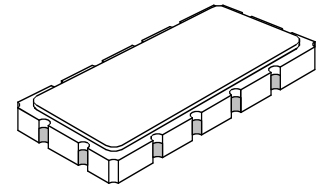




**SF2135A**

**96.0 MHz  
SAW Filter**



**SMP-53**

- **Designed for Wide Channel IF Filtering**
- **Low Insertion Loss**
- **Hermetic 13.3 x 6.5 mm Surface-mount Case**
- **Balanced or Single-ended Input and Output**
- **Complies with Directive 2002/95/EC (RoHS)**



**Absolute Maximum Ratings**

Rating	Value	Units
Maximum Incident Power in Passband	+13	dBm
Maximum DC Voltage Between any Two Terminals	30	VDC
Storage Temperature Range	-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		96.0		MHz
1 dB Bandwidth	$BW_1$		1.56	1.80		MHz
Insertion Loss	IL	1, 2, 3		11.8	15.0	dB
Relative Attenuation	91 to 94.5 MHz 97.5 to 98.5 MHz 10 to 60 MHz 76.8 MHz 132 to 135 MHz 135 to 1000 MHz		6	9.5		dB
			6	11.5		
			55	72		
			55	72		
			55	74		
Passband Amplitude Ripple	95.2 to 96.8 MHz			0.9	1.2	dB <sub>p-p</sub>
Group Delay Ripple	95.2 to 96.8 MHz	1, 2, 3		62	100	ns <sub>p-p</sub>
Operating Temperature		1	-30		+85	°C
Terminating Source Impedance				50		ohm
Terminating Load Impedance				50		ohm

Impedance Matching to 50 Ω Unbalanced	External L-C
Case Style	SMP-53 13.3 x 6.5 mm Nominal Footprint
Lid Symbolization (YY = year, WW = week)	RFM SF2135A YYWW

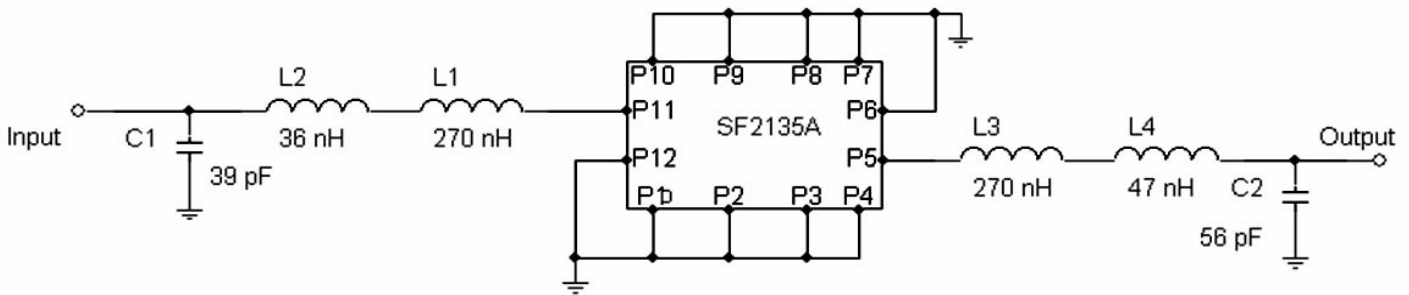


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

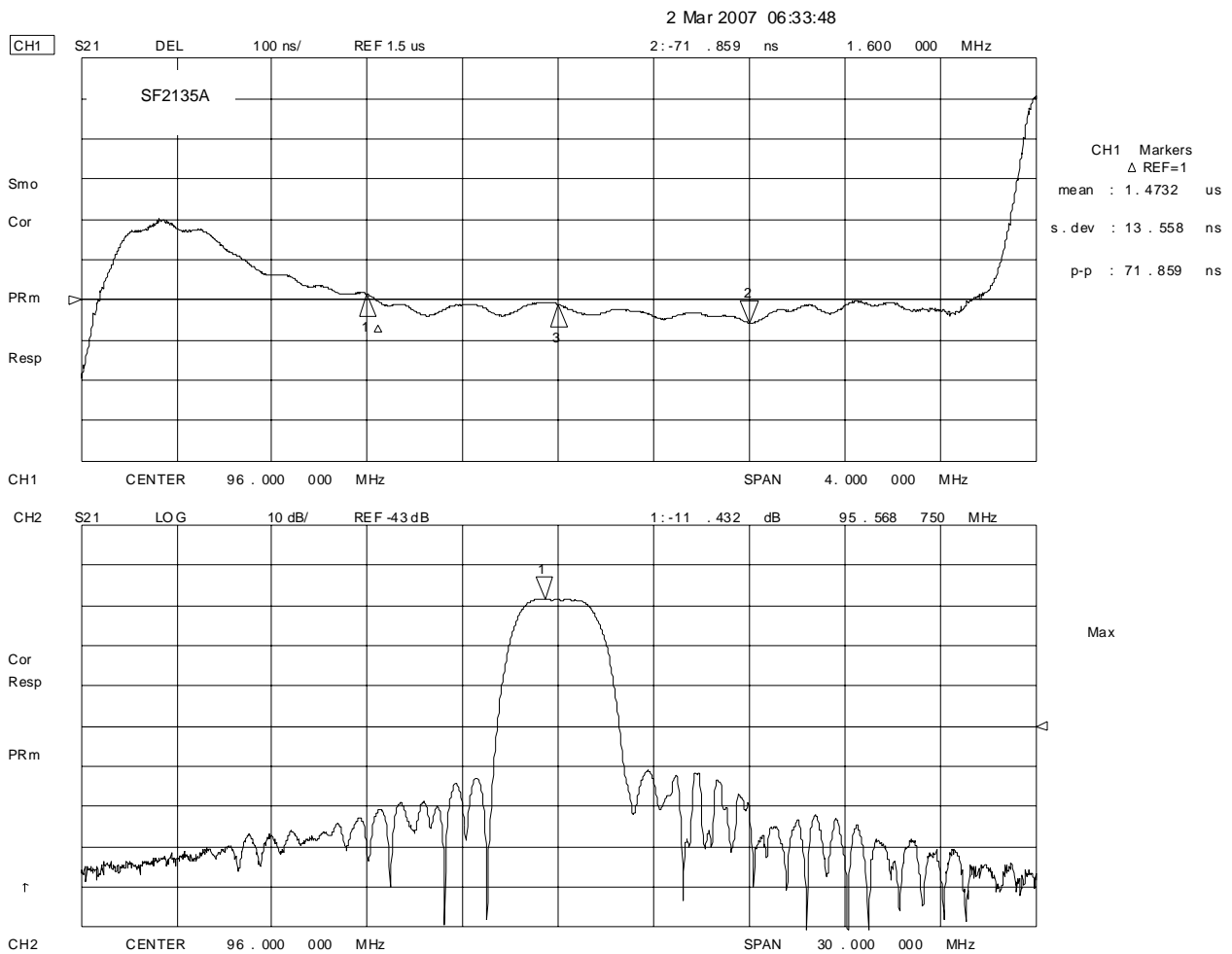
**Notes:**

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.

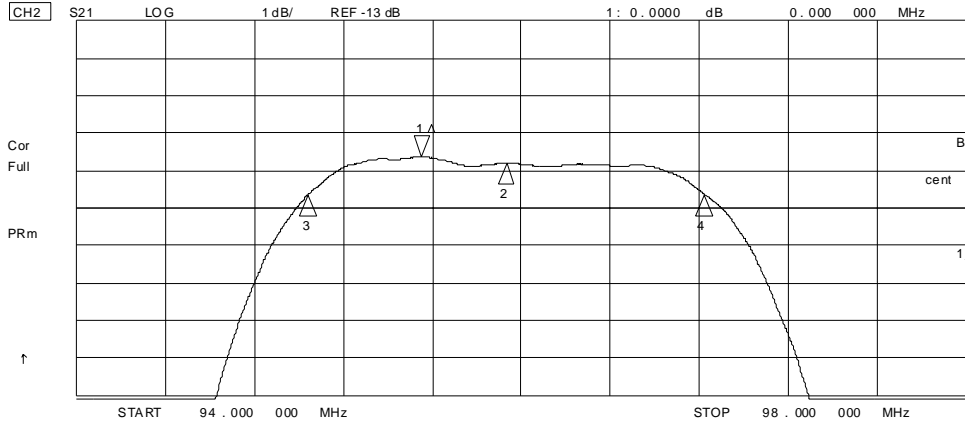
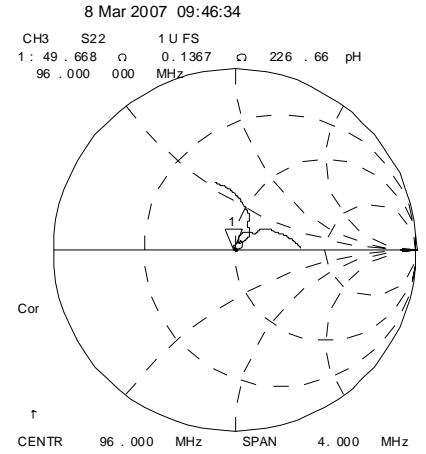
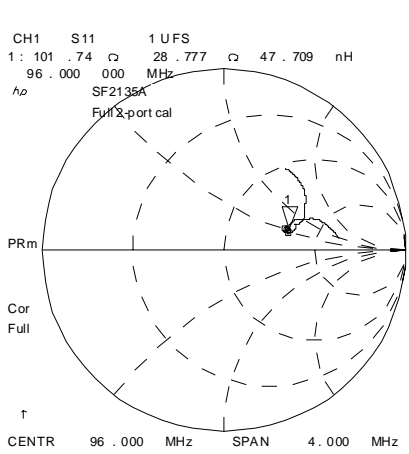
# SF2135A 50 ohm Tuning Network



## SF2135A Group Delay Ripple and Filter Response Plots



# SF2135A $S_{11}$ , $S_{22}$ and Pass-band Plots

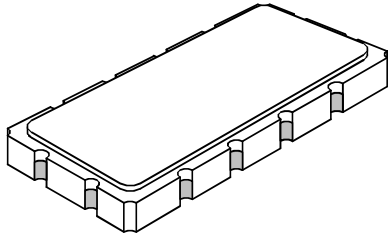


CH2 Markers  
 Max  $\Delta$  REF=1  
 BW: 1.778417 MHz  
 cent : 95.932649 MHz  
 Q: 53.943  
 1\_loss : -11.634 dB

# SAW Filters Package

## 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	

Materials	
Solder Pad Plating	0.3 to 1.0 $\mu\text{m}$ Gold over 1.27 to 8.89 $\mu\text{m}$ Nickel
Lid Plating	2.0 to 3.0 $\mu\text{m}$ Nickel
Body	$\text{Al}_2\text{O}_3$ Ceramic
Pb Free	

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

