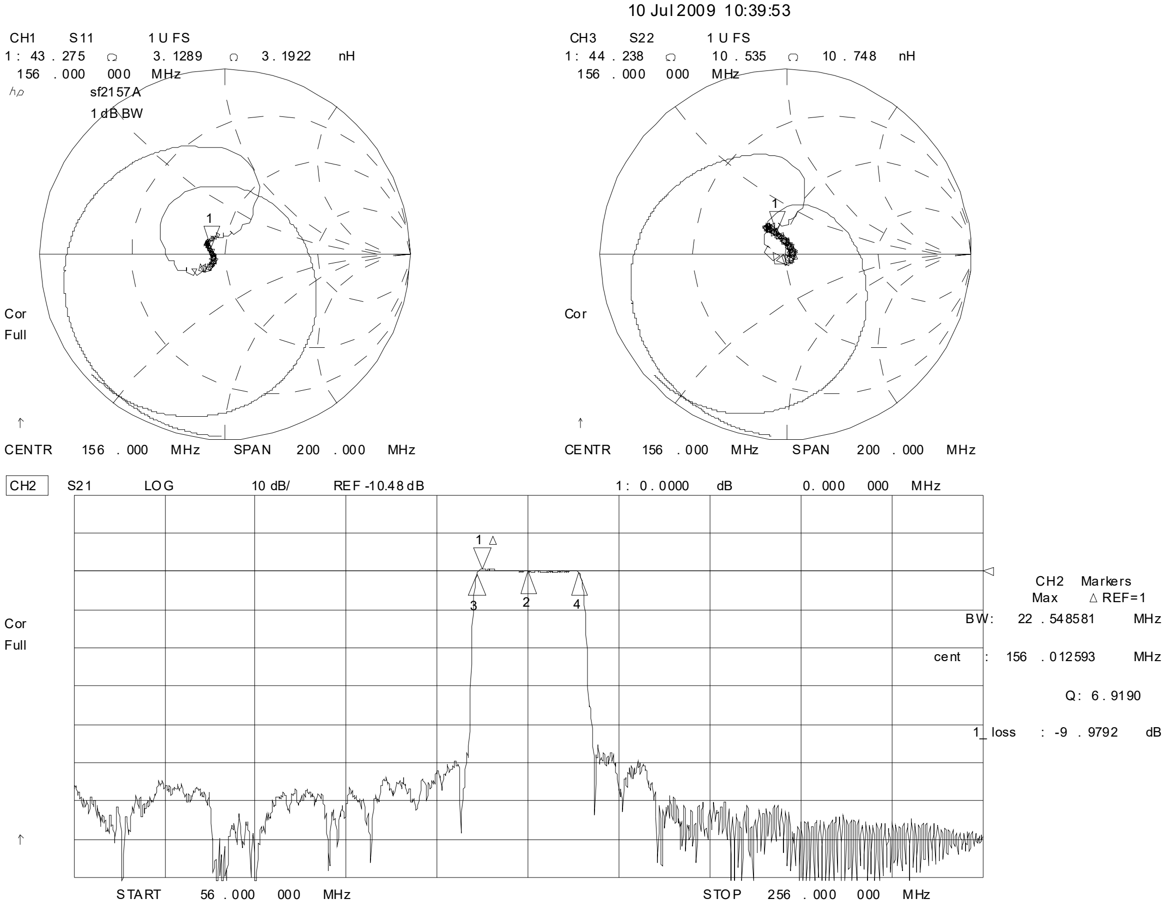
Impedance Matching to 50 Ω Unbalanced	External L-C
Case Style	SM13365-12 13.3 x 6.5 mm Nominal Footprint
Lid Symbolization (YY = year, WW = week, S = shift, ## = Sequence Code)	RFM, SF2157A, YYWWS##

CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

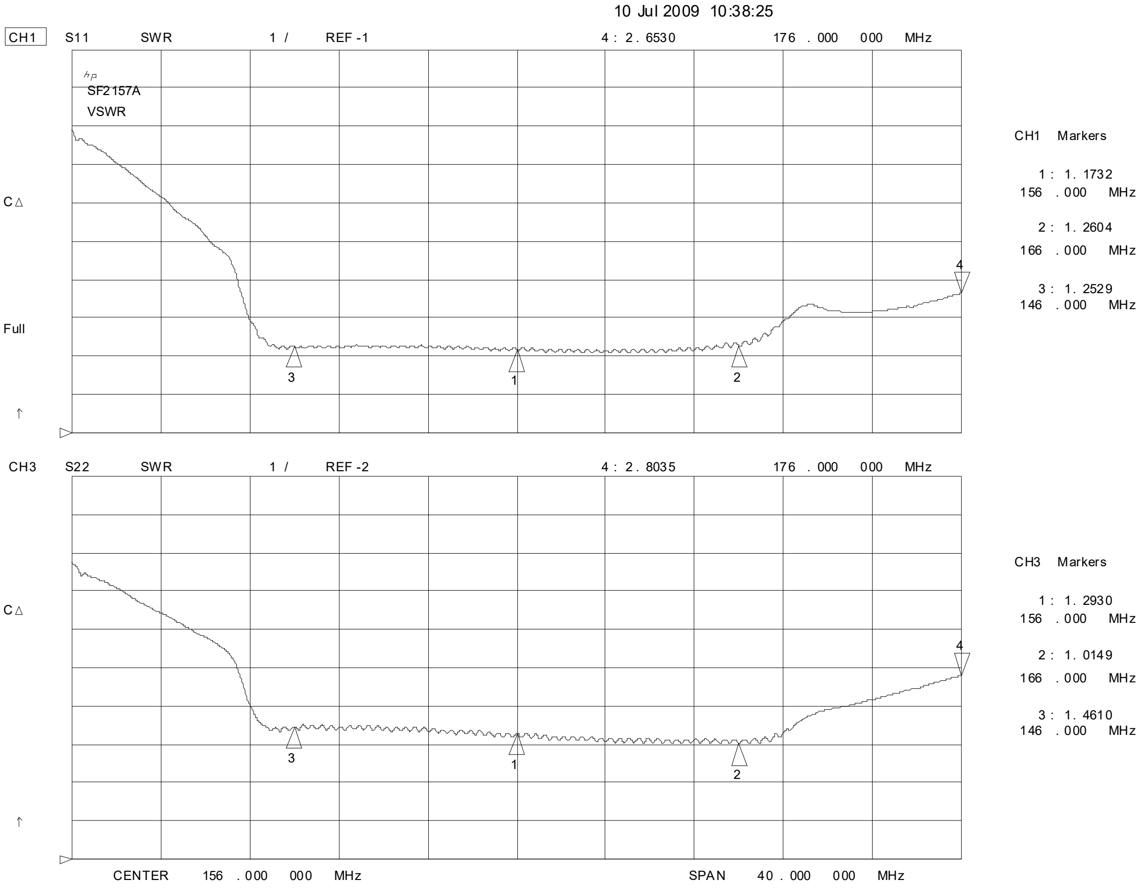
NOTES:

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

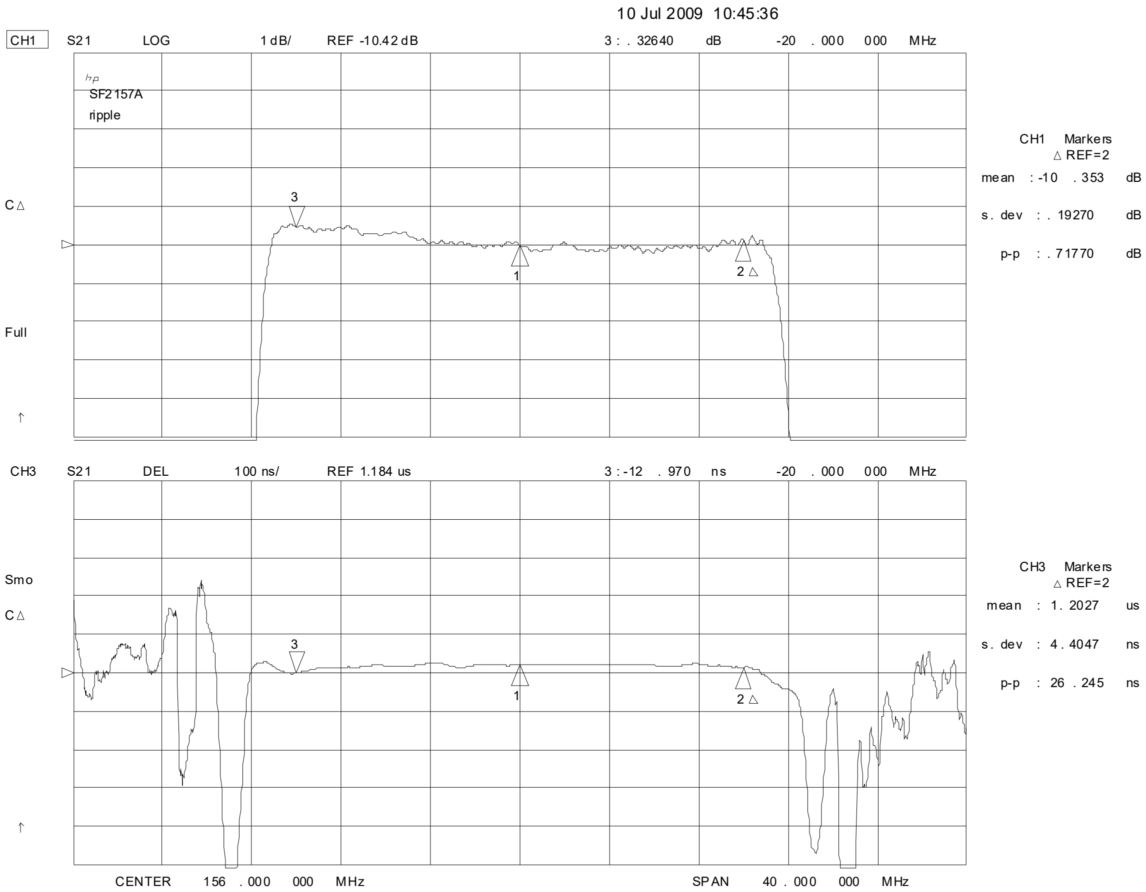
S_{11}, S_{22} and S_{21} Filter Plots



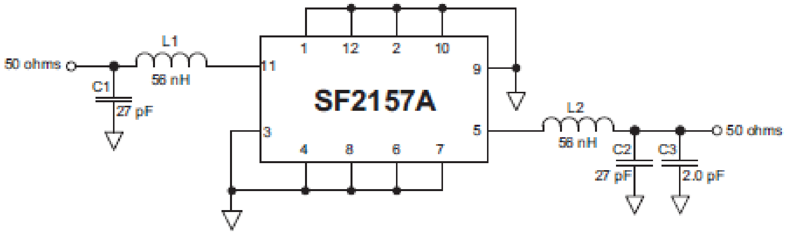
Filter Passband VSWR



Filter Amplitude and Group Delay Ripple



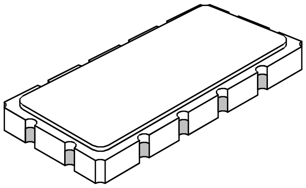
SF2157A Demonstration Circuit



SM13365-12 Case

12-Terminal Ceramic Surface-Mount Case

13.3 x 6.5 mm Nominal Footprint



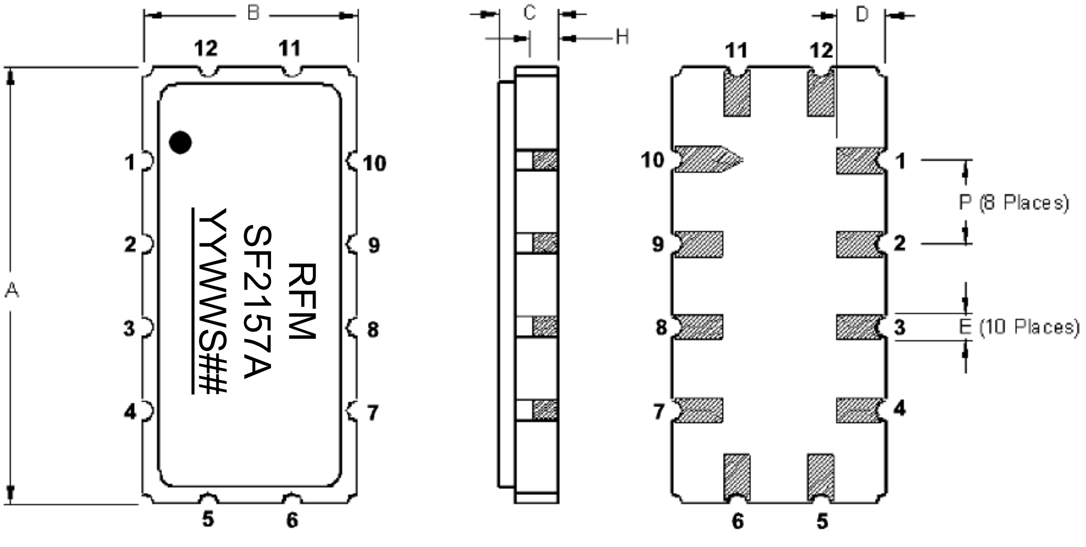
Case Dimensions

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_2O_3 Ceramic



TOP VIEW

BOTTOM VIEW

Recommended Reflow Profile

1. Preheating shall be fixed at 150~180ºC for 60~90 seconds.
2. Ascending time to preheating temperature 150ºC shall be 30 seconds min.
3. Heating shall be fixed at 220ºC for 50~80 seconds and at 260ºC +0/-5ºC peak (10 seconds).
4. Time: 5 times maximum.