



SF1059A

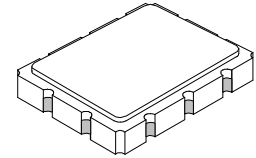
350.0 MHz SAW Filter

- **Designed for WLAN IF Applications**
- **Low Insertion Loss**
- **9.1 x 7.1 mm Version of SF1059A-1**
- **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	



SM9171-10

Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Nominal Center Frequency	f_c	1	350.00			MHz
Passband Insertion Loss at f_c 3 dB Passband Amplitude Variation over $f_c \pm 250$ kHz Group Delay Variation over $f_c \pm 400$ kHz	IL	1, 2		8	10.0	dB
	BW_3		± 400	± 600		kHz
				0.5	1.0	dB _{p-p}
	GDV			200	250	ns _{p-p}
Rejection $f_c - 8.0$ to $f_c - 2.0$ and $f_c + 2.0$ to $+8.0$ MHz $f_c - 50$ to $f_c - 8.0$ and $f_c + 8.0$ to $f_c + 50$ MHz Ultimate		1, 2, 3	35	40		dB
			40	45		
				50		
Operating Temperature Range	T_A	1	-20		+70	°C

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 SF1059A XX

Electrical Connections

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

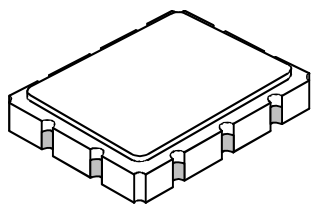
Notes:

1. Unless noted otherwise, all specification apply over the operating temperature range with filter soldered to the specified demonstration board with impedanced matching to 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. 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. Electrostatic Sensitive Device. Observe precautions for handling.



SM9171-10 Case

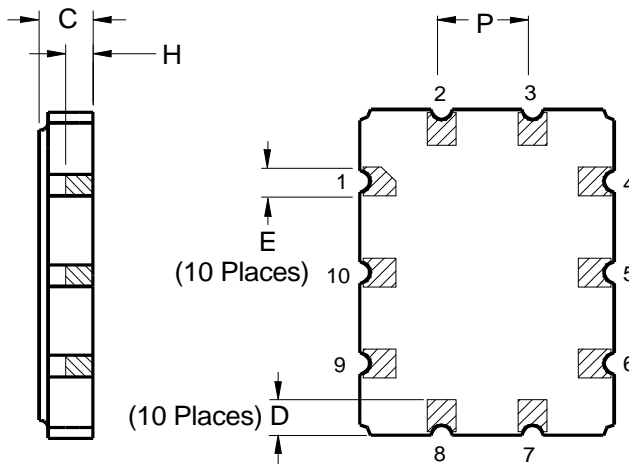
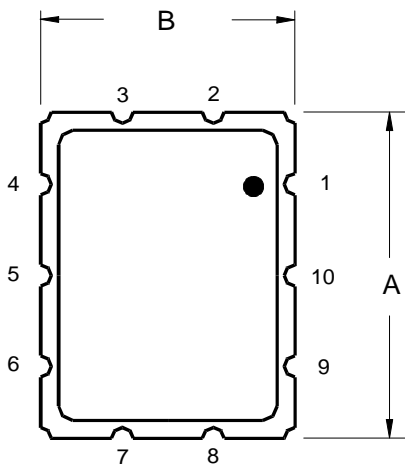
10-Terminal Ceramic Surface-Mount Case 9.1 x 7.1 mm Nominal Footprint



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	

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	

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



REVISIONS

REV	ECN	DESCRIPTION	DATE
A	12256	INITIAL RELEASE	06/18/04

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DRAWN BY/DATE:
D. GLAVIN 06/18/04

CHECKED/APPROVED BY:
J. GRANT 06/18/04

TITLE
**CALIBRATION PLOTS,
SF1059A-DEMO_TD**



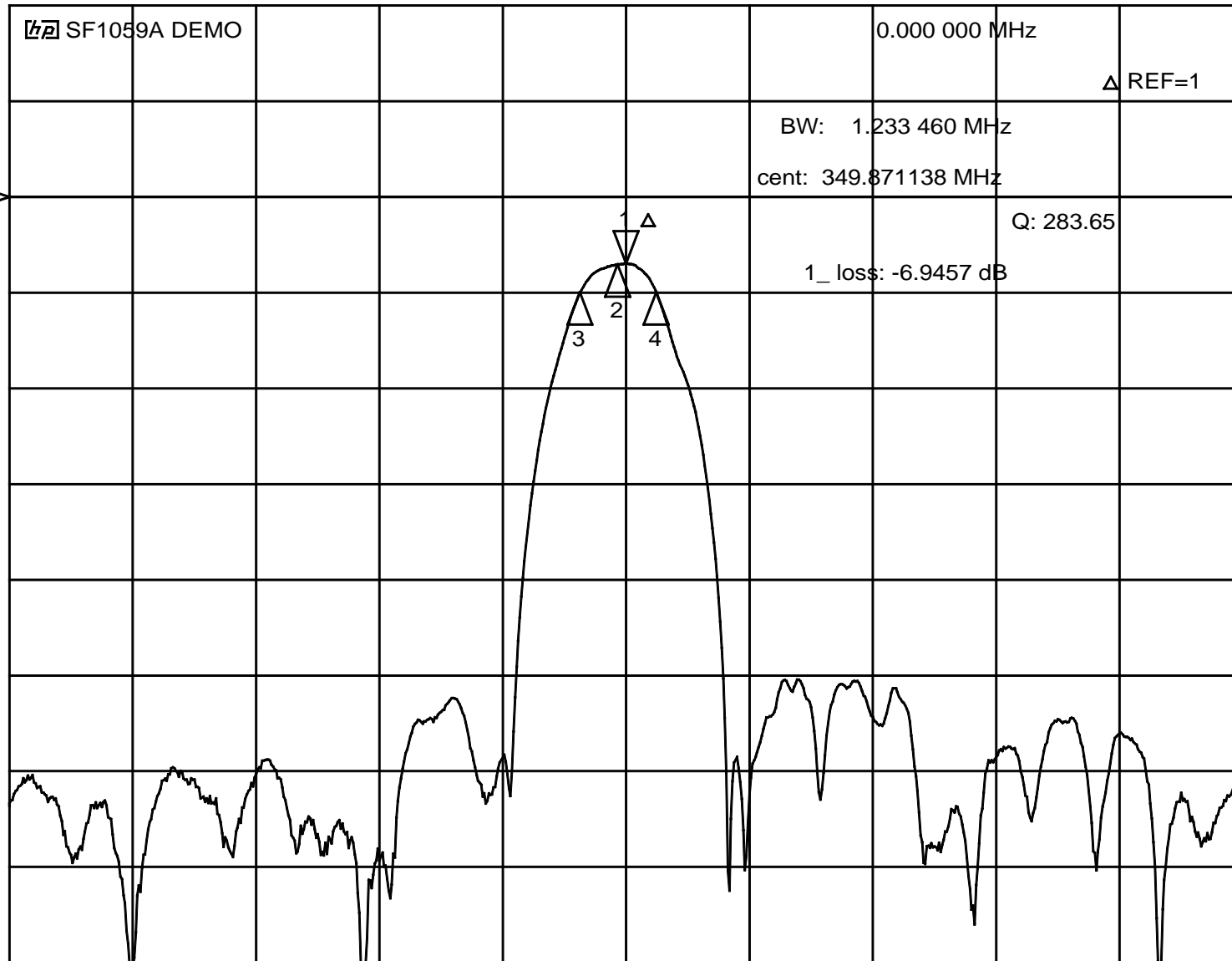
RFMonolithics, Inc.
DALLAS, TEXAS 75244 USA

SIZE A	FSCM NO. 2U874	DWG. NO. SF1059A-013	REV A
SCALE NONE	ECN NO. 12256	SHEET 1	OF 5

SF1059A
Demo Board Plots

16 Jun 2004 08:03:04

CH1 S₂₁ log MAG 10 dB/ REF 0 dB 1_: 0 dB



CENTER 350.000 000 MHz

SPAN 20.000 000 MHz

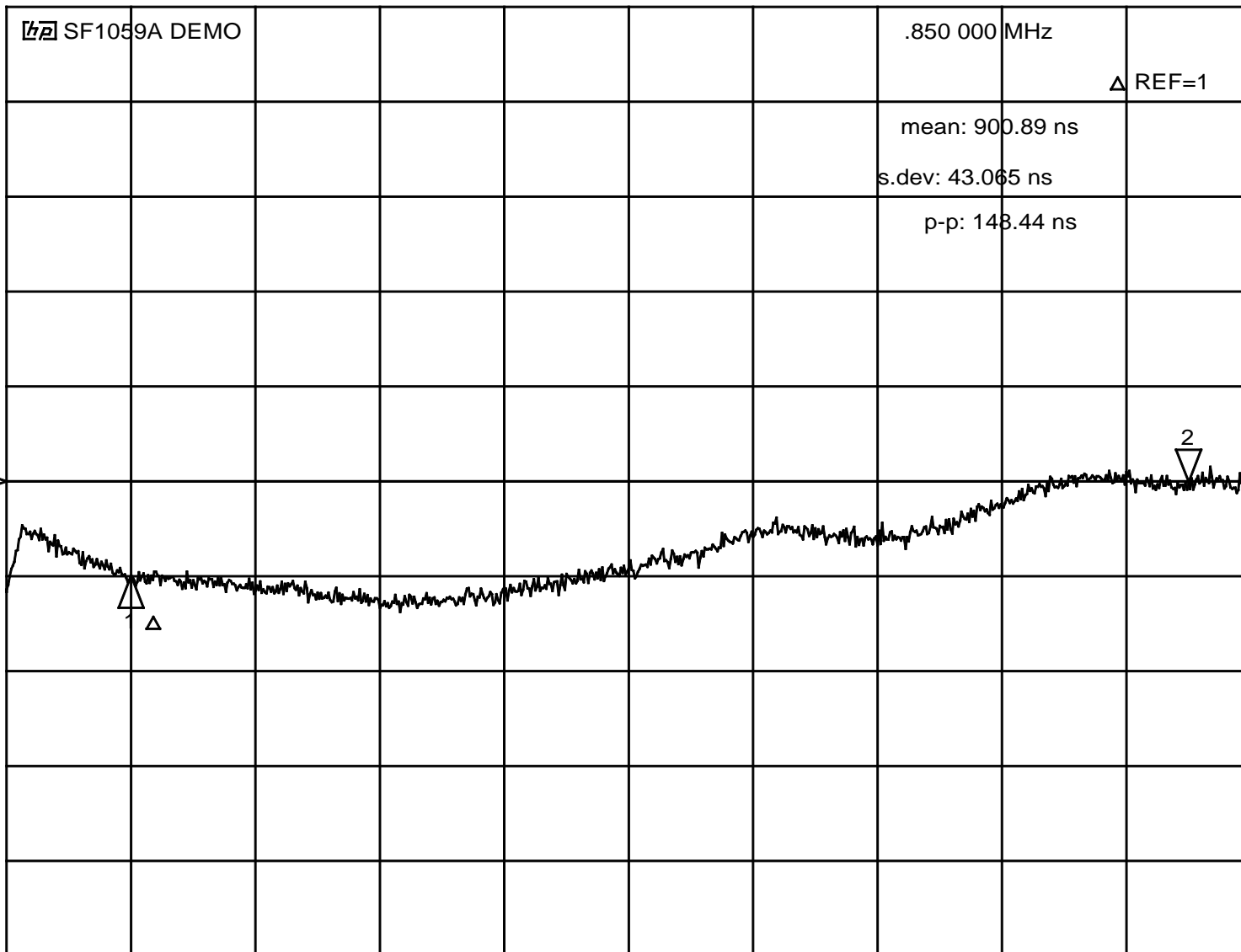


SIZE A	FSCM NO. 2U874	DWG NO. SF1059A-013	REV A
SCALE NONE	ECN NO. 12256	SHEET 2	OF 5

16 Jun 2004 08:13:06

SF1059A Demo Board Plots

CH1 S₂₁ delay 100 ns/ REF 975.3 ns 2_: 99.087 ns



CENTER 350.000 000 MHz

SPAN 1.000 000 MHz



SIZE A	FSCM NO. 2U874	DWG NO. SF1059A-013	REV A
SCALE NONE	ECN NO. 12256	SHEET 3	OF 5

16 Jun 2004 08:04:43

SF1059A Demo Board Plots

CH1 S₁₁ 1 UFS
SF1059A DEMO

2_: 42.813

Ω 6.6855

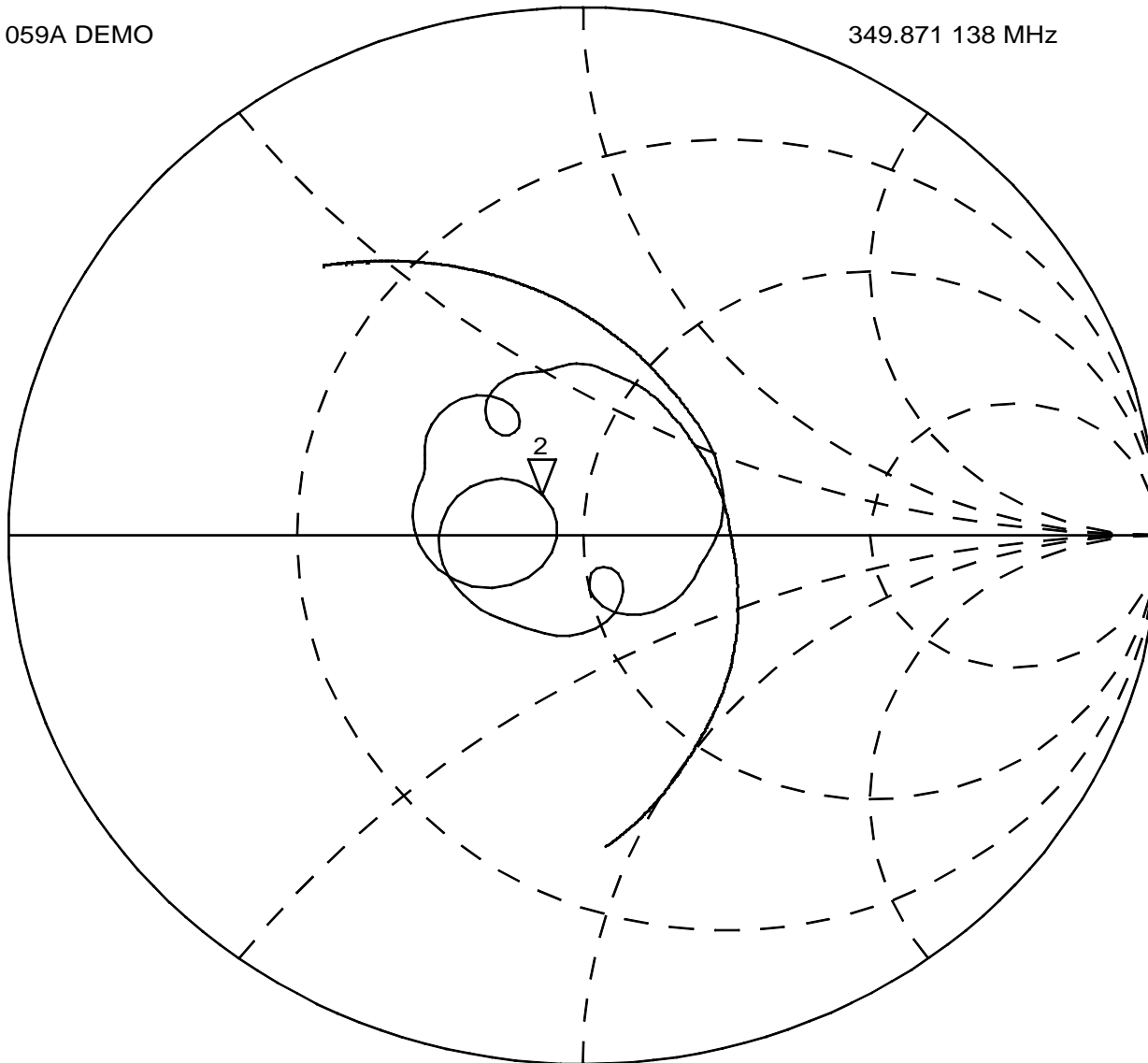
Ω 3.0412 nH

349.871 138 MHz

PRm

Cor

Hld



CENTER 350.000 000 MHz

SPAN 20.000 000 MHz



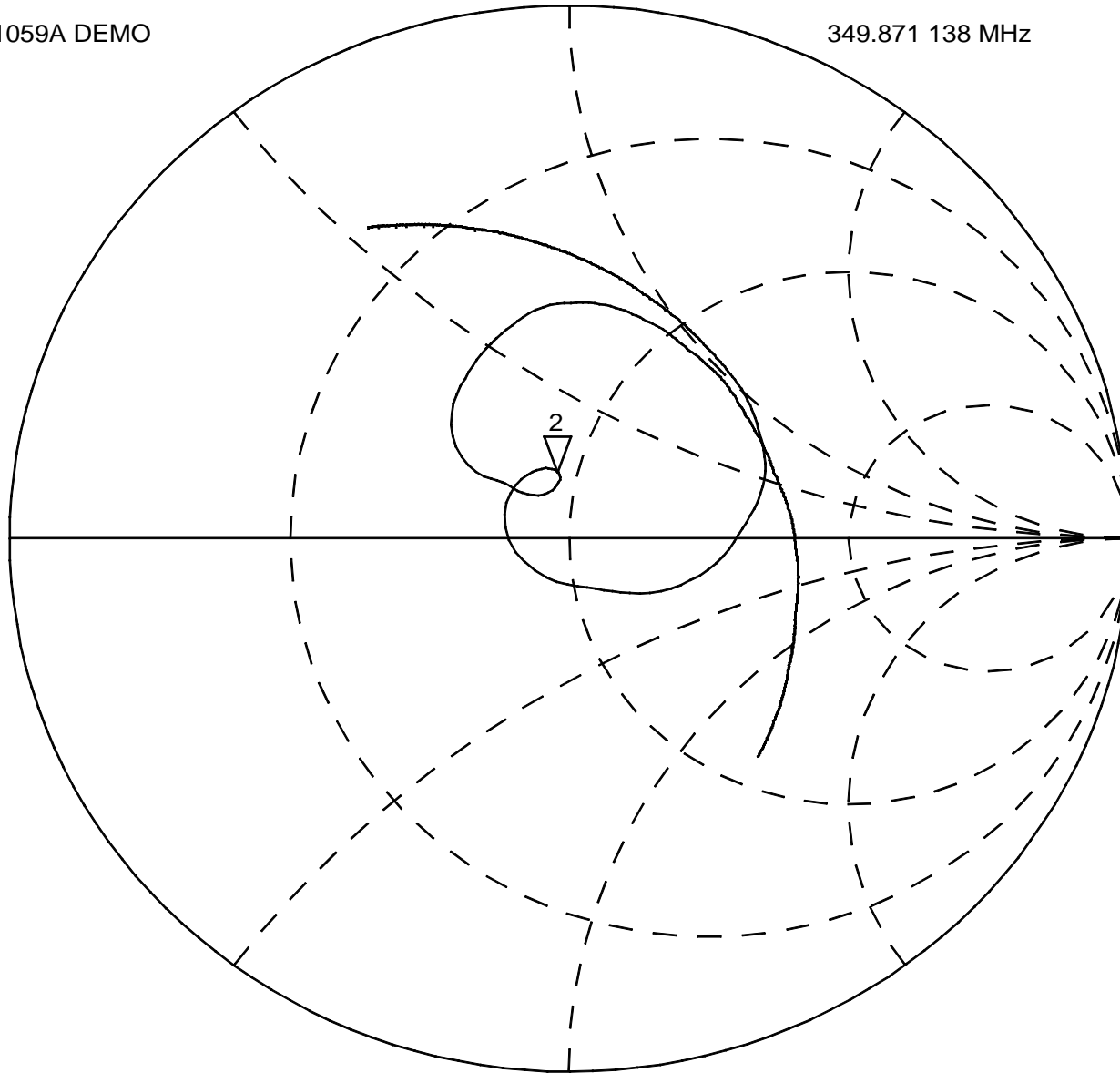
SIZE A	FSCM NO. 2U874	DWG NO. SF1059A-013	REV A
SCALE NONE	ECN NO. 12256	SHEET 4	OF 5

16 Jun 2004 08:05:16

**SF1059A
Demo Board Plots**

CH1 S₂₂ 1 U FS 2_: 46.6 Ω 11.688 Ω 5.3166 nH
SF1059A DEMO 349.871 138 MHz

PRm
Cor
Hld



CENTER 350.000 000 MHz

SPAN 20.000 000 MHz



SIZE A	FSCM NO. 2U874	DWG NO. SF1059A-013	REV A
SCALE NONE	ECN NO. 12256	SHEET 5	OF 5

REV	ECN NO.	DESCRIPTION	APP/DATE
A	3887	REL TO MFG	FR 6/19/95
B	4631	CHANGE ADJUSTABLE CAPS TO FIXED CAPS	
C	12256	REVISED	17jun04

BILL OF MATERIALS

ITEM	QTY	P/N	DESCRIPTION	REF DES	REMARKS
1	1	400-0845-001	PCB	PCB1	
2	1	SF1059A	FILTER	FLTR1	
3	1	500-0003-270	CAP, 27pF	C1	
4	1	500-0003-220	CAP, 22pF	C2	
5	2	500-0967-330	CHIP INDUCTOR, 33nH, 1008CS	L1,L2	
6	2	500-0248-001	CONN, COAX, FLANGE MNT	J1,J2	
7	AR	SF1059A-013	CALIBRATION PLOTS, SF1059A-DEMO	.	

DRAWN BY/DATE: J.F.Christopherson 25apr95

TITLE: DEMO BOARD, SF1059A

RF Monolithics, Inc.
DALLAS, TEXAS 75244

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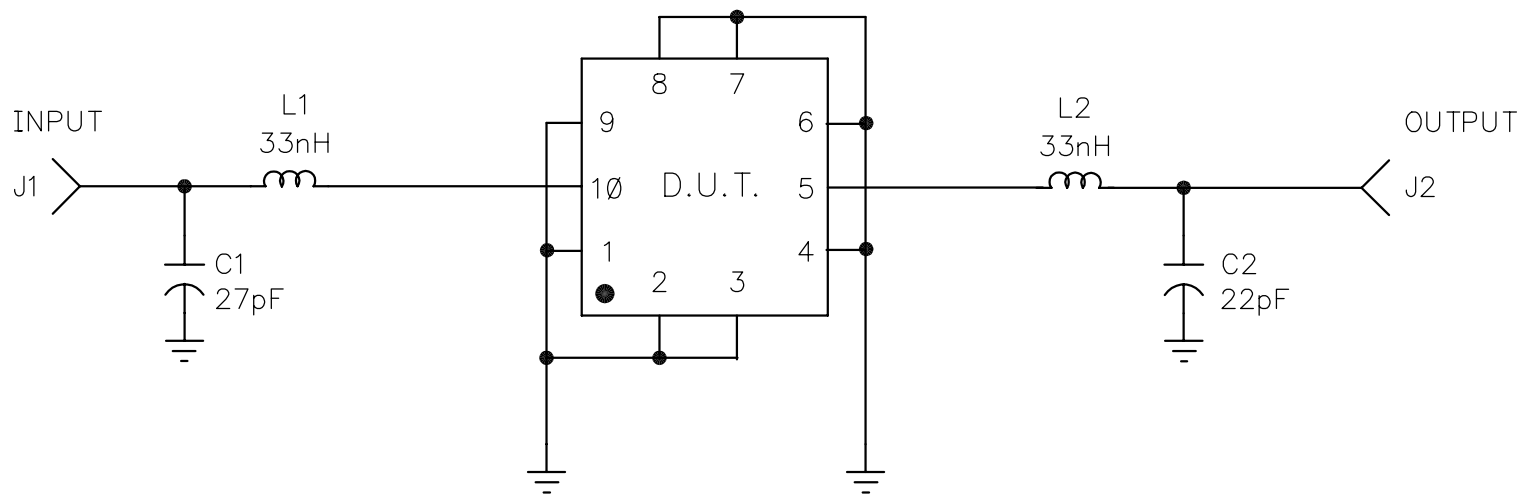
SIZE
A

CODE IDENT
2U874

DWG.
NO. SF1059A-DEMO

REV
C

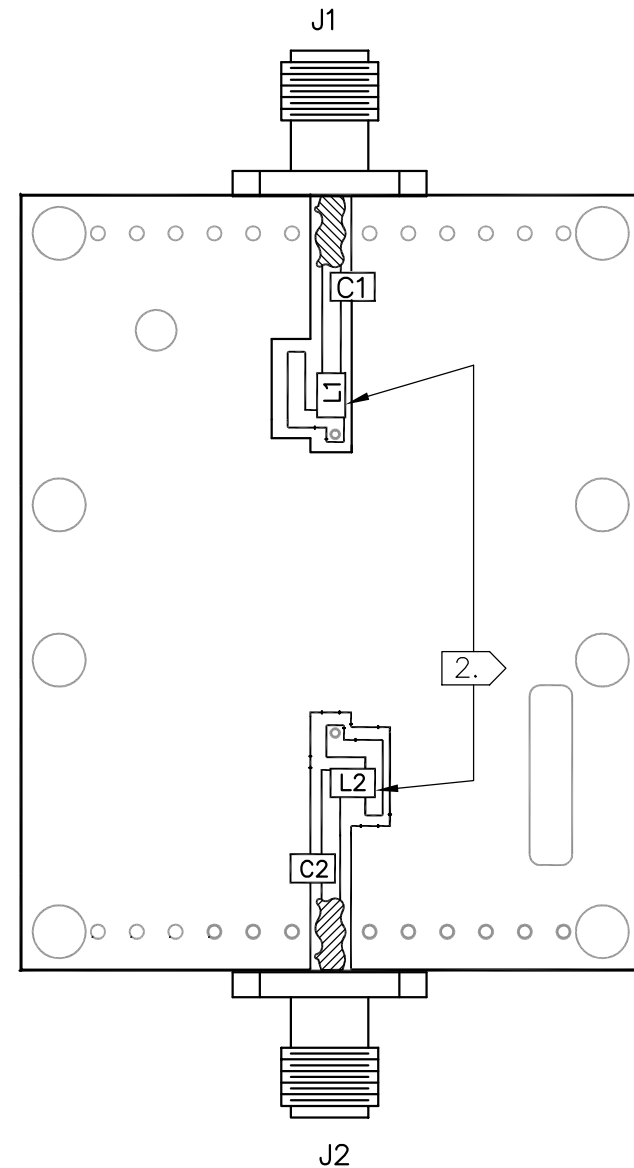
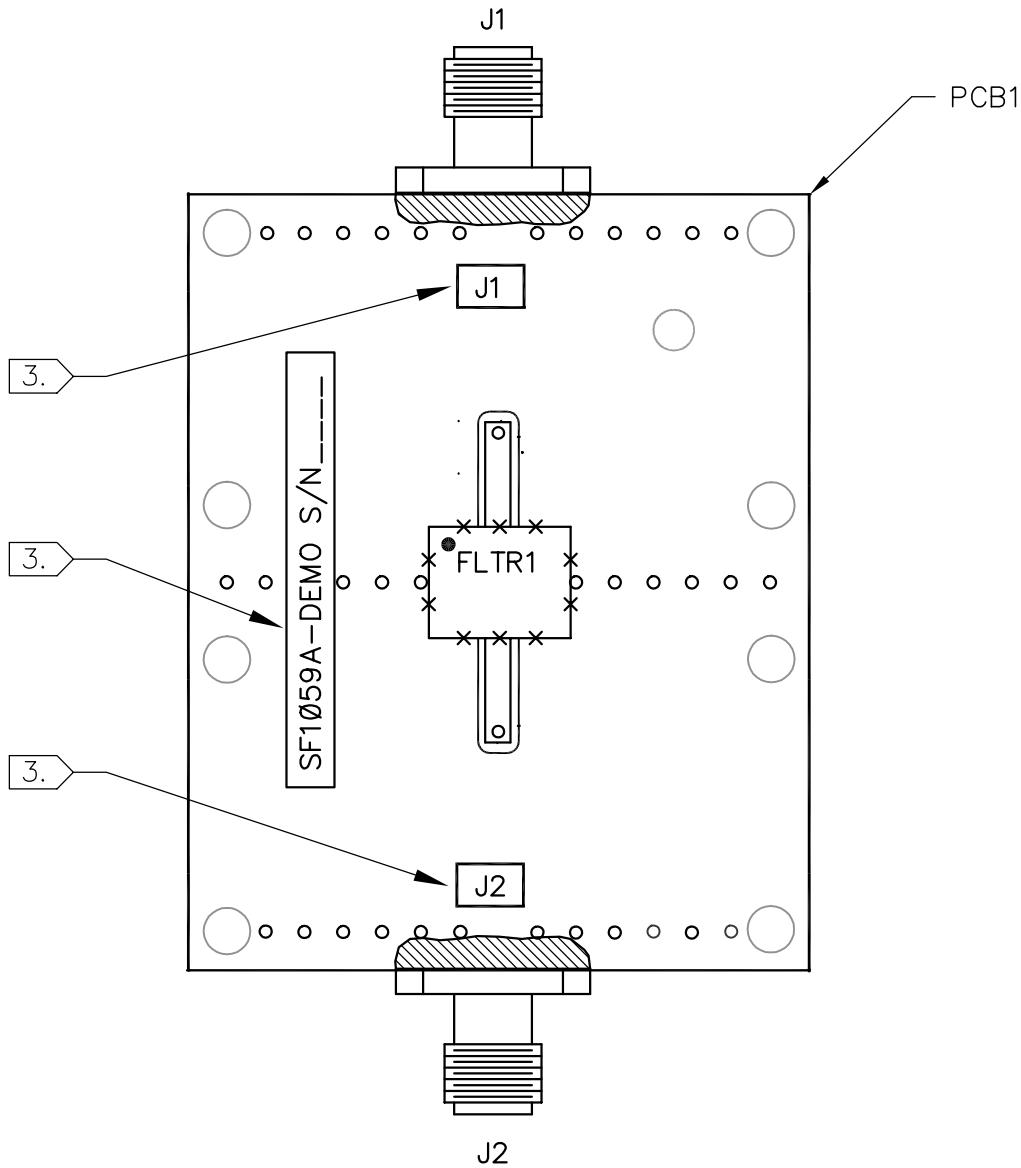
SHEET
1/4



SCHMATIC

NOTES:

1. SOLDER MOUNT COMPONENTS, CONNECTORS, TO PCB1
2. NOTE PROPER ORIENTATION OF INDUCTORS [L1, L2] SHOULD BE 90° TO EACH OTHER.
3. LABEL DEMO BOARD AS INDICATED. ADD SERIAL NUMBER AS INDICATED.



TUNING PROCEDURE:

1. DUE TO TOLERANCE VARIATIONS IN THE VALUES OF CAPACITORS AND INDUCTORS, IT MAY BE IMPOSSIBLE TO DUPLICATE TUNING POSITIONS AS DOCUMENTED. IT MAY REQUIRE USING EITHER A SLIGHTLY HIGHER OR SLIGHTLY LOWER VALUE CAPACITOR OR INDUCTOR. THIS WILL DEPEND ON EACH INDEPENDANT PART.
2. USE THE S-PARAMETER PLOTS TO GET AN IDEA AS TO WHERE TO TUNE THE PART.