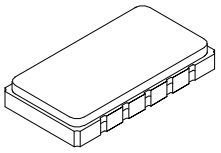
Preliminary

March 11, 2003

SF2005B-1

167.0 MHz SAW Filter

- ***Single Ended Input / Differential Output***
- ***Low Insertion Loss***
- ***Hermetic 13.3 x 6.5 mm Surface-mount Case***



SMP53-S

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
Max. Soldering Profile	265°C for 10 s	

Electrical Characteristics

Characteristic		Sym	Notes	Min	Typ	Max	Units
Nominal Frequency		f_C	1		167		MHz
Passband bandwidth	2dB	BW		0.150			MHz
Insertion Loss	167 ±.075 MHz	IL	1, 2,3			4.0	dB
Rejection	30 to 147 MHz			30			
	147 to 166.4 MHz			10			
	167.6 to 187 MHz			10			
	187 to 1000 MHz			30			
Amplitude ripple (p-p)	fc ±.075 MHz	Δ_a				0.5	
Operating Temperature			1	-5	+25	+85	°C
50 Ohm single ended match Input Return Loss				15			dB
50 Ohm differential Output Return Loss				10			dB
Group Delay Deviation F_C ±.075 MHz		GDD				300	nsec

Impedance Matching	External L-C
Case Style	SMP-53-S 13.3 x 6.5 mm Nominal Footprint
Lid Symbolization (YY = year, WW = week, S=shift)	RFM SF2005B-1 YYWWS

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
Single Ended Operation	Return is ground
Differential Operation	Return is hot

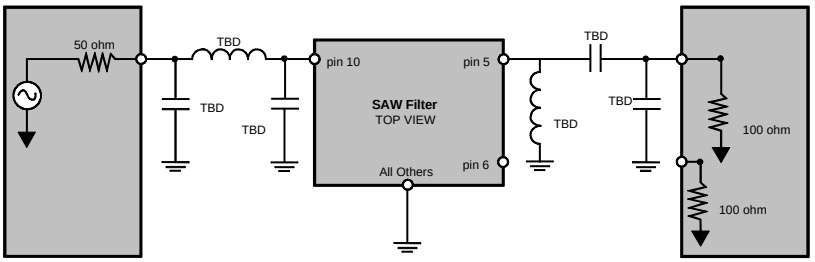


fig 1 values TBD

Notes:

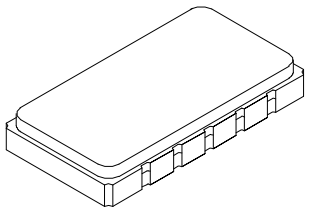
1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to 50 Ω and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency, fc.
3. Rejection is measured as attenuation from fc IL. 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 2 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.
9. Electrostatic Sensitive Device. Observe precautions for handling.

RF Monolithics, Inc. Phone: (972) 233-2903 Fax: (972) 387-8148 E-mail: info@rfm.com
RFM Europe Phone: 44 1963 251383 Fax: 44 1963 251510 http://www.rfm.com

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SMP-53-S Case

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

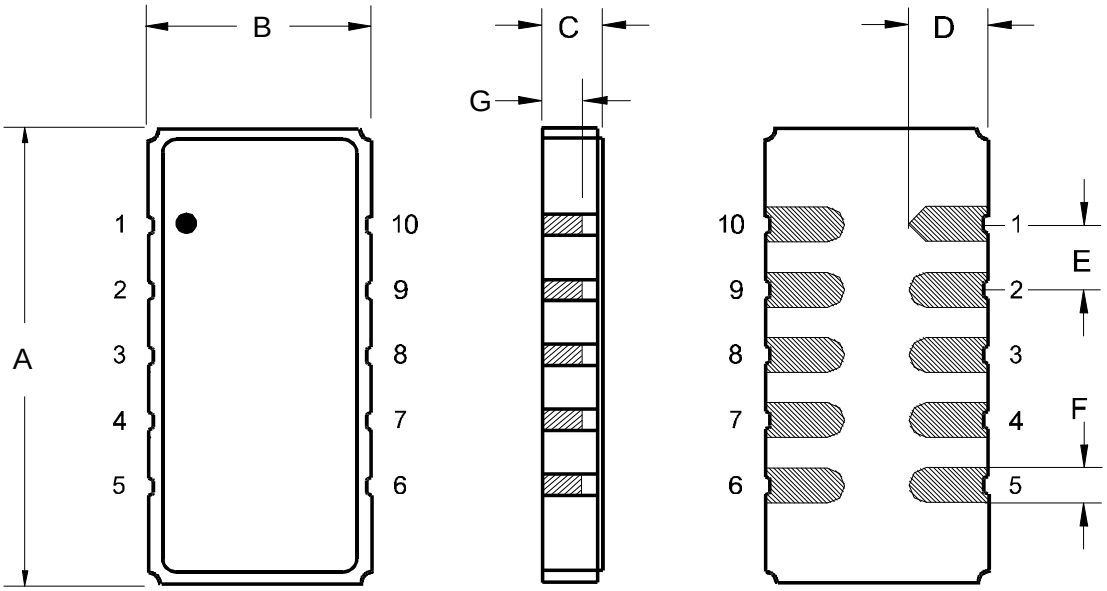


Case Dimensions

Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A		13.3			.524	
B		6.5			.256	
C			2.00			.078
D		2.3			.091	
E		1.91			.075	
F		1.02			.040	
G		1.0			0.039	

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
Single Ended Operation	**Return is ground**
Differential Operation	**Return is hot**



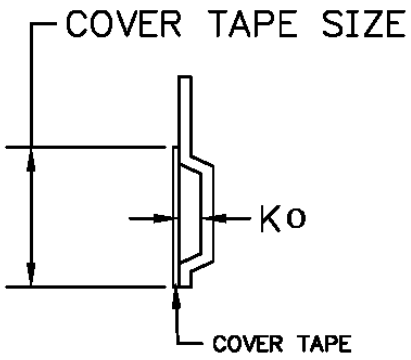
TOP VIEW BOTTOM VIEW

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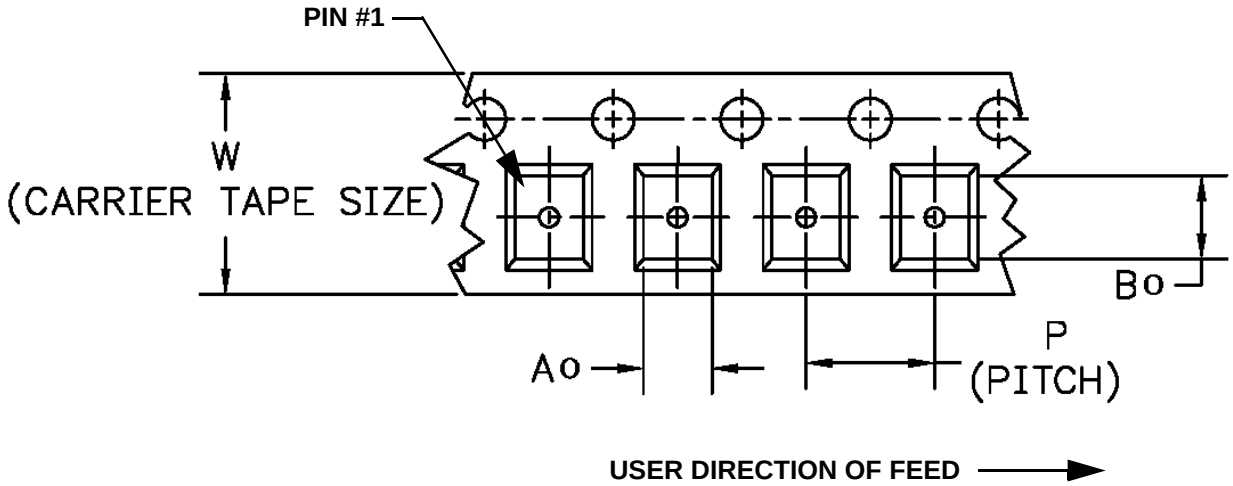
24mm Carrier Tape

Dimensions

Carrier Tape Dimensions		Cover Tape
Ao	.274 ± .004 (7.0)	21.3mm
Bo	.542 ± .004 (13.76)	
Ko	.088 ± .004 (2.2)	
P	12mm	
W	24mm	
Tape Length	86M	
Pockets/M	83/M	



COMPONENT ORIENTATION



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