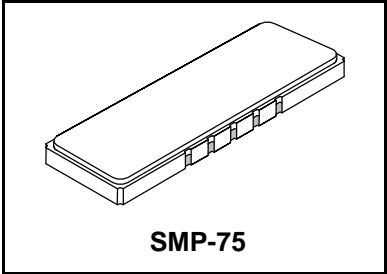





# SF1088A

## 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)** 

### 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 $f_c$	1, 2	$\pm 90$		8.0	dB
					1 dB Passband	
	Amplitude Ripple over $f_c \pm 90$ kHz				1.0	dB <sub>p-p</sub>
	Group Delay Variation over $f_c \pm 190$ kHz			<500	1000	ns <sub>p-p</sub>
Rejection	fc-0.6 to fc-0.4 and fc+0.4 to fc+0.6 MHz	1, 2, 3	13	15		dB
			27	35		
			40	45		
			43	55		
			47	55		
			50	55		
			45	55		
	DC to fc-75 and fc+75 to fc+1000 MHz		40			
Operating Temperature Range	$T_A$	1	-10		+85	°C

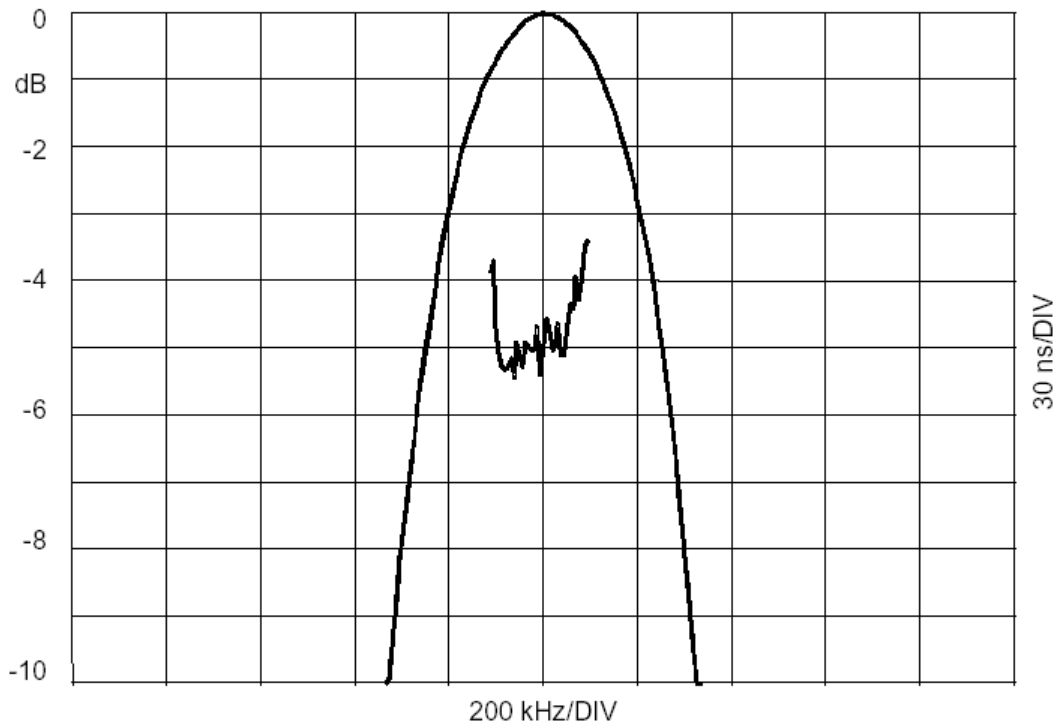
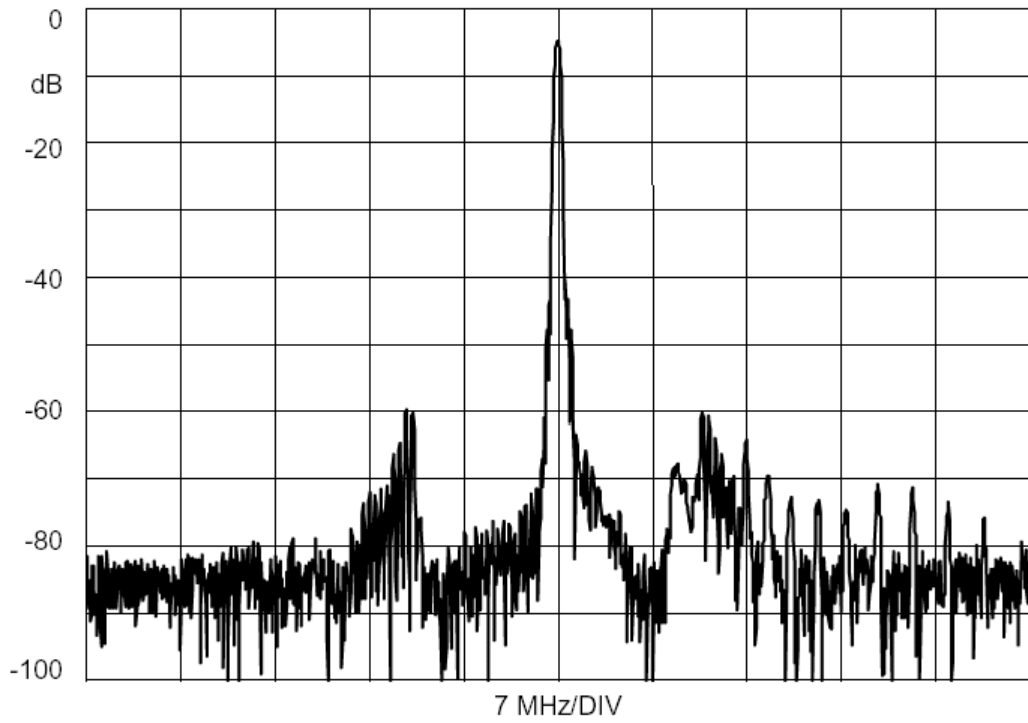
Impedance Matching to 50 $\Omega$ unbalanced	External L-C
Case Style	SMP-75 19 x 6.5 mm Nominal Footprint
Lid Symbolization (YY = year, WW = week)	RFM SF1088A YYWW

### 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  $\Omega$  and measured with 50  $\Omega$  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. 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. 

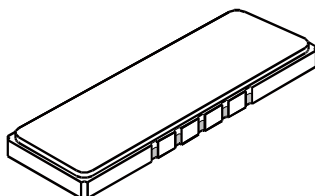
### Electrical Connections

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

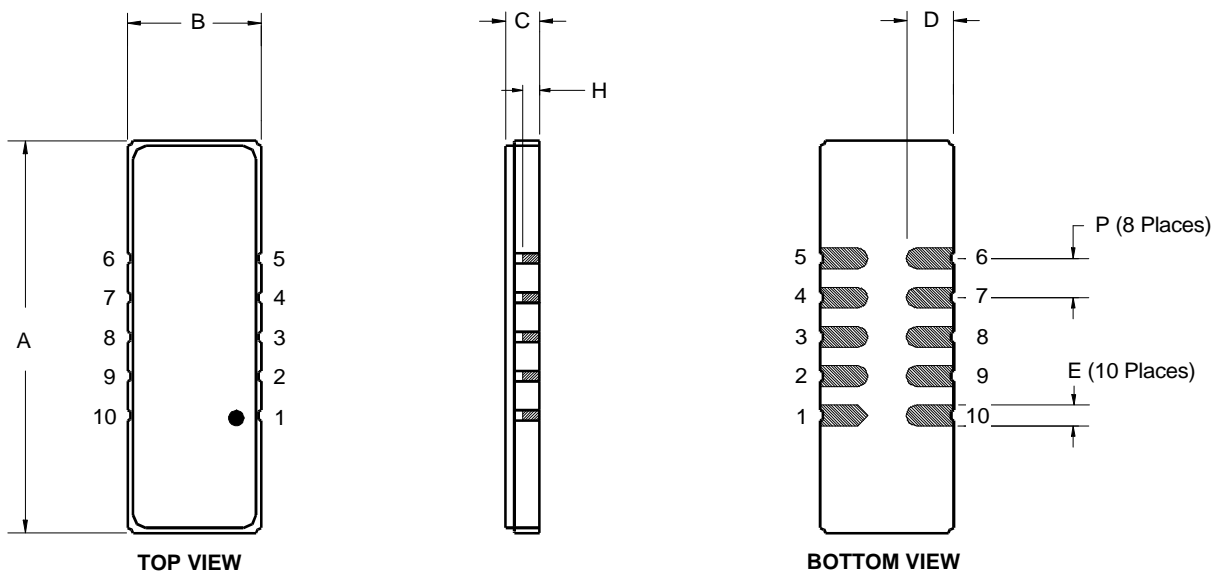
10-Terminal Ceramic Surface-Mount Case  
19 x 6.5 mm Nominal Footprint



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 <sub>2</sub> O <sub>3</sub> Ceramic
Pb Free	

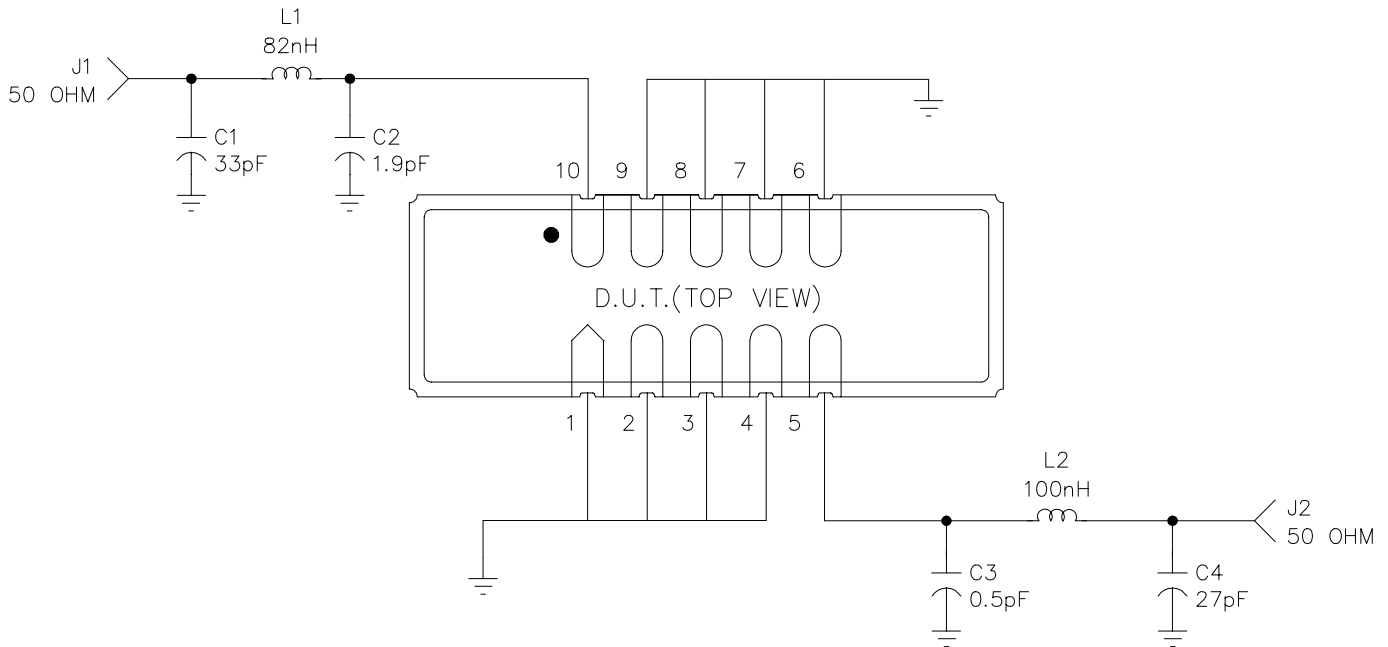
Electrical Connections		
Connection		Terminals
Port 1	Input or Return	10
	Return or Input	1
Port 2	Output or Return	5
	Return or Output	6
Ground		All others
Single Ended Operation		Return is ground
Differential Operation		Return is hot



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

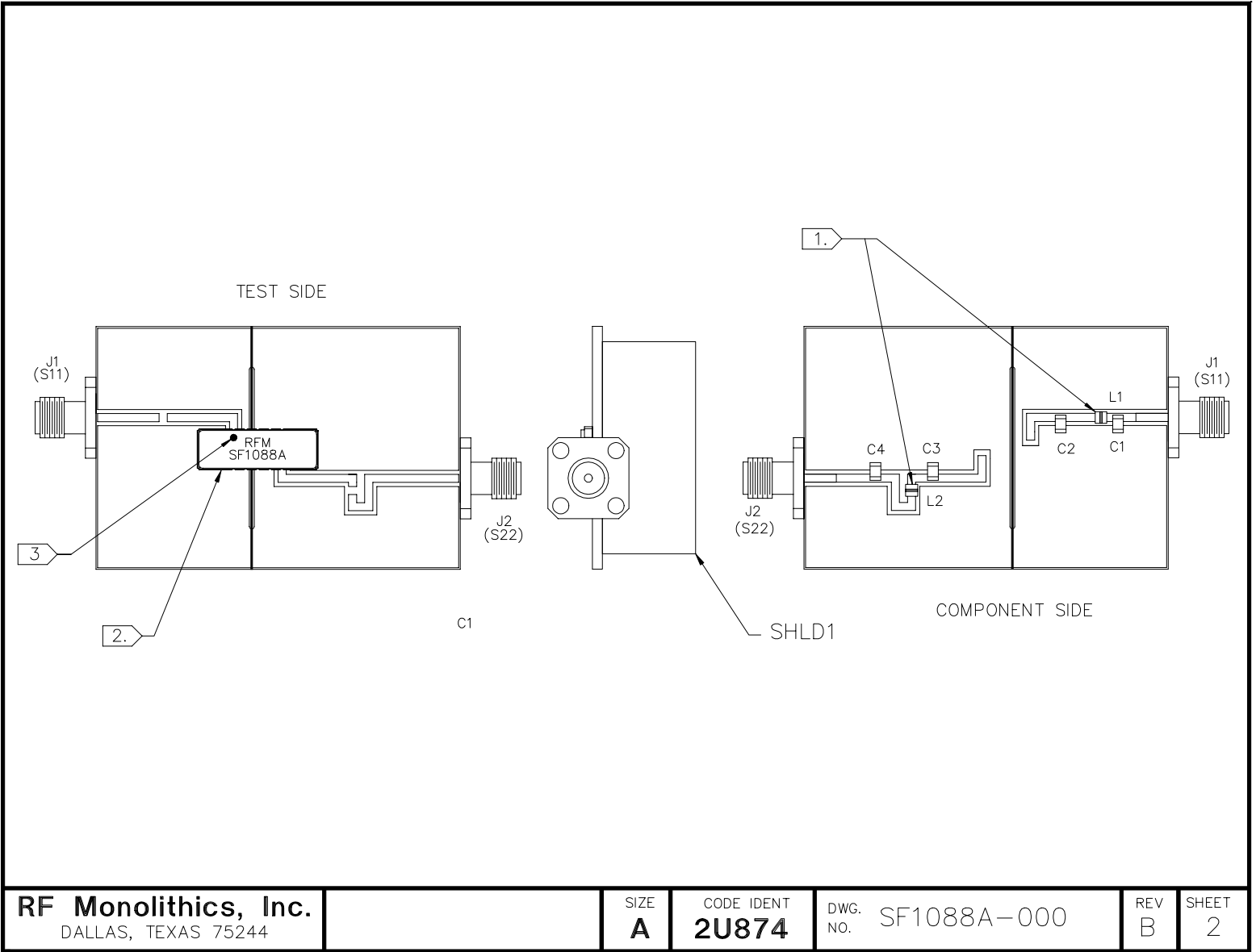
SIZE  
**A**

CODE IDENT  
**2U874**

DWG. NO. SF1088A-000

REV  
**B**

SHEET  
**1/3**



**RF Monolithics, Inc.**  
DALLAS, TEXAS 75244

SIZE  
**A**

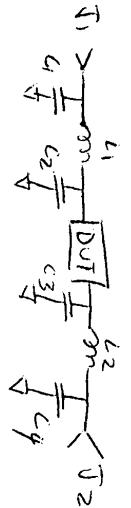
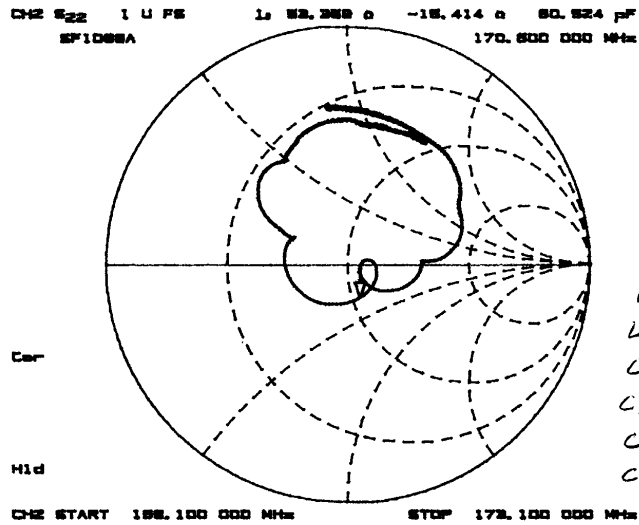
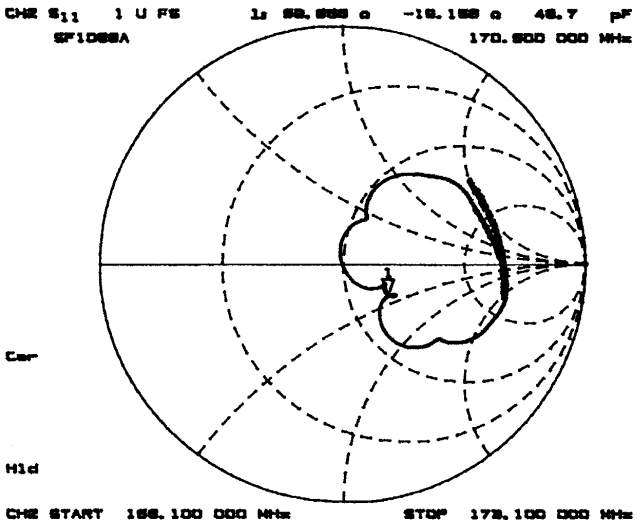
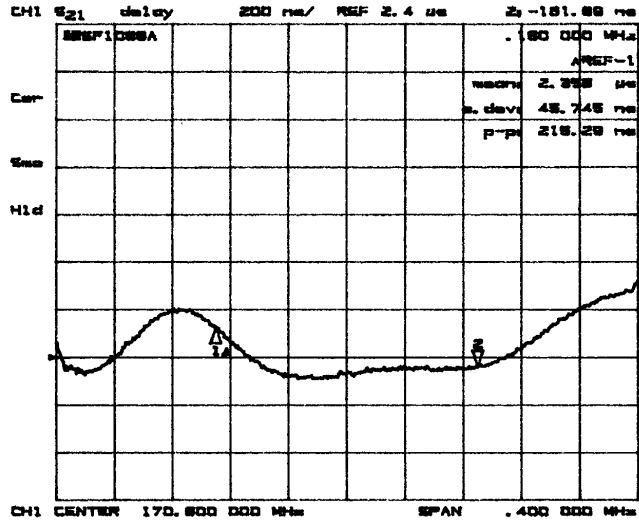
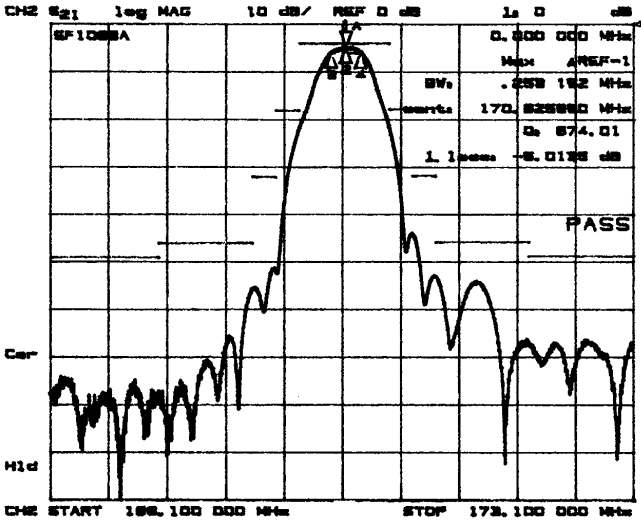
CODE IDENT  
**2U874**

DWG. NO. SF1088A-000

REV  
**B**

SHEET  
**2**

SF1088A  
(DEMO)  
4-28-98



- L<sub>1</sub> = 82 nH
- L<sub>2</sub> = 100 nH
- C<sub>1</sub> = 33 pF
- C<sub>2</sub> = 1.9 pF
- C<sub>3</sub> = 0.5 pF
- C<sub>4</sub> = 27 pF

REV: ~~ASLT~~ 3/3

### BILL OF MATERIALS

<u>PART IDENTIFIER</u>	<u>DESCRIPTION 1</u>	<u>DESCRIPTION 2</u>	<u>QTY/ASSY</u>	<u>REFERENCE DESCRIPTION</u>
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

**A**

FSCM NO.

**2U874**

DWG NO.

**SF1088A-DEMO**

SCALE

**NONE**

W/O or ECN

**6724**

REV

**A**

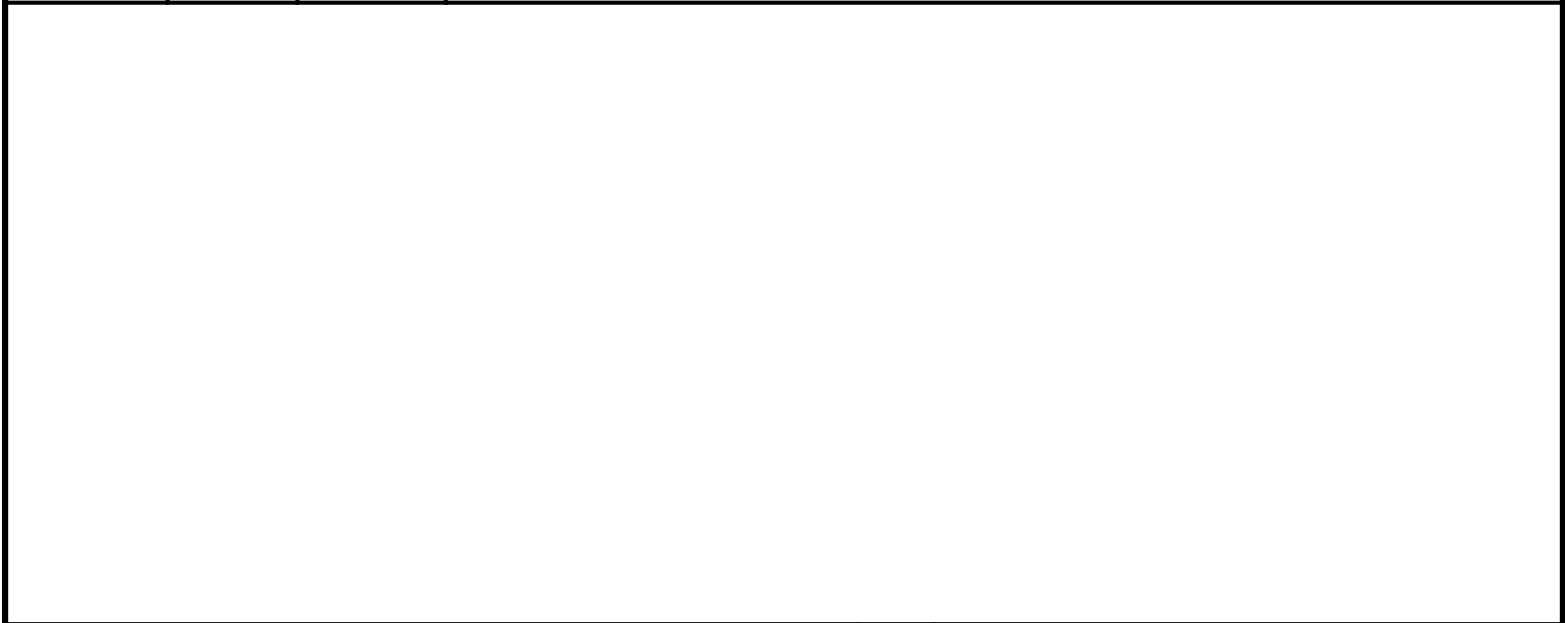
SHEET

**1**

OF **2**

**REV HISTORY**

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



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