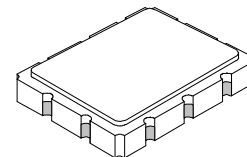


SF1080A 499.25 MHz SAW Filter



- Designed for CATV Applications (Pilot Tone)
- Tightly Controlled Insertion Loss
- 9.1 x 7.1 mm Surface-Mount Case
- Unbalanced Input and Output



Characteristic	Sym	Min	Typ	Max	Units	Notes
Nominal Center Frequency	fc		499.250		MHz	1
Passband	Insertion Loss at fc	IL	6.0	7.5	9.0	dB
	0.5 dB Passband	BW _{0.5}	±100			
	3 dB Passband	BW ₃	±800	±970		
	Amplitude Ripple over fc ±100 kHz			0.5	dB _{P-P}	
Rejection	fc-200 to fc-3.0 and fc+3.0 to fc+200 MHz		35		dB	1, 2, 3
	Ultimate		40			
Operating Temperature Range	T _A	-25		+75	°C	1

Impedance Matching to 50 Ω unbalanced	External L-C
Case Style	SM9171-10 9.1 x 7.1 mm Nominal Footprint
Lid Symbolization (XX = 2-character date code)	RFM SF1080A XX

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 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

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 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. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.
9. ©Copyright 1999, RF Monolithics Inc.
10. Electrostatic Sensitive Device. Observe precautions for handling.

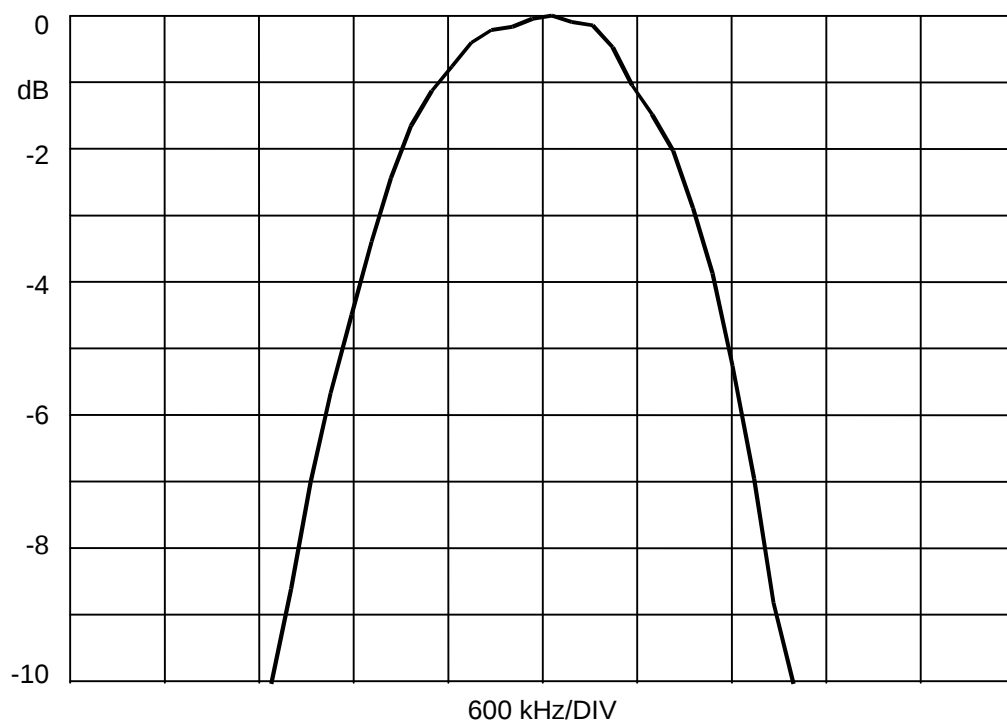
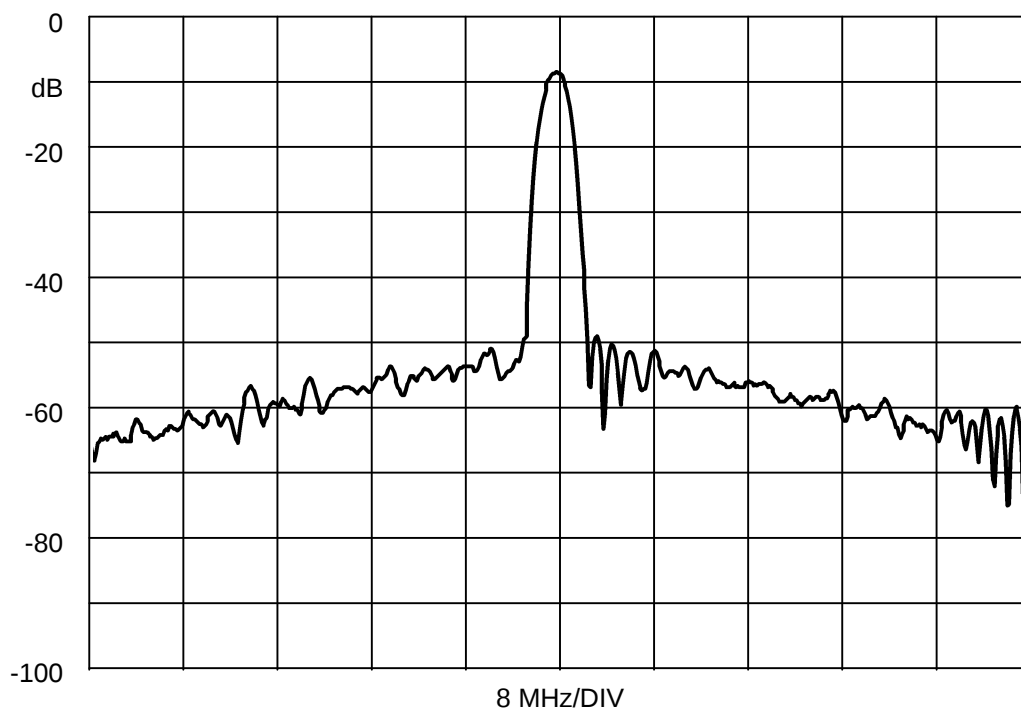


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Home page: www.rfm.com

European Sales Office
44 1963 251383
44 1963 251510

SF1080A 499.25 MHz SAW Filter

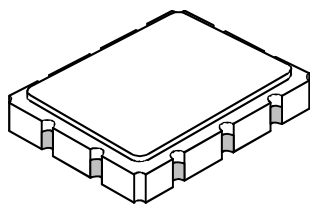


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10-Terminal Ceramic Surface-Mount Case 9.1 x 7.1 mm Nominal Footprint

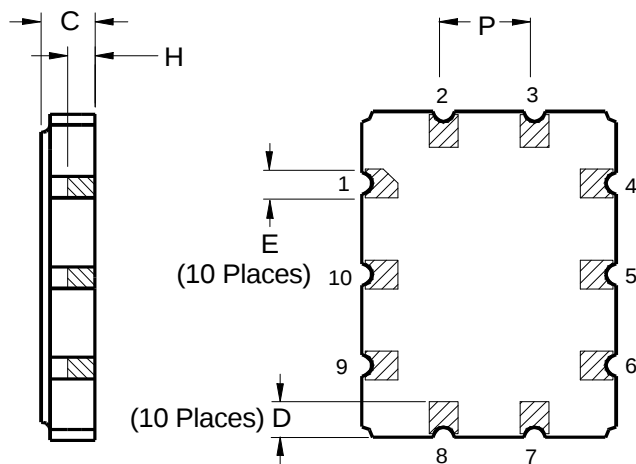
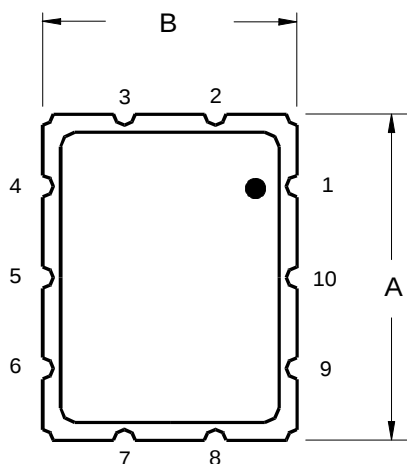


Case Dimensions

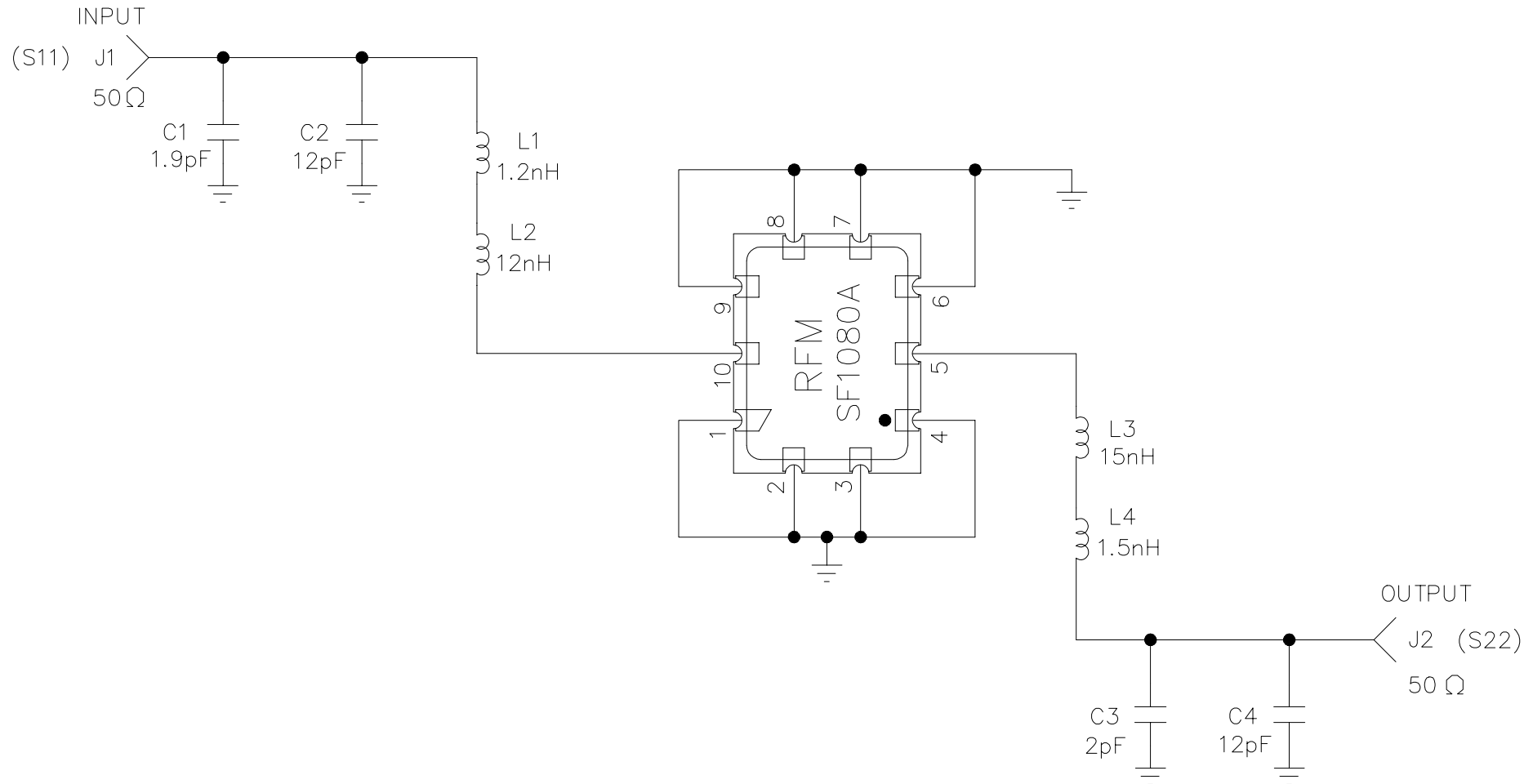
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	8.86	9.09	9.40	0.349	0.358	0.370
B	6.88	7.11	7.40	0.271	0.280	0.291
C		1.91	2.00		0.075	0.079
D		0.99			0.039	
E		0.79			0.031	
H		1.0			0.039	
P		2.54			0.100	

Electrical Connections

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



REV	ECN NO.	DESCRIPTION	APP/DATE
A	6122	INITIAL RELEASE	
B	7046	CHANGE TUNING NETWORK	22SEP98



SCHEMATIC

DRAWN BY/DATE: J.J. LAYTON 12/03/97

TITLE: ASSEMBLY DIAGRAM, SF1080A(DEMO)

RF Monolithics, Inc.
DALLAS, TEXAS 75244

CHECKED/APPROVED

SIZE
A

CODE IDENT
2U874

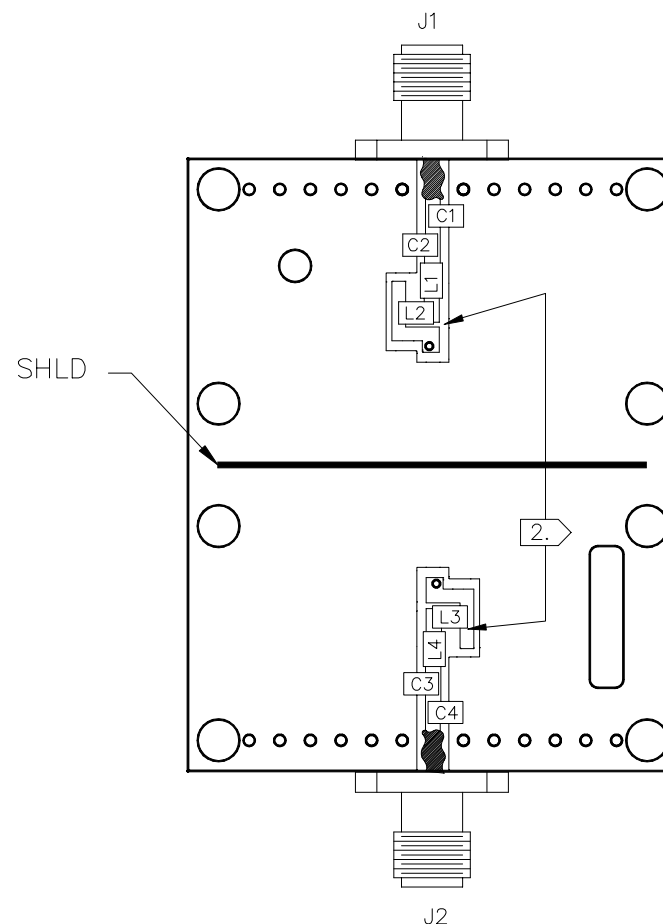
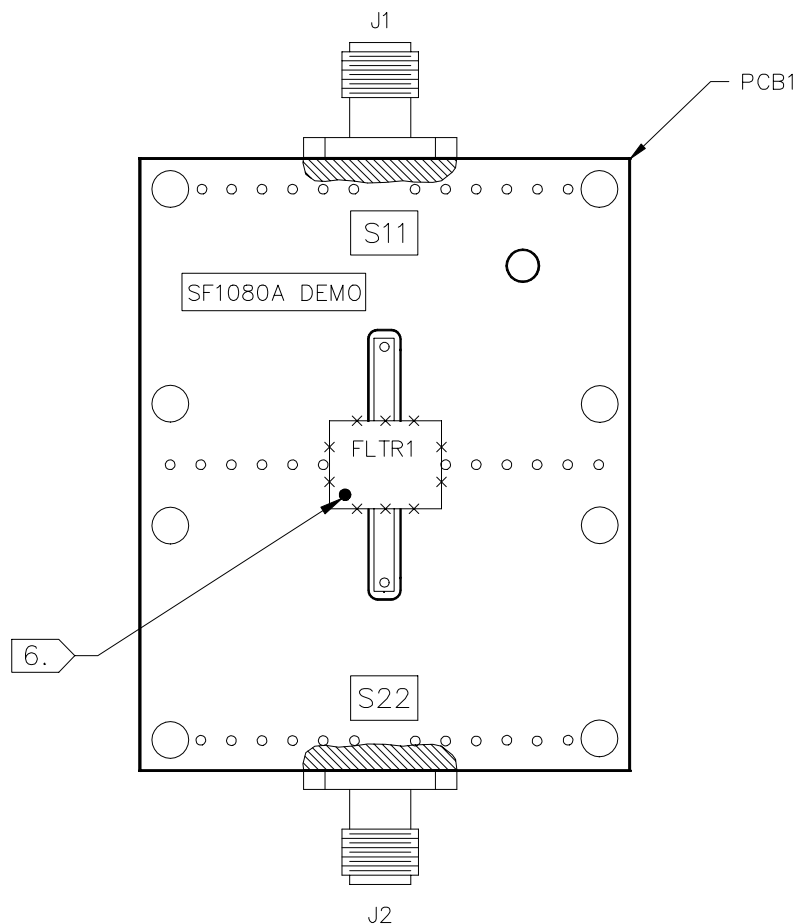
DWG. NO. SF1080A-000

REV
B

SHEET
1/4

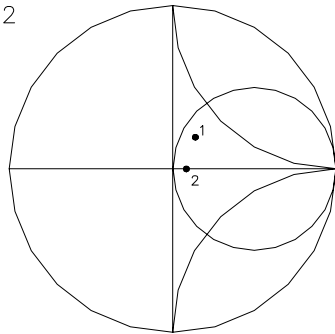
NOTES:

1. SOLDER MOUNT COMPONENTS, CONNECTORS, SHLD, TO PCB1
2. NOTE PROPER ORIENTATION OF INDUCTORS [L1, L2] SHOULD BE 90° TO EACH OTHER.
3. COMPONENTS MAY NEED TO BE TRADED FOR SLIGHTLY HIGHER OR LOWER DUE TO TOLERANCE LEVELS.
4. SEE ATTACHED NOTES FOR INSTRUCTIONS ON HOW TO "FINE TUNE" ONCE DEMO IS BUILT.
5. ATTACH LABELS.
6. NOTE PROPER ORIENTATION OF SAW DEVICE.

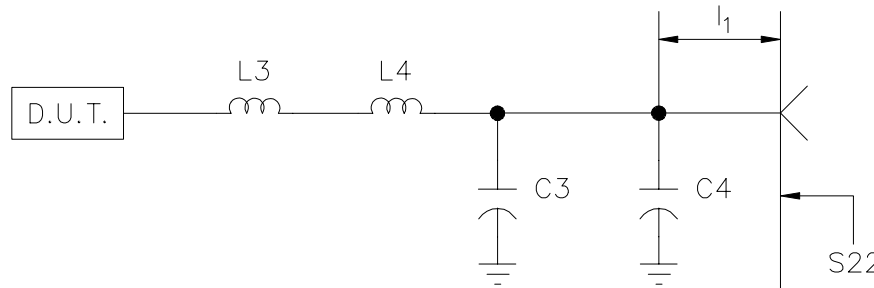


INSTRUCTIONS TO "FINE TUNE" THE DEMO BOARD.

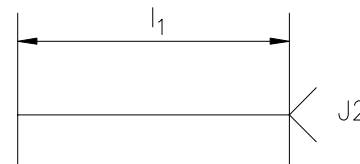
S22



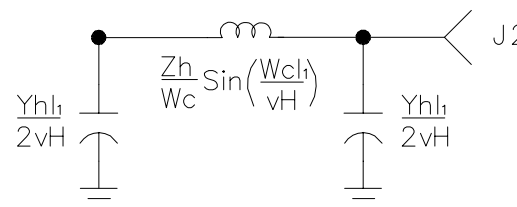
SMITH CHART



l_1 = Length of Transmisson Line



Model of Transmission Line(l_1)



THESE INSTRUCTIONS ARE BASED ON MY OWN OBSERVATION WHEN TUNING THE DEMO BOARD. REFERRING TO THE SMITH CHART(S22); TO MOVE FROM LOCATION(1) TO LOCATION(2), A REDUCTION IN SERIES INDUCTANCE, CAUSED BY THE TRANSMISSION LINE IS NEEDED. TO REDUCE THIS INDUCTANCE, MOVE C4 CLOSER TO J2. THIS WILL REDUCE l_1 WHICH IN TURN REDUCES THE INDUCTANCE MOVE TO LOCATION(2).

THE CAPACITORS CAN BE MOVED ALONG THE TRANSMISSION LINE TOWARDS THE D.U.T. OR CONNECTORS (J1 or J2) TO "FINE TUNE" THE D.U.T. TO 50 Ω .

Figure #1

SF1080A

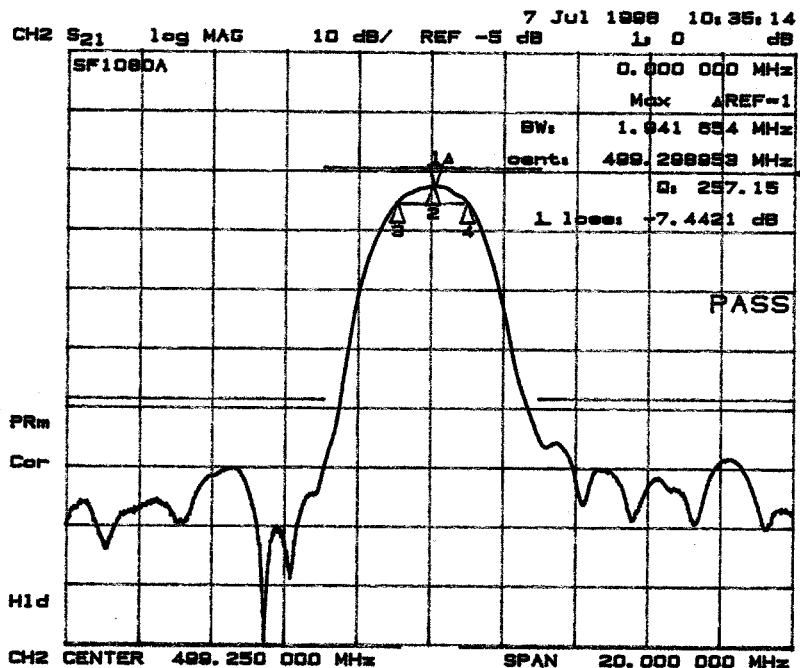
E#N/A

Ref#1

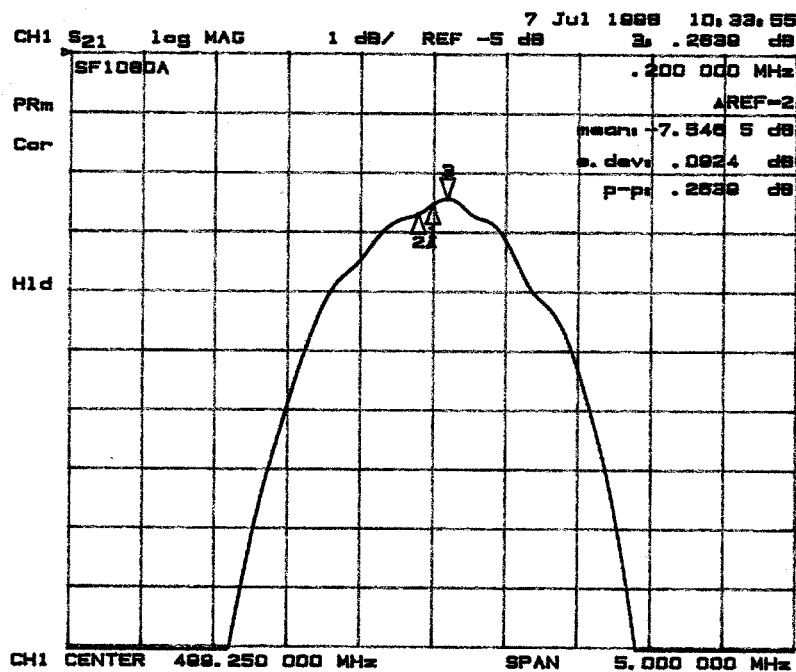
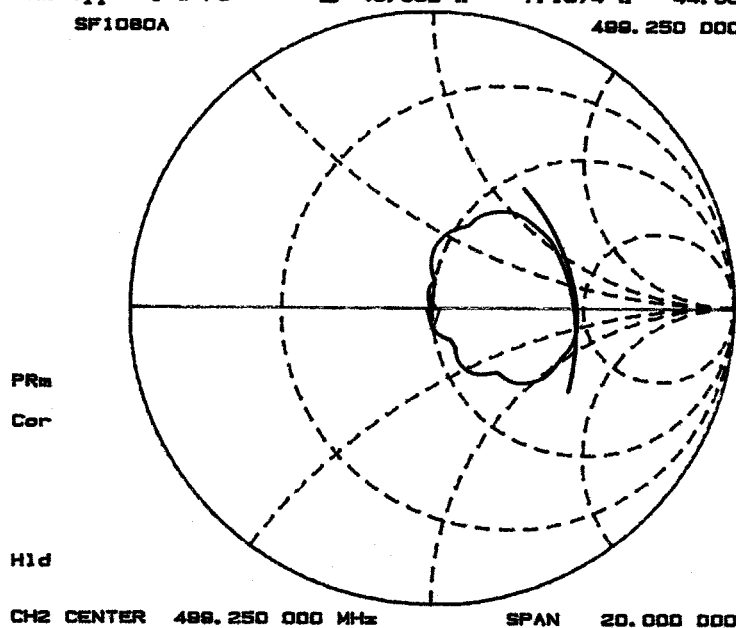
Demol

B.C

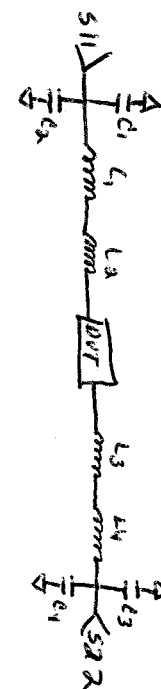
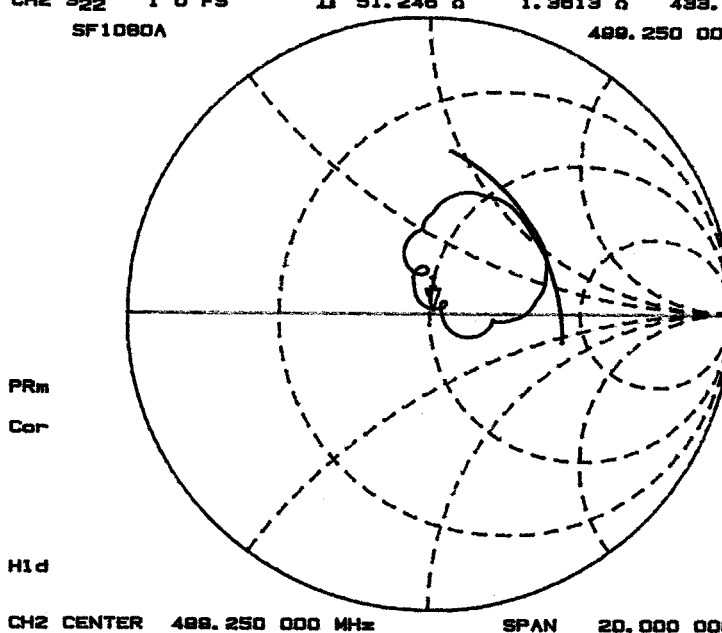
7/7/98



7 Jul 1998 10:37:05
CH2 S₁₁ 1 U FS L₁ 48.832 Ω -7.1074 Ω 44.853 pF
SF1080A 499.250 000 MHz



7 Jul 1998 10:39:01
CH2 S₂₂ 1 U FS L₁ 51.246 Ω 1.3813 Ω 433.87 pF
SF1080A 499.250 000 MHz



C₁ = 1.9 pF

C₂ = 12 pF

C₃ = 2 pF

C₄ = 12 pF

L₁ = 1.2 nH

L₂ = 12 nH

L₃ = 15 nH

L₄ = 1.5 nH

SF1080A-000

4/4

BILL OF MATERIALS

<u>PART IDENTIFIER</u>	<u>DESCRIPTION 1</u>	<u>DESCRIPTION 2</u>	<u>QTY/ASSY</u>	<u>REFERENCE DESCRIPTION</u>
SF1080A(DEMO)	DEMO BOARD,SF1080A			
SF1080A-000	ASSY DIAGRAM,DEMO BOARD	SF1080A	0	
SF1080A	FILTER,SM,499.250MHZ	GENERAL INSTRUMENT	1.0000	FLTR1
400-0845-001	PCB, SMT FILTER	TEST FIXTURE	1.0000	PCB1
400-0533-001	SHIELD,TO-39 TEST FIXTURE		1.0000	SHLD
500-0003-019	CAP,CHIP,NPO,1.9(J),STD		1.0000	C 1
500-0003-120	CAP,CHIP,NPO,12(J), STD		2.0000	C 2, 4
500-0003-020	CAP,CHIP,NPO,2.0(C),STD		1.0000	C 3
500-0248-001	CONN,COAX,FLANGE MT.JACK	4 HOLE	2.0000	J 1, 2
500-0815-012	IND,CHIP,0402,1.2NH, ± 0.3 NH		1.0000	L 1
500-0010-120	IND, CHIP, 1008CS, 12NH, 10%		1.0000	L 2
500-0010-150	IND, CHIP, 1008CS, 15NH, 10%		1.0000	L 3
500-0815-015	IND, CHIP, 0402, 1.5NH, ± 0.3 NH		1.0000	L 4



SIZE

A

FSCM NO.

2U874

DWG NO.

SF1080A(DEMO)

SCALE

NONE

W/O or ECN

7046

REV

B

SHEET

1

OF

2

REV HISTORY							
REV	ECN	DATE	DESCRIPTION				
A	6122	11/19/97	INITIAL RELEASE				
B	7046	09/22/98	DOCUMENT UPDATE				
				SIZE A	FSCM NO. 2U874	DWG NO. SF1080A(DEMO)	
			SCALE NONE	W/O or ECN 7046		REV B	SHEET 2 OF 2