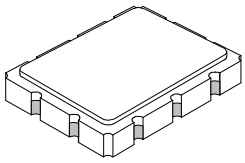
SF1059A

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)***



SM9171-10

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		350.00		MHz
Passband	Insertion Loss at fc	IL			8	10.0	dB
	3 dB Passband	BW_3	1, 2	±400	±600		kHz
	Amplitude Variation over fc ±250 kHz				0.5	1.0	dB_{P-P}
	Group Delay Variation over fc ±400 kHz	GDV			200	250	ns_{P-P}
Rejection	fc-8.0 to fc-2.0 and fc+2.0 to +8.0 MHz		1, 2, 3	35	40		dB
	fc-50 to fc-8.0 and fc+8.0 to fc+50 MHz			40	45		
	Ultimate				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 (YY=year, WW=week, S=shift, ##=sequence code) See note	RFM SF1059A YYWWS##

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**

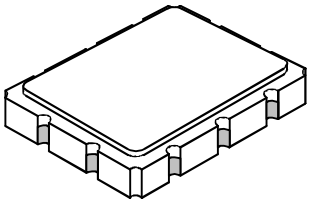
Notes:

1. Unless noted otherwise, all specitication 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 specitications 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. Electrostatic Sensitive Device. Observe precautions for handling.

RF Monolithics, Inc. Phone: (972) 233-2903 Fax: (972) 387-9148 E-mail: info@rfm.com
RFM Europe Phone: 44 1963 251383 Fax: 44 1963 251510 http://www.rfm.com

SM9171-10 Case

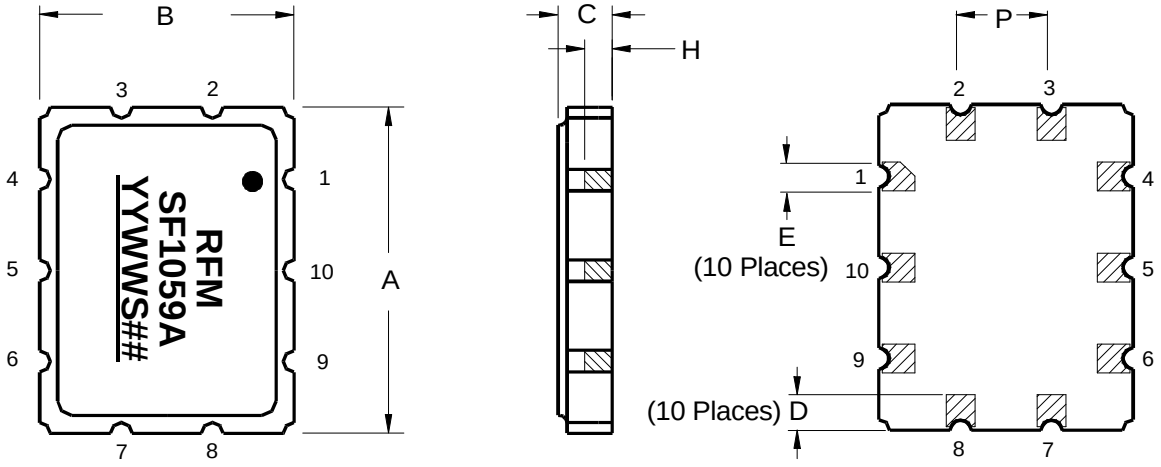
10-Terminal Ceramic Surface-Mount Case
9.1 x 7.1 mm Nominal Footprint



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 uInches (76.2-152 uM) over 80-200 uInches (203-508 uM) Ni.
Lid	Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 uInches Thick
Body	Al_2O_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

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

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

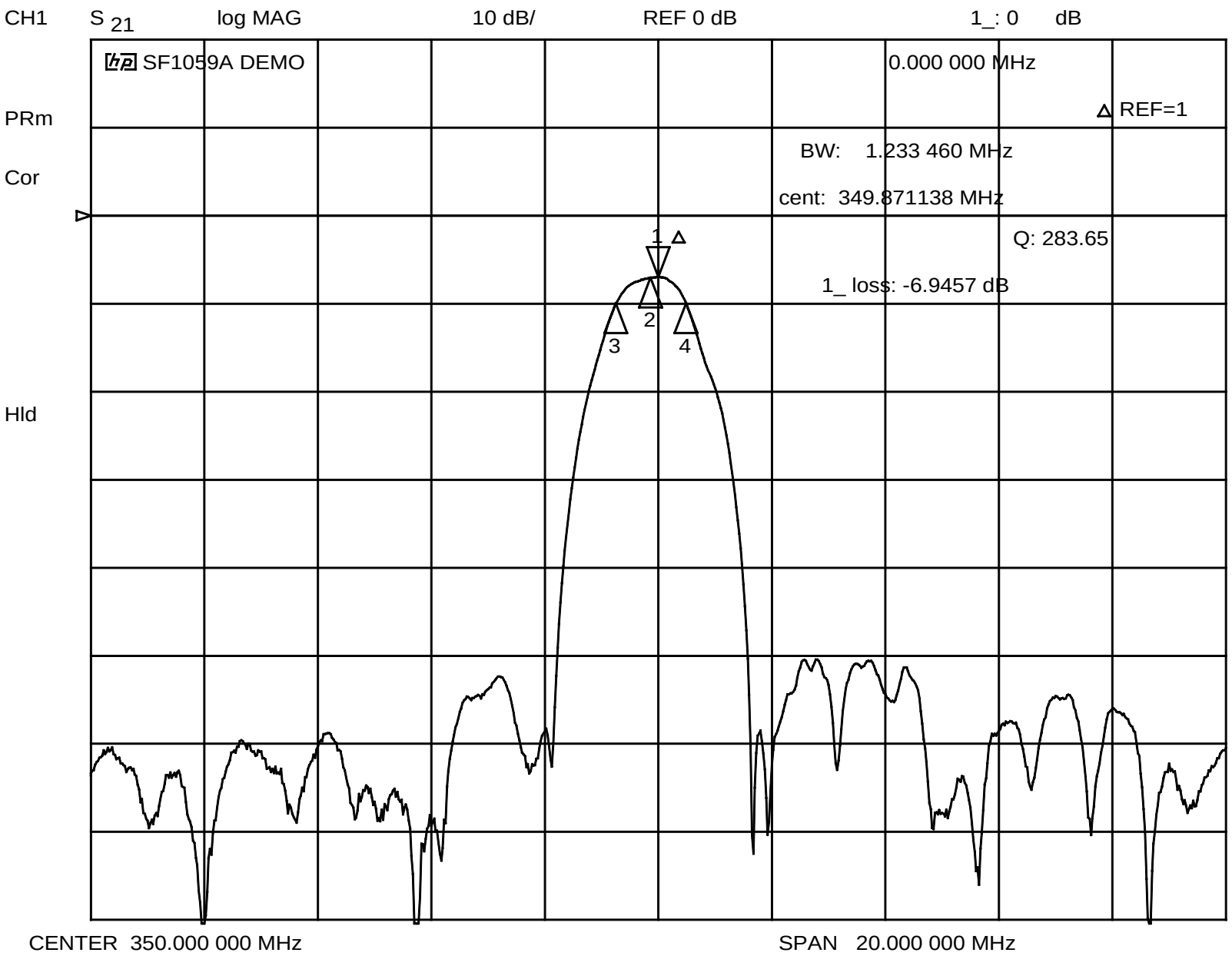
TITLE
CALIBRATION PLOTS, SF1059A-DEMO_TD

RFMonolithics, Inc.
DALLAS, TEXAS 75244 USA

SIZE	FSCM NO.	DWG. NO.	REV
A	2U874	SF1059A-013	A

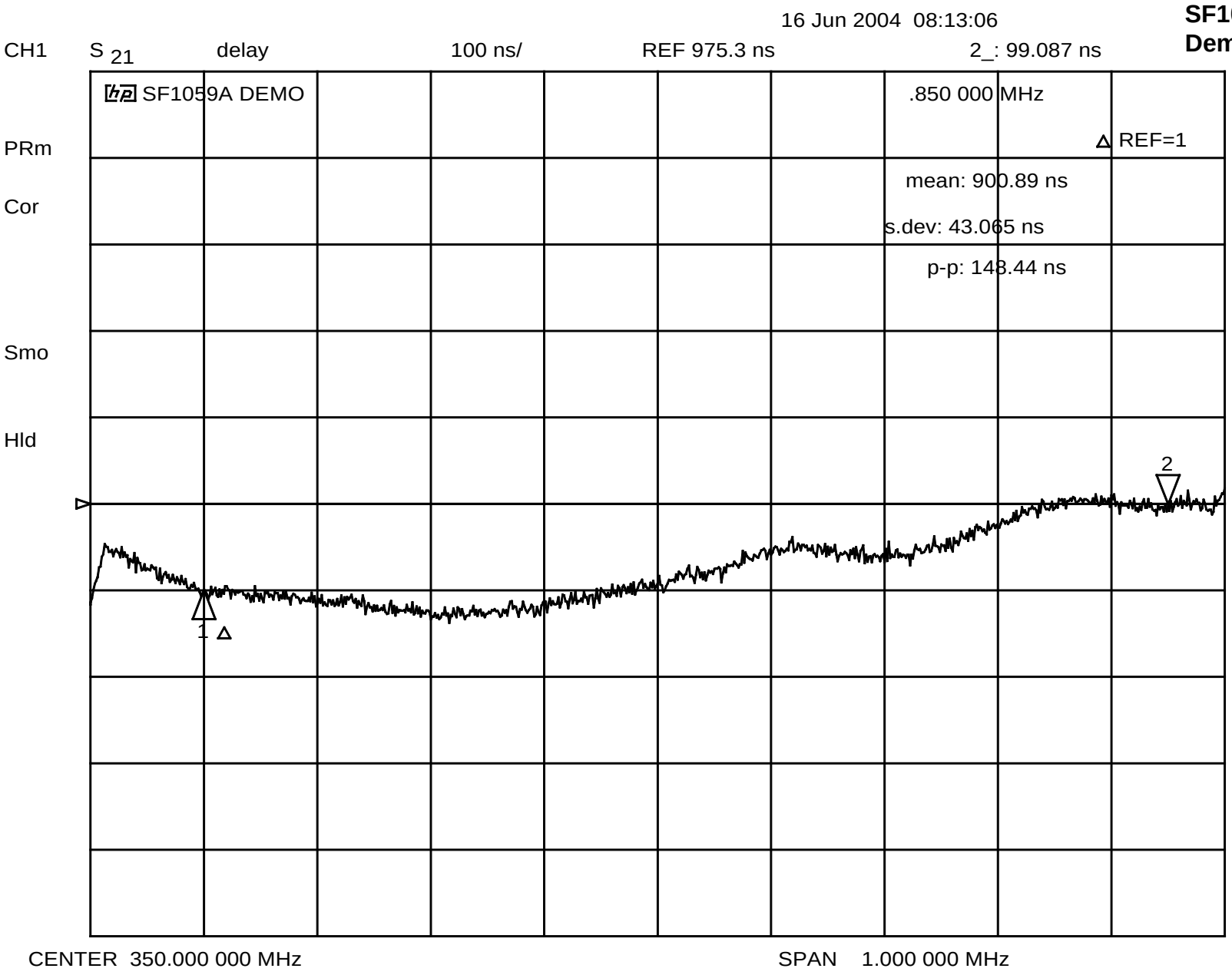
SCALE	ECN NO.	SHEET	OF
NONE	12256	1	5

SF1059A
Demo Board Plots



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

SF1059A
Demo Board Plots



FRIEM®		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

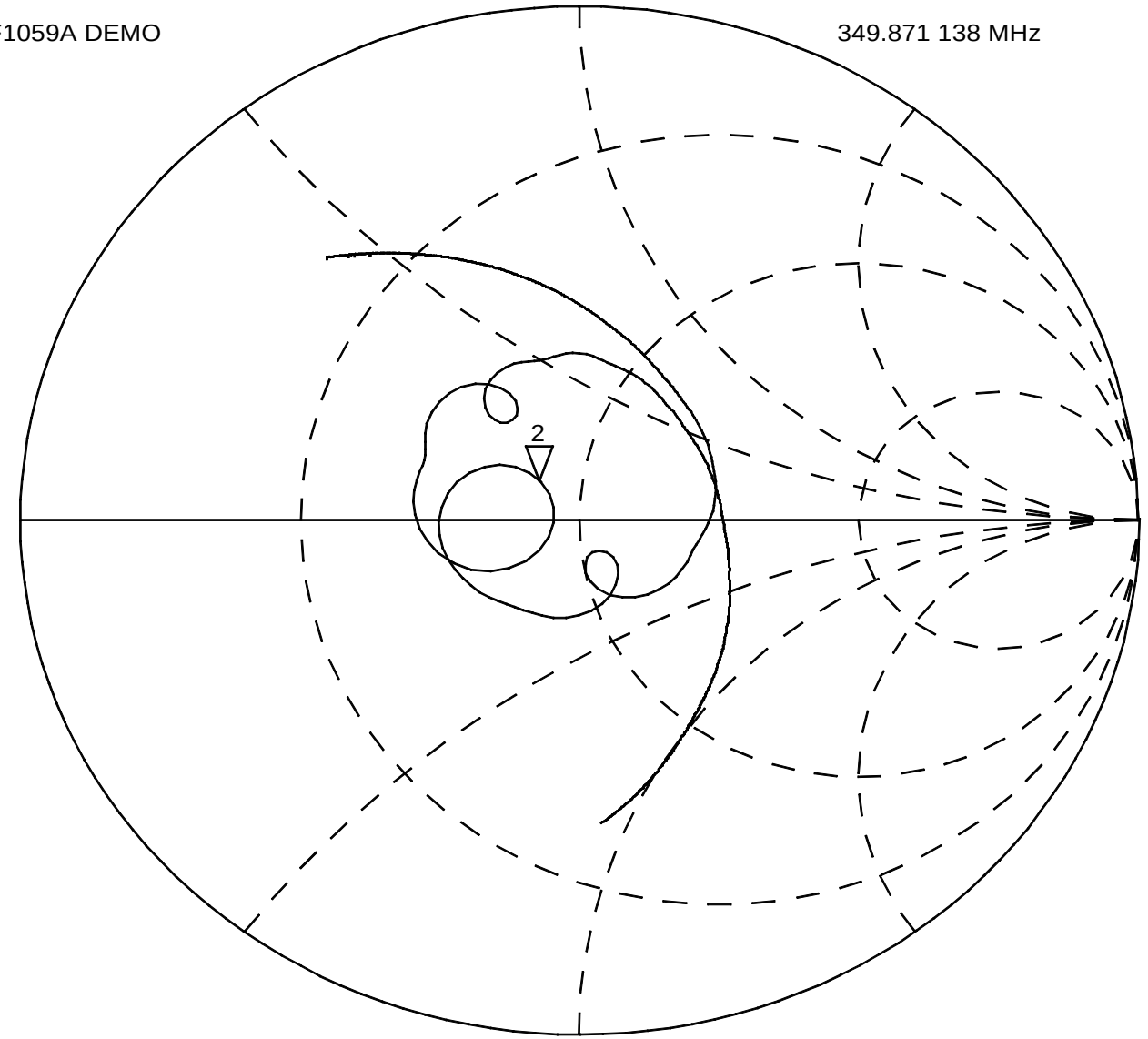
CH1 S 11 1 U FS 2_: 42.813 Ω 6.6855 Ω 3.0412 nH

SF1059A DEMO 349.871 138 MHz

PRm

Cor

Hld



CENTER 350.000 000 MHz SPAN 20.000 000 MHz

SF1059A
Demo Board Plots

RFFM®		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

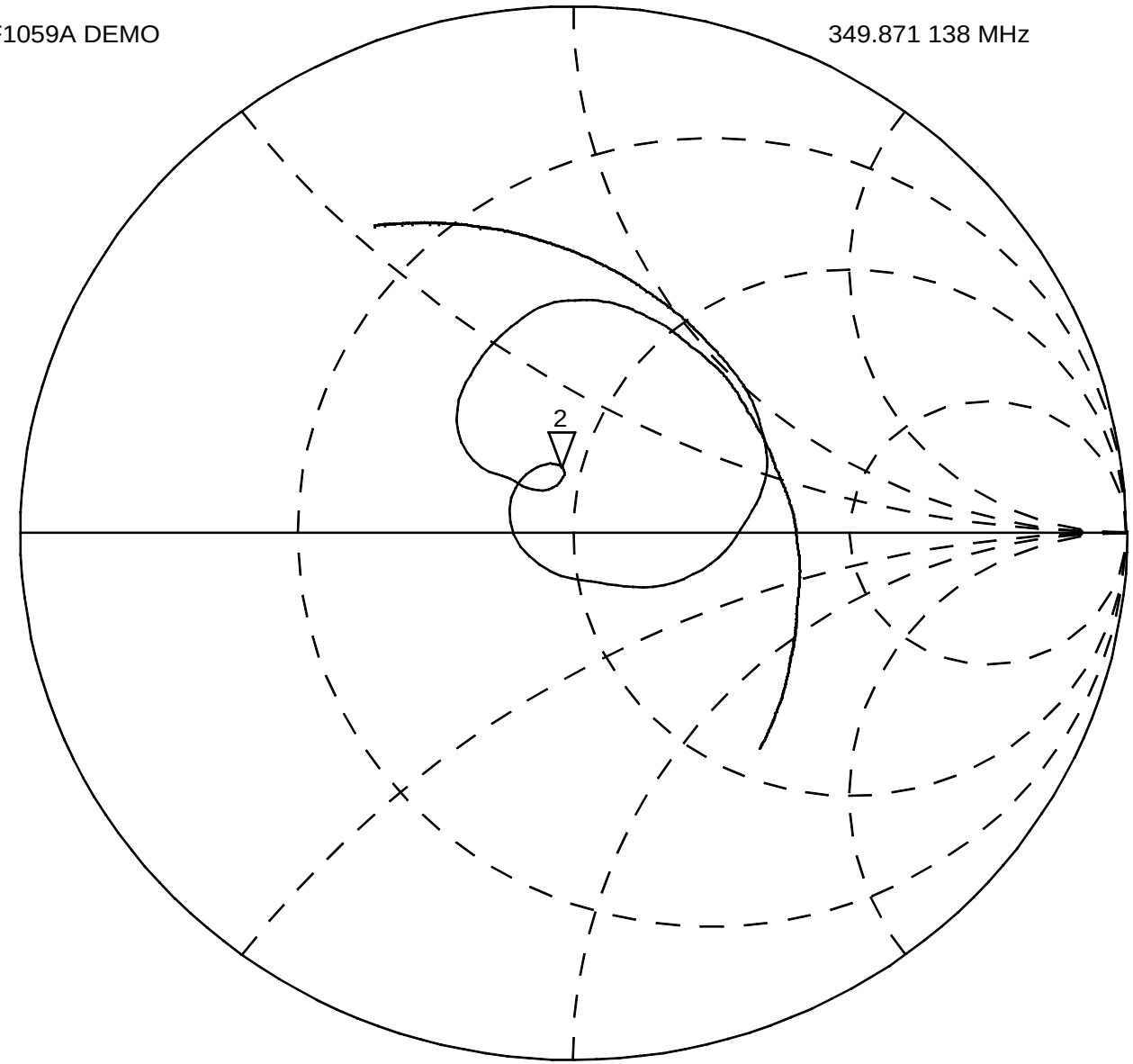
CH1 S 22 1 U FS 2_: 46.6 Ω 11.688 Ω 5.3166 nH

SF1059A DEMO 349.871 138 MHz

PRm

Cor

Hld



CENTER 350.000 000 MHz SPAN 20.000 000 MHz

SF1059A
Demo Board Plots

RFMD®		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

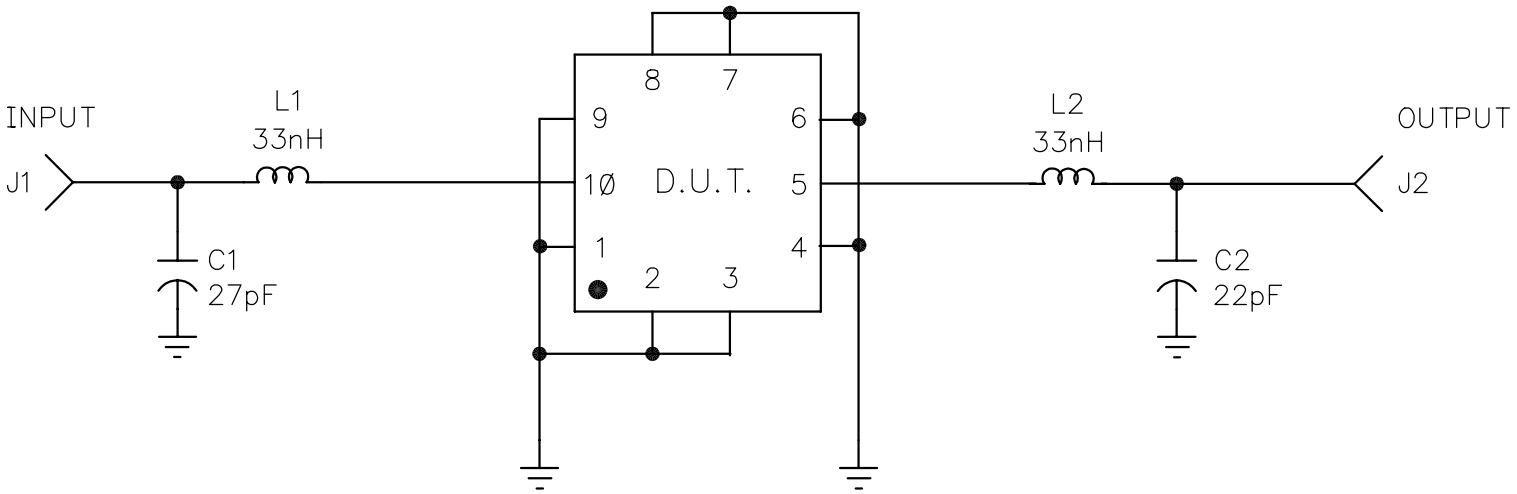
ITEM	QTY	P/N	DESCRIPTION	REF DES	REMARKS
1	1	400-0845-001	PCB	PCB1	
2	1	SF1059A	FILTER	FLTR1	
3	1	500-0003-270	CAP, 27pF	C1	
4	1	500-0003-220	CAP, 22pF	C2	
5	2	500-0967-330	CHIP INDUCTOR, 33nH, 1008CS	L1,L2	
6	2	500-0248-001	CONN, COAX, FLANGE MNT	J1,J2	
7	AR	SF1059A-013	CALIBRATION PLOTS, SF1059A-DEMO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

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

TITLE: DEMO BOARD, SF1059A

RF Monolithics, Inc.
DALLAS, TEXAS 75244

SIZE	CODE IDENT	DWG. NO.	REV	SHEET
A	2U874	SF1059A-DEMO	C	1/4

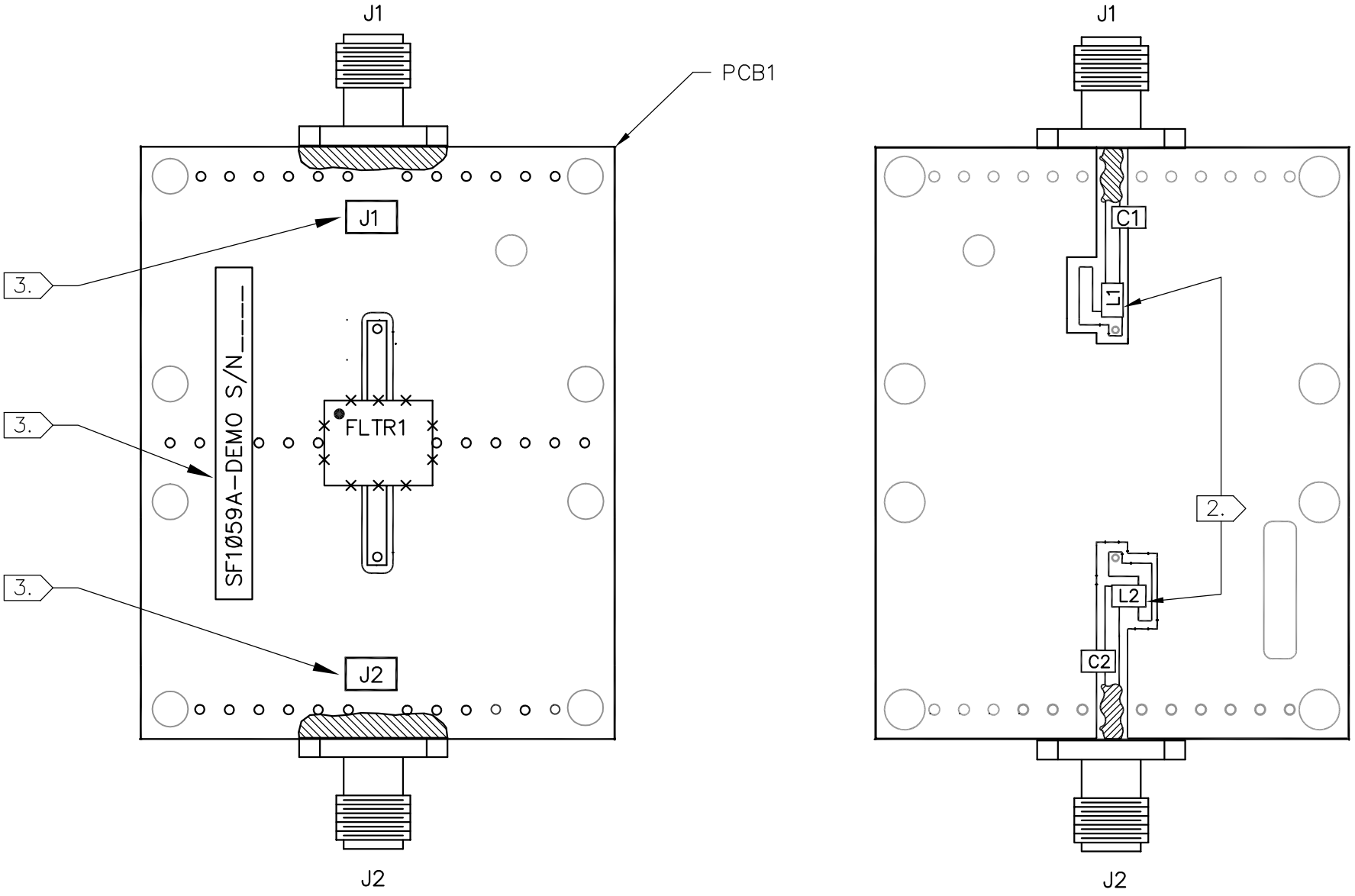


SCHEMATIC

RF Monolithics, Inc. DALLAS, TEXAS 75244	ALL INFORMATION DISCLOSED BY THIS DOCUMENT IS CONFIDENTIAL AND PROPRIETARY TO RF MONOLITHICS, INC. ALL DESIGN, MANUFACTURE, USE, REPRODUCTION AND SALES RIGHTS ARE RESERVED BY RF MONOLITHICS, INC.	SIZE **A**	CODE IDENT **2U874**	DWG. NO. SF1Ø59A–DEMO	REV C	SHEET 2

NOTES:

1. SOLDER MOUNT COMPONENTS, CONNECTORS, TO PCB1
2. NOTE PROPER ORIENTATION OF INDUCTORS [L1, L2] SHOULD BE 9Ø° TO EACH OTHER.
3. LABEL DEMO BOARD AS INDICATED. ADD SERIAL NUMBER AS INDICATED.



RF Monolithics, Inc. DALLAS, TEXAS 75244		SIZE **A**	CODE IDENT **2U874**	DWG. NO. SF1Ø59A-DEMO	REV **C**	SHEET 3

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.