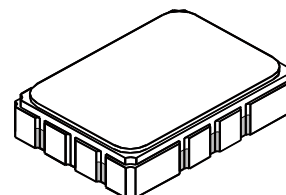


Preliminary



SF1103B

285 MHz SAW Filter



SMP-03

- **Designed for WCDMA 3G IF Applications**
- **Quartz Temperature Stability**
- **Small Size**
- **Hermetic 7 x 5 Surface-Mount Case**
- **Complies with Directive 2002/95/EC (RoHS)**



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	265°C for 90 s	

Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units	
Nominal Center Frequency	f_c	1	285.000			MHz	
Passband	Insertion Loss at f_c	1, 2		14.5		dB	
	1 dB Passband		BW_1	TBD	± 2.0		mHz
	3 dB Passband		BW_3		± 2.5		
	Amplitude Ripple over $f_c \pm 1.9$ MHz				0.8	1.0	dB _{p-p}
	Group Delay Variation over $f_c \pm 1.9$ MHz		GDV		70	150	ns _{p-p}
Rejection	$f_c - 25$ to $f_c - 5.0$ and $f_c + 5.0$ to $f_c + 25$ MHz	1, 2, 3	40	42		dB	
Operating Temperature Range	T_A	1	-20		+80	°C	

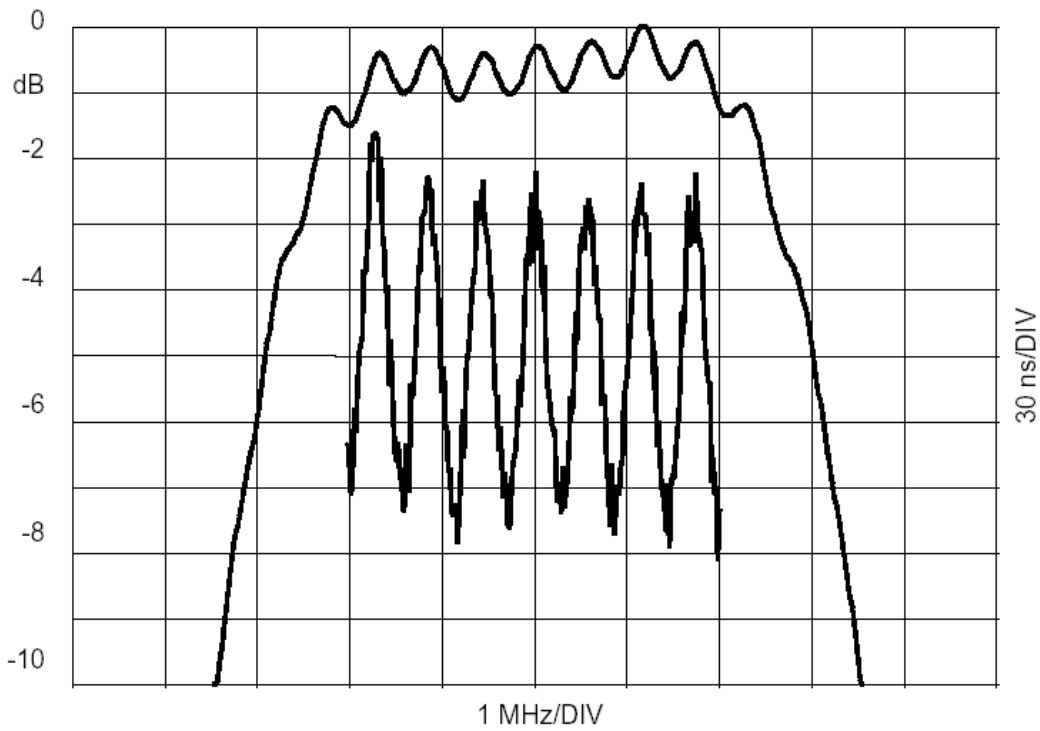
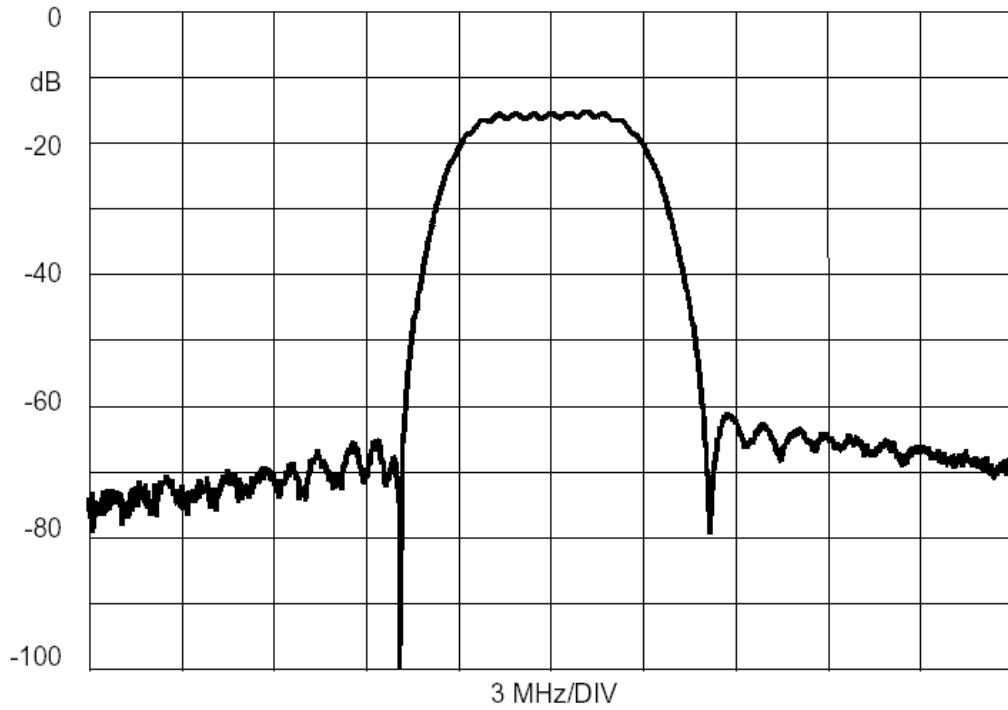
Matching to Unbalanced 50 Ω		External L-C
Case Style	6	SMP-03 7 x 5 mm Nominal Footprint
Lid Symbolization (YY = year, WW = week)		RFM SF1103A-1 YYWW

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. Tape and Reel Standard ANSI / EIA 481.
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. 

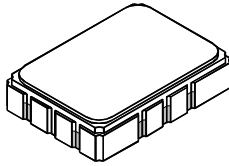
Electrical Connections

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

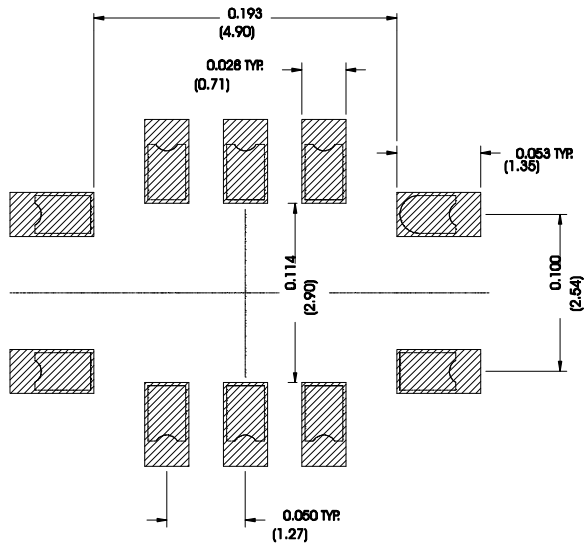


SMP-03 Case

10-Terminal Ceramic Surface-Mount Case 7 x 5 mm Nominal Footprint



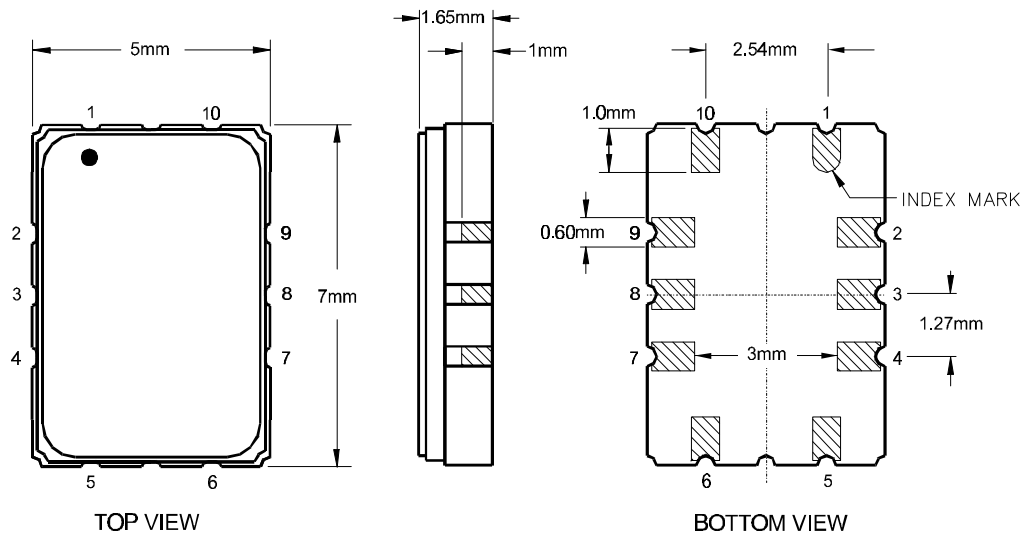
Recommended PCB Footprint



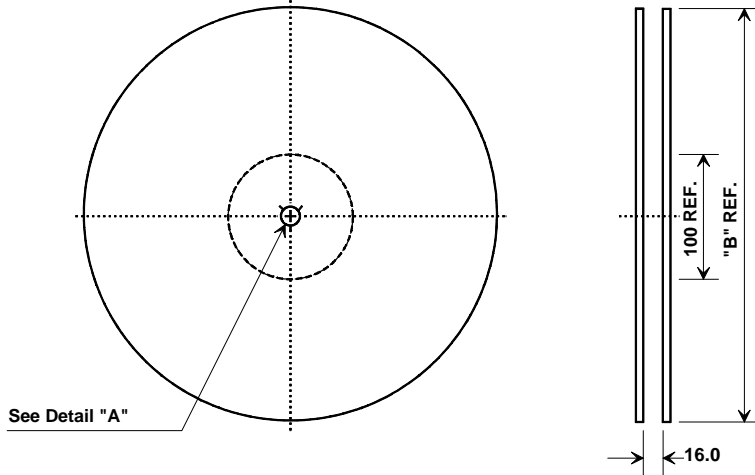
Case Dimensions						
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	6.80	7.00	7.20	0.268	0.276	0.283
B	4.80	5.00	5.20	0.189	0.197	0.205
C		1.65	2.00		0.065	0.079
D		0.60			0.024	
E		2.54			0.100	
H		1.0			0.039	
J		5.00			0.197	
K		3.00			0.118	
P		1.27			0.050	

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	

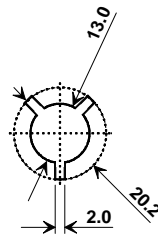


Tape and Reel Specifications



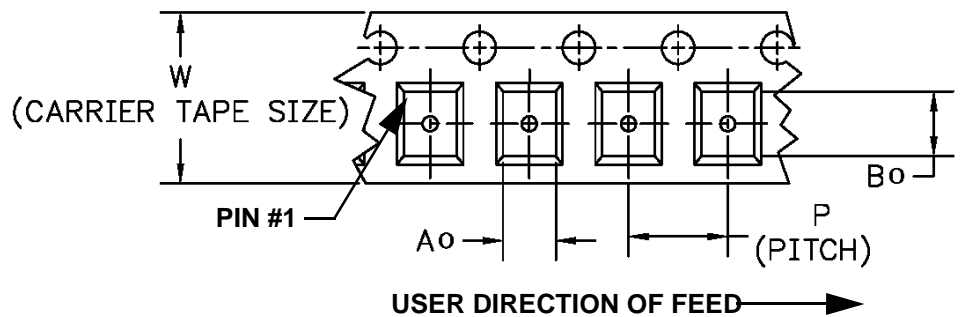
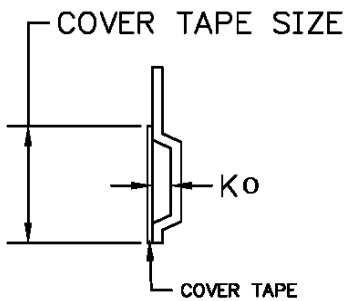
See Detail "A"

"B" Nominal Size		Quantity Per Reel
Inches	millimeters	
7	178	500
13	330	2000



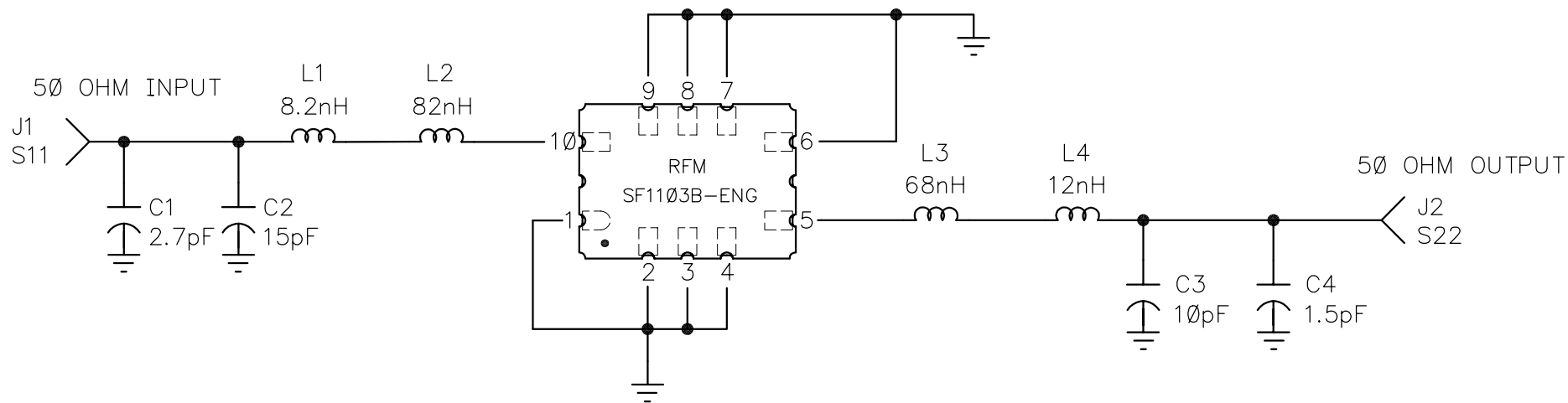
COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
Ao	5.5 mm
Bo	7.5 mm
Ko	2.0 mm
Pitch	8.0 mm
W	16.0 mm



NOTES:

REV	ECN NO.	DESCRIPTION	APP/DATE
A	9755	INITIAL RELEASE	12jul01



SCHEMATIC

D.U.T. VIEWED FROM TOP
 DOT INDICATES PIN 1 (INPUT)

DRAWN BY/DATE: J.F.Christopherson 12jul01

TITLE: ASSEMBLY DIAGRAM, SF1103B-DEMO

RF Monolithics, Inc.
 DALLAS, TEXAS 75244

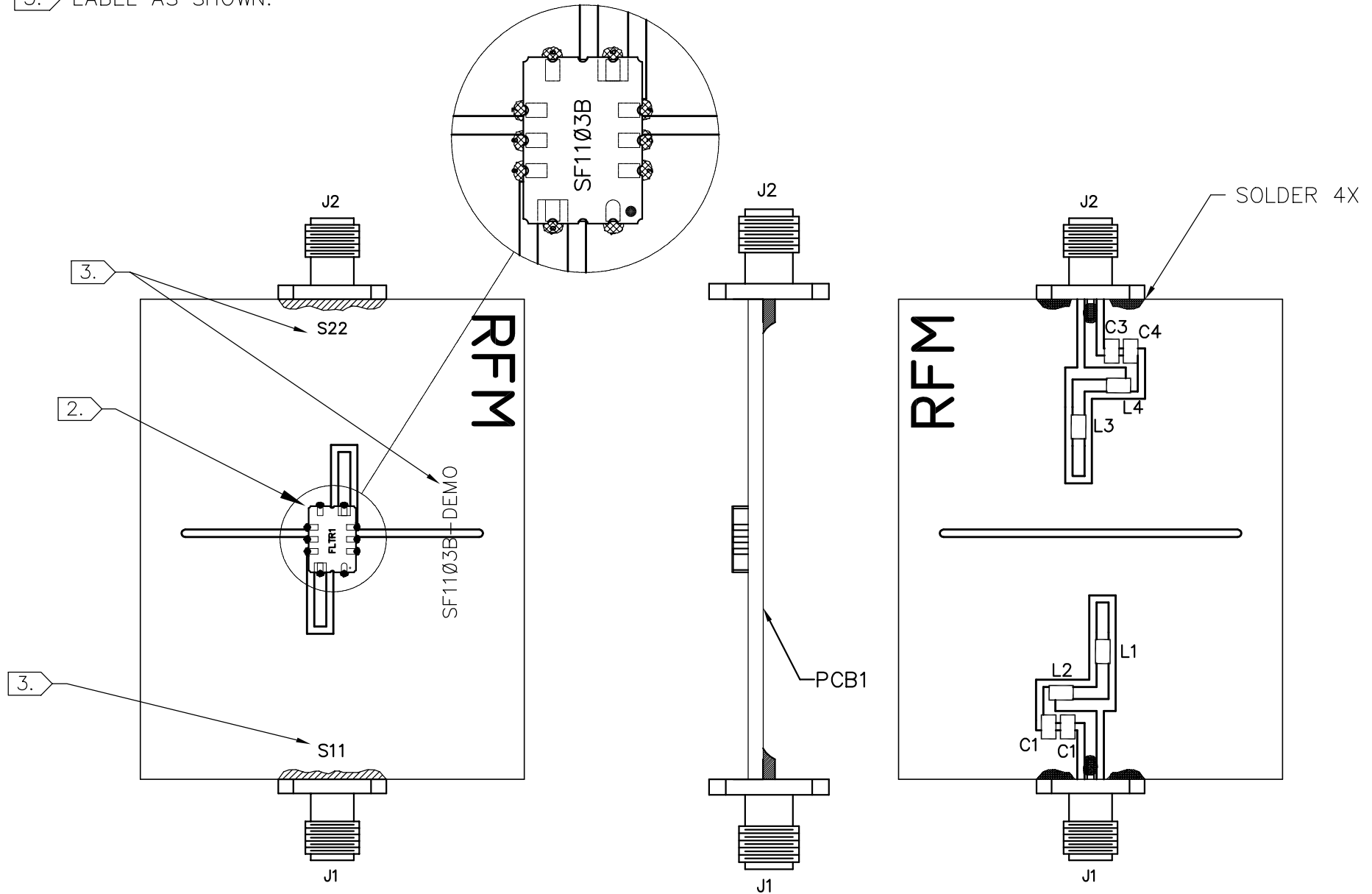
SIZE: **A**
 CODE IDENT: **2U874**

DWG. NO.: **SF1103B-100**

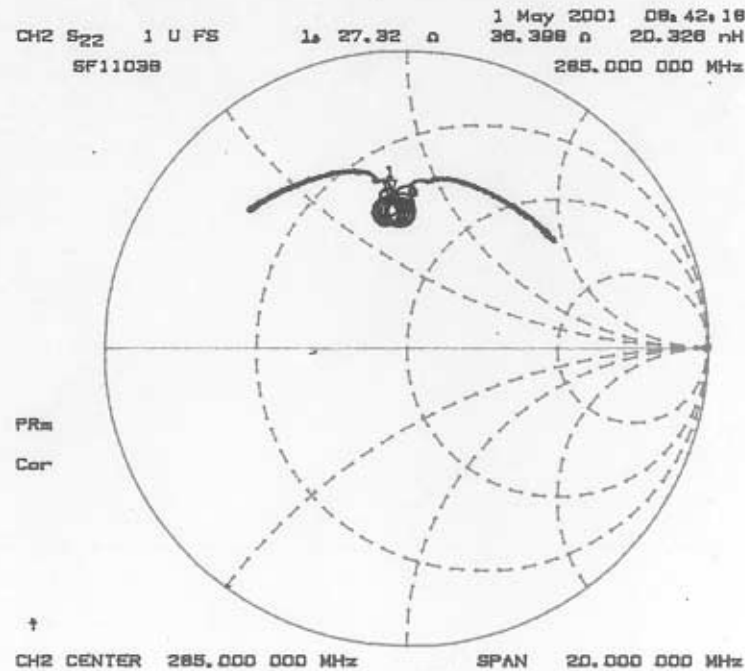
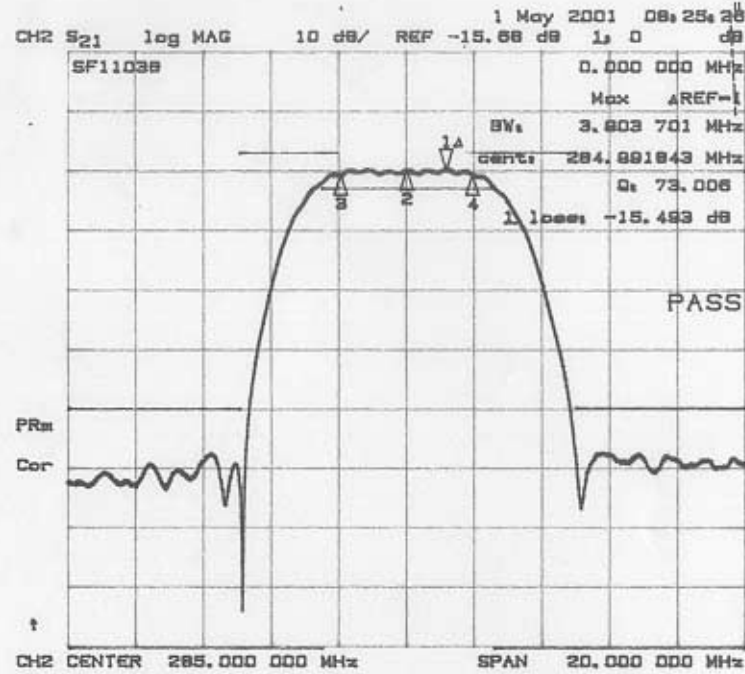
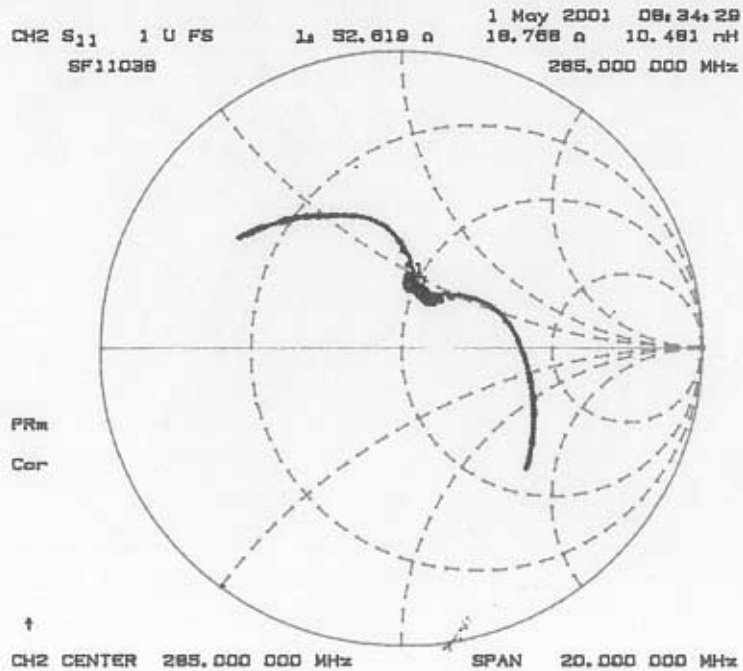
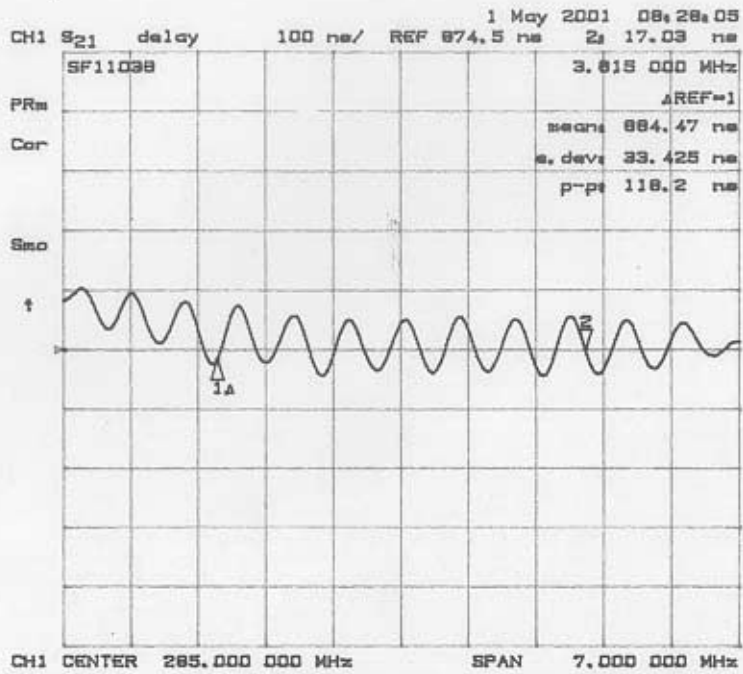
REV: **A** SHEET: **1/3**

NOTES:

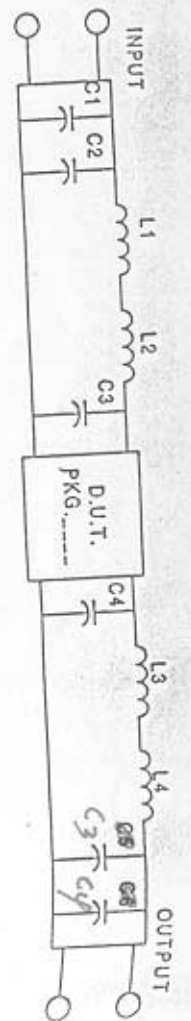
1. SOLDER MOUNT COMPONENTS AND CONNECTORS TO PCB1
2. ORIENT THE FLTR1 AND SOLDER IT DOWN TO THE BOARD AS SHOWN
3. LABEL AS SHOWN.



SF1103B Demo
5/1/01



C1 = 2.7pF
C2 = 15pF
C3 = 10pF
C4 = 5pF
C5 = 1pF
L1 = 8.2nH
L2 = 8.2nH
L3 = 8.2nH
L4 = 1nH



SF1103B-100 SHEET 3