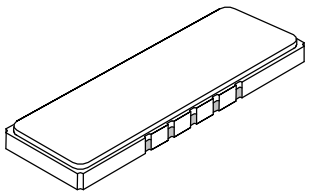
SF1088A

170.6 MHz SAW Filter

- ***Designed for GSM BTS Receiver IF Applications***
- ***Low Insertion Loss***
- ***Excellent Size-to-Performance Ratio***
- ***Hermetic SMP-75 Surface-Mount Case***
- ***Unbalanced Input and Output***
- ***Complies with Directive 2002/95/EC (RoHS)***



SMP-75

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	260°C for 30 s	

Electrical Characteristics

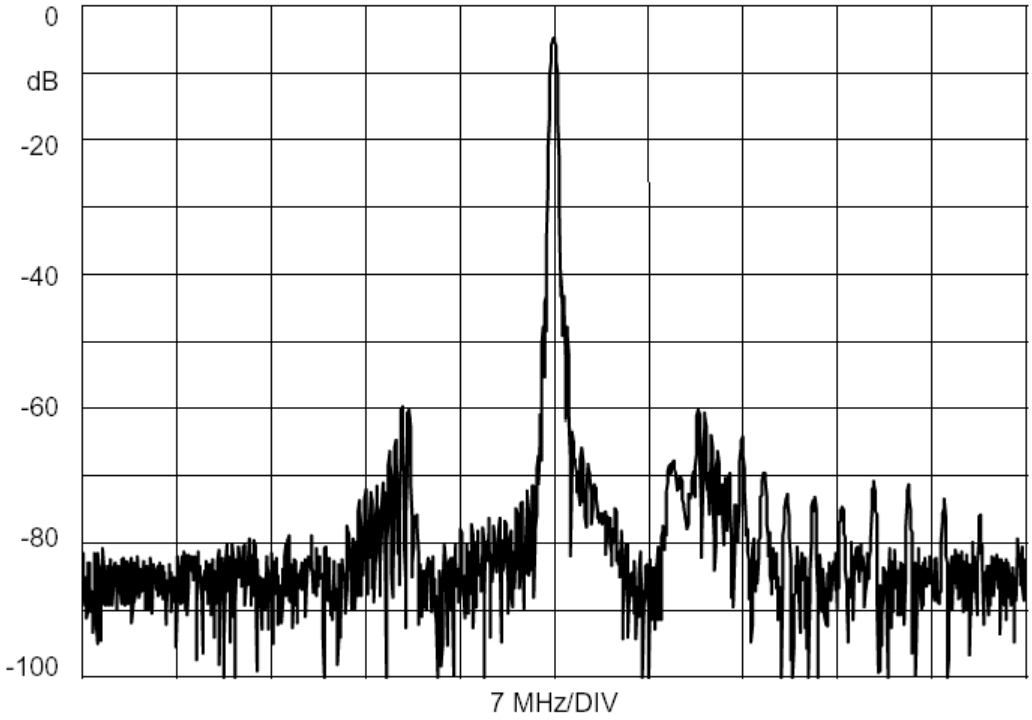
Characteristic		Sym	Notes	Min	Typ	Max	Units
Nominal Center Frequency		f_C	1		170.600		MHz
Passband	Insertion Loss at fc	IL				8.0	dB
	1 dB Passband		1, 2	±90			kHz
	Amplitude Ripple over fc±90 kHz					1.0	dB_{P-P}
	Group Delay Variation over fc ±190 kHz	GDV			<500	1000	ns_{P-P}
Rejection	fc-0.6 to fc-0.4 and fc+0.4 to fc+0.6 MHz		1, 2, 3	13	15		dB
	fc-0.8 to fc-0.6 and fc+0.6 to fc+0.8 MHz			27	35		
	fc-1.6 to fc-0.8 and fc+0.8 to fc+1.6 MHz			40	45		
	fc-3.0 to fc-1.6 and fc+1.6 to fc+3.0 MHz			43	55		
	fc-5.8 to fc-3.0 and fc+3.0 to fc+5.8 MHz			47	55		
	fc-35 to fc-5.8 and fc+5.8 to fc+35 MHz			50	55		
	fc-75 to fc-35 and fc+35 to 75 MHz			45	55		
	DC to fc-75 and fc+75 to fc+1000 MHz			40			
Operating Temperature Range		T_A	1	-10		+85	°C

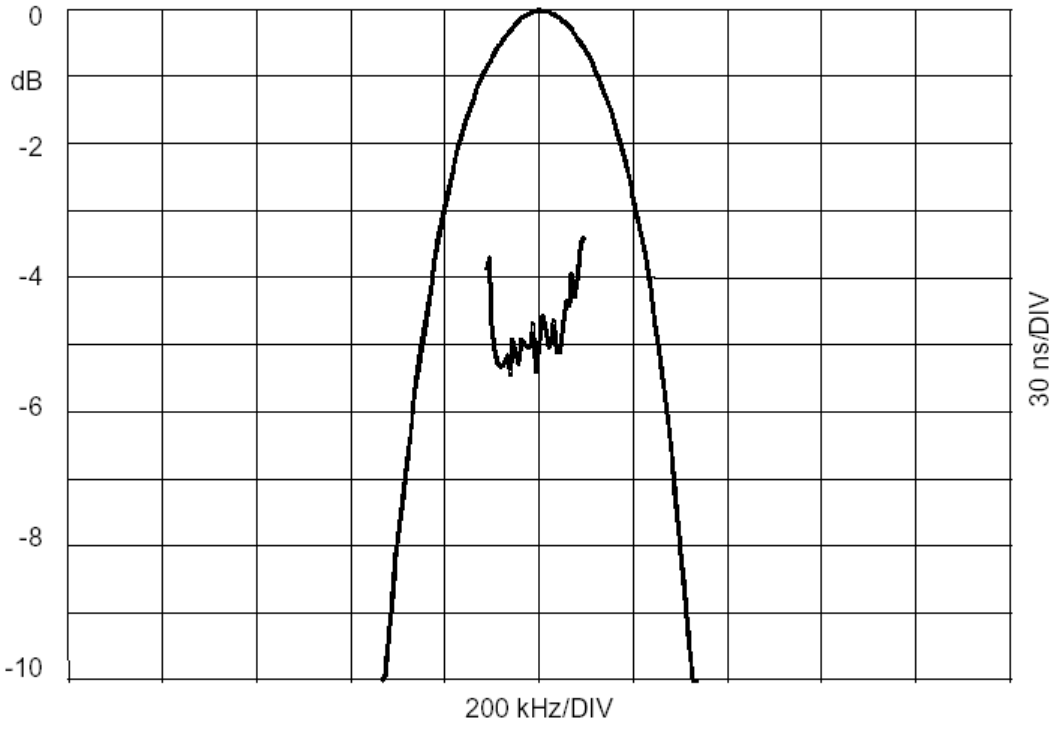
Impedance Matching to 50 Ω unbalanced	External L-C
Case Style	SMP-75 19 x 6.5 mm Nominal Footprint
Lid Symbolization (YY = year, WW = week)	RFM SF1088A YYWW

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 W 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 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. 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.
7. US and international patents may apply.
8. Electrostatic Sensitive Device. Observe precautions for handling.

Electrical Connections

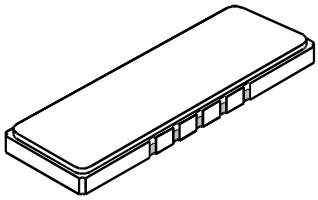
Connection	Terminals
Port 1 Hot	10
Port 1 Gnd Return	1
Port 2 Hot	5
Port 2 Gnd Return	6
Case Ground	All others





SMP-75 Case

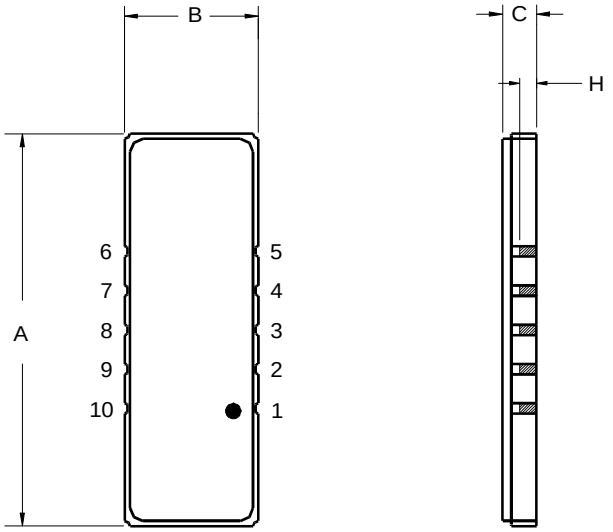
10-Terminal Ceramic Surface-Mount Case
19 x 6.5 mm Nominal Footprint



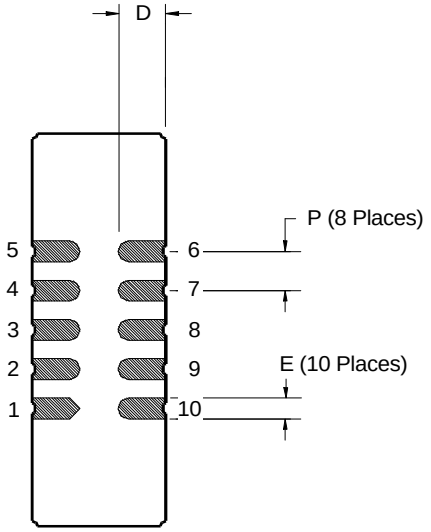
Case Dimensions						
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	18.80	19.00	19.30	0.740	0.748	0.760
B	6.30	6.50	6.80	0.248	0.256	0.268
C		1.75	2.00		0.069	0.079
D		2.29			0.090	
E		1.02			0.040	
H		1.0			0.039	
P		1.905			0.075	

Materials	
Solder Pad Termination	Au plating 30 - 60 µinches (76.2-152 µm) over 80-200 µinches (203-508 µm) Ni.
Lid	Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 µinches Thick
Body	Al_2O_3 Ceramic
Pb Free	

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**



TOP VIEW

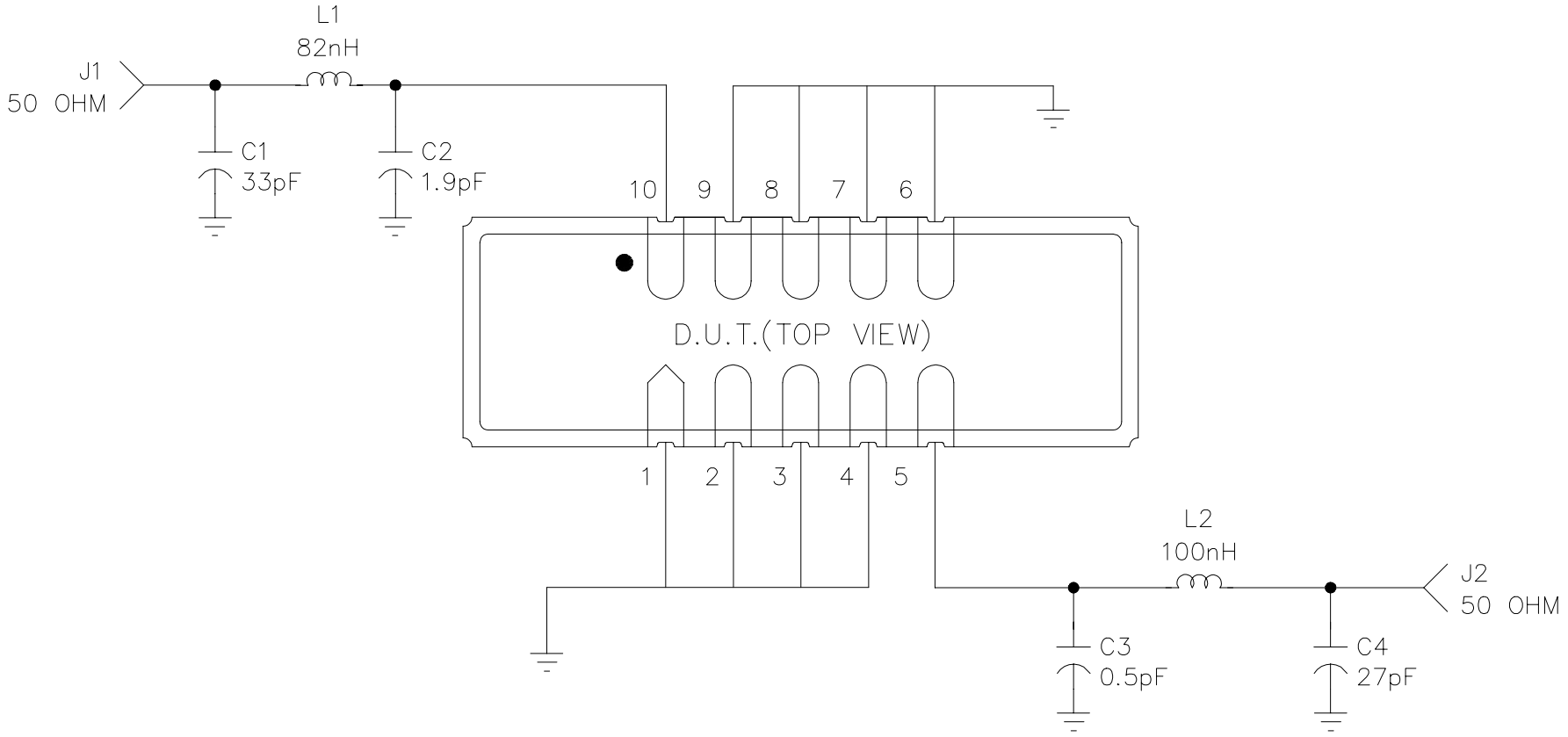


BOTTOM VIEW

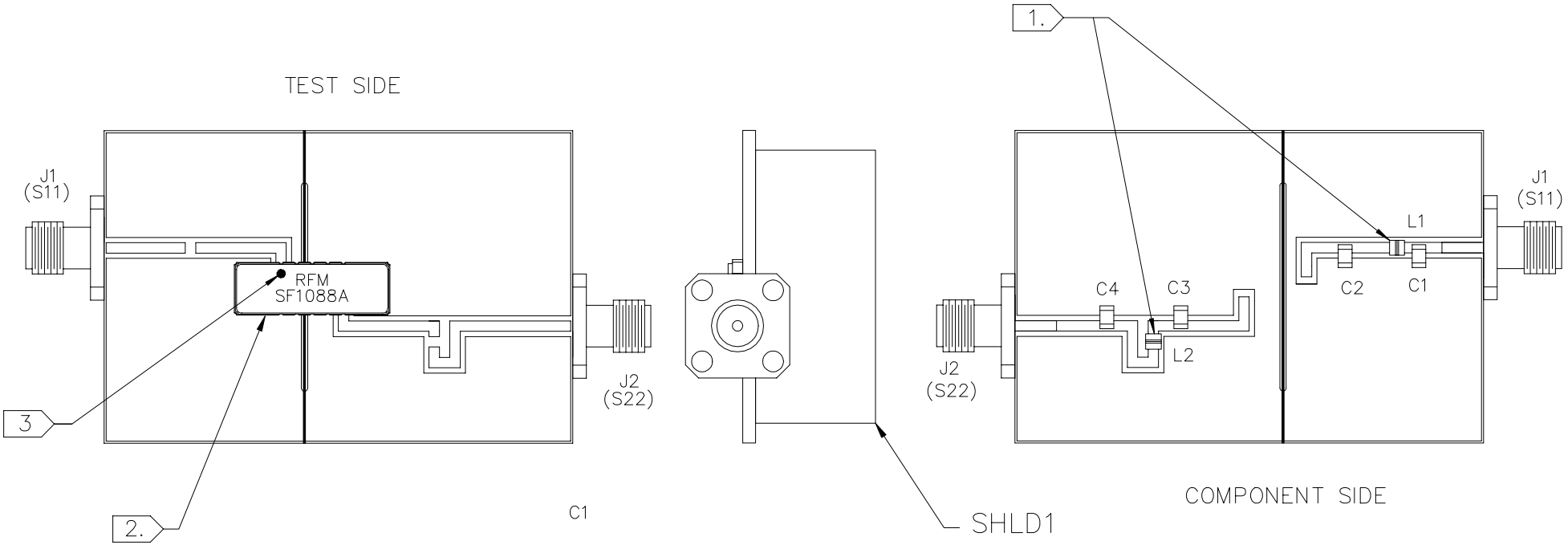
NOTES:

1. NOTE PROPER ORIENTATION OF INDUCTORS L1 & L2. THEY ARE TO BE POSITIONED 90° TO EACH OTHER.
2. SOLDER SURFACE MOUNT PACKAGE TO TEST SIDE OF PCB. SOLDER 10 PLACES AS SHOWN.
3. PACKAGE PIN 10 INDICATOR

REV	ECN NO.	DESCRIPTION	DATE
A	6724	INITIAL RELEASE	5/28/98
B	7000	ROTATE VIEW 180	3SEP98

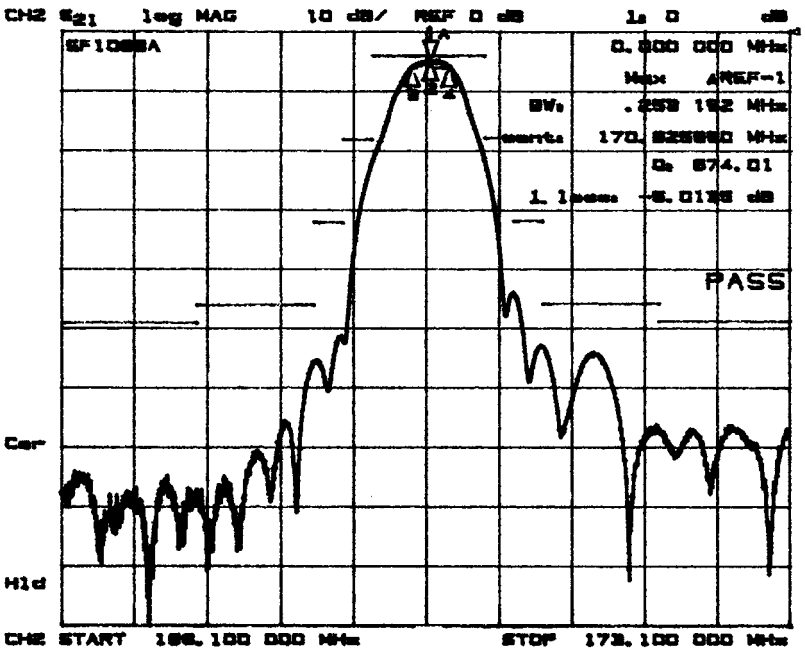


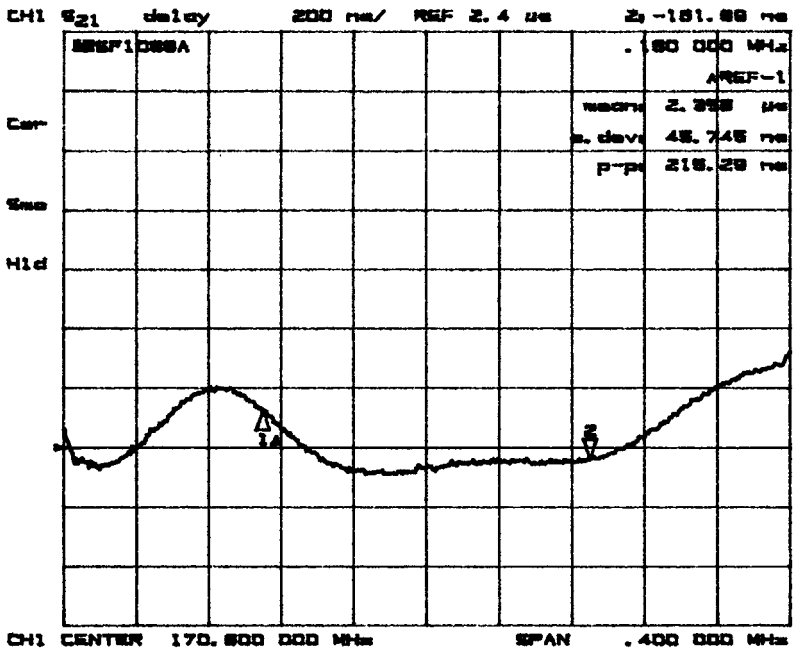
DRAWN BY/DATE: J. LAYTON 05/28/98			TITLE: ASSEMBLY DIAGRAM, SF1088A(DEMO)				
RF Monolithics, Inc. DALLAS, TEXAS 75244	CHECKED/APPROVED	SIZE A	CODE IDENT 2U874	DWG. NO. SF1088A-000		REV B	SHEET 1/3

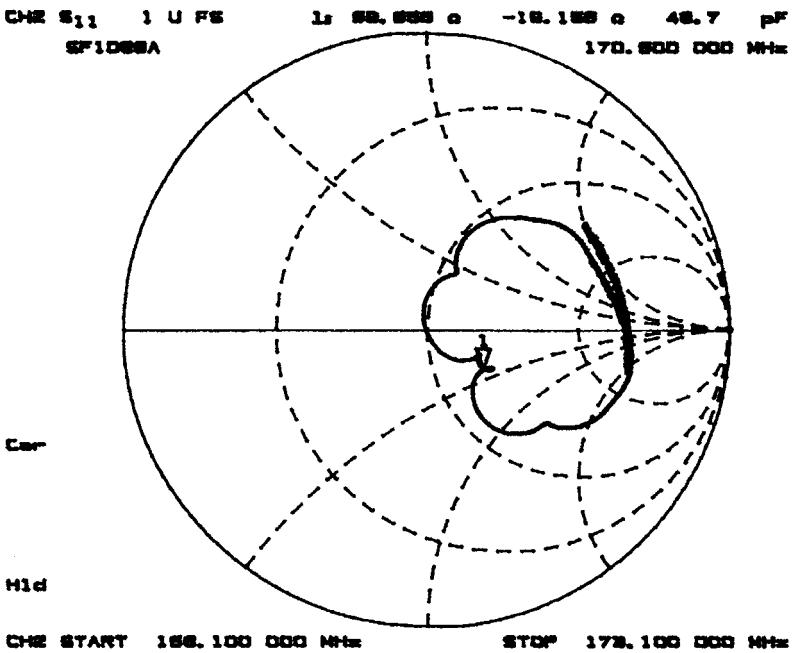


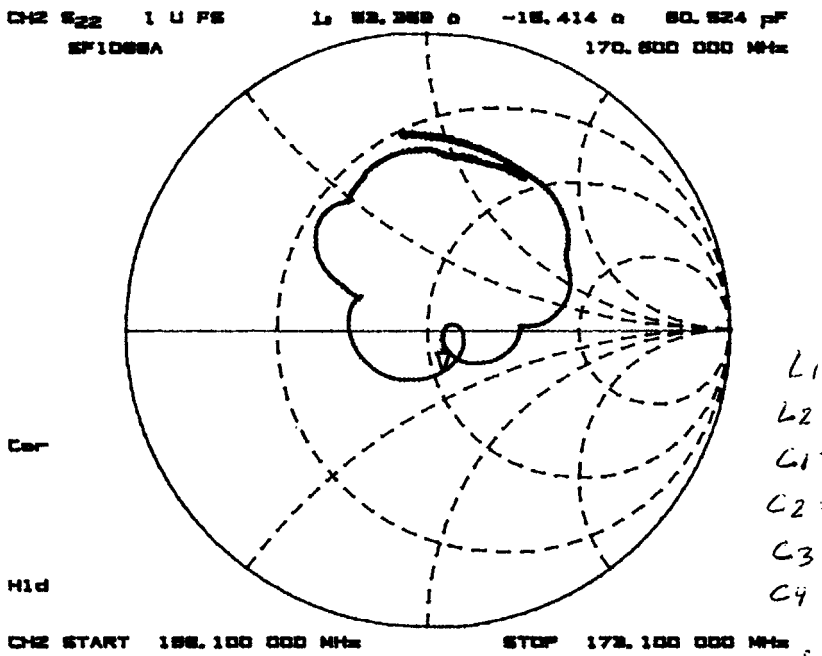
RF Monolithics, Inc. DALLAS, TEXAS 75244		SIZE A	CODE IDENT 2U874	DWG. NO. SF1088A-000	REV B	SHEET 2

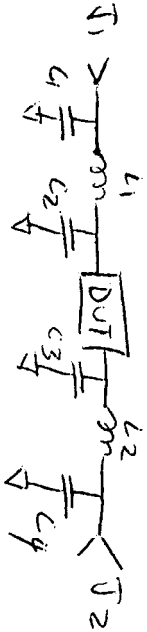
SF1088A
(DEMO)
4-28-98











$L_1 = 82nH$
$L_2 = 100nH$
$C_1 = 33pF$
$C_2 = 1.9\ pF$
$C_3 = 0.5pF$
$C_4 = 27pF$

REV: ~~A~~ Sht 3/3

BILL OF MATERIALS

PART IDENTIFIER	DESCRIPTION 1	DESCRIPTION 2	QTY/ASSY	REFERENCE DESCRIPTION
SF1088A-DEMO	DEMO BOARD,SF1088A			
400-1387-001	PCB,DEMO BOARD,19MM		1.0000	
400-0533-001	SHIELD,TO-39 TEST FIXTURE		1.0000	
SF1088A-000	ASSY DIAGRAM,DEMO BOARD,	SF1088A	0	
SF1088A-LRIP	FILTER,SM,170.600MHZ		1.0000	
500-0003-330	CAP,CHIP,NPO,33(J),STD		1.0000	C 1
500-0003-019	CAP,CHIP,NPO,1.9(C),STD		1.0000	C 2
500-0003-005	CAP,CHIP,NPO,0.5(C),STD		1.0000	C 3
500-0003-270	CAP,CHIP,NPO,27(J),STD		1.0000	C 4
500-0248-001	CONN,COAX,FLANGE MT.JACK	4 HOLE	2.0000	J 1,2
500-0781-820	IND,CHIP,0805CS,82NH,2%		1.0000	L 1
500-0781-101	IND,CHIP,0805CS,100NH,2%		1.0000	L 2

	SIZE	FSCM NO.	DWG NO.
RFMI	A	2U874	SF1088A-DEMO
SCALE NONE	W/O or ECN 6724	REV A	SHEET 1 OF 2

REV HISTORY

REV	ECN	DATE	DESCRIPTION
A	6724	06/01/98	INITIAL RELEASE

FRFM	SIZE A	FSCM NO. 2U874	DWG NO. SF1088A-DEMO	
SCALE NONE	W/O or ECN 6724	REV A	SHEET 2 OF 2	