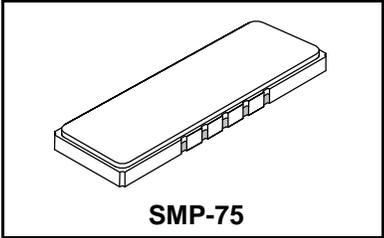


**SF1194A**

**167 MHz  
SAW Filter**



- **Low Insertion Loss**
- **Excellent Size-to-Performance Ratio**
- **Hermetic SMP-75 Surface-Mount Case**
- **Single-Ended or Differential 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
Temperature Range	-5 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
Center Frequency	$f_0$	1	167			MHz
Maximum Insertion Loss 167 ± .075 MHz	IL				7.0	dB
2.0 dB Bandedges					± .200	MHz
17 dB Bandedges					± .400	MHz
36 dB Bandedges					± .600	MHz
41 dB Bandedges					± .800	MHz
Ultimate Rejection	30 to 147 MHz		70			dB
	147 to 165.4 MHz		41			dB
	168.6 to 187 MHz		41			dB
	187 to 276 MHz		70			dB
	276 to 278 MHz		50			dB
	278 to 2000 MHz		70			dB
Amplitude Variation	167 ± 0.75 MHz				1.5	dB p-p
Amplitude Ripple	167 ± 0.75 MHz				1	dB p-p
Absolute Group Delay	167 ± 0.75 MHz			2.3	2.6	µsec
Group Delay Variation	167 ± 0.75 MHz				400	nsec
Maximum RF Input Power					22	dBm
Input IMR	For two -20dBm input signals At 167 + .800 MHz And 167 + 1.600 MHz Or at 167 -.800 MHz And 167 -1.600 MHz		100			dB
Input Return Loss	167 ± .075 MHz		15			dB
Output Return Loss	167 ± .075 MHz		10			dB
Source/Load Impedance	Single-Ended or Differential Input / Output					Ohm
Matching Components	Fixed value, external Q 40-50					
Case Style	SMP-75 19 x 6.5 mm Nominal Footprint					
Lid Symbolization (YY = year, WW = week)			4	RFM SF1194A YYWW		

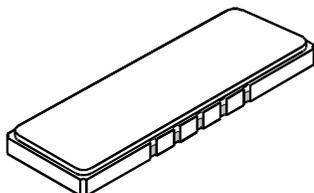
**Notes:**

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 Ω and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency,  $f_c$ .
3. The design, manufacturing process, and specifications of this filter are subject to change.
4. Tape and Reel Standard ANSI / EIA 481.
5. US and international patents may apply.
6. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.
7. ©Copyright 1999, RF Monolithics Inc.
8. Electrostatic Sensitive Device. Observe precautions for handling.

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## SMP-75 Case

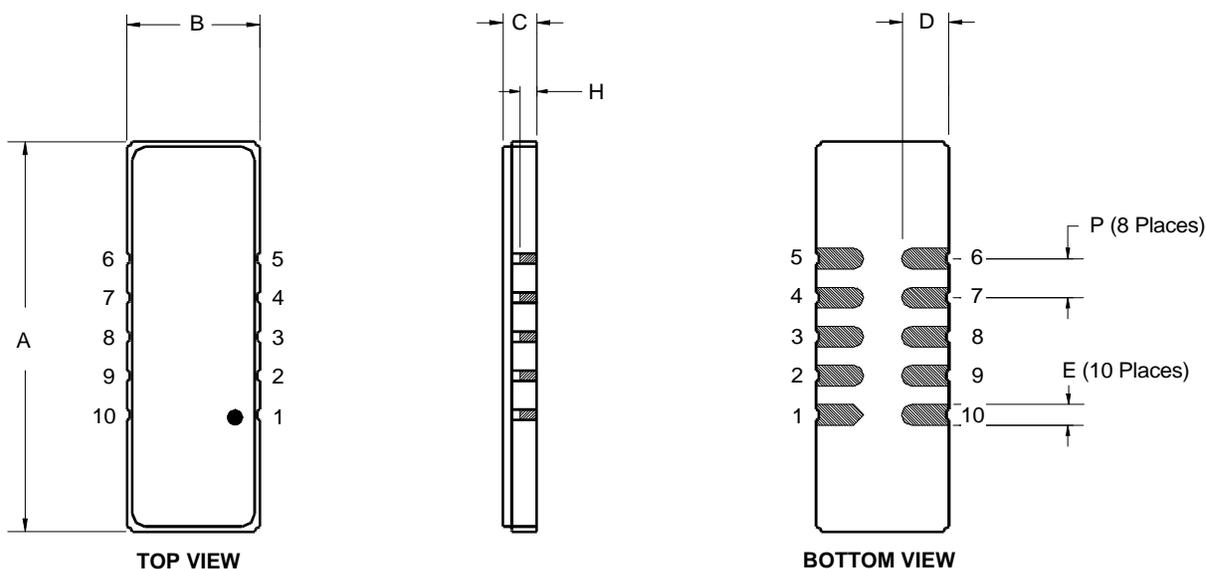
### 10-Terminal Ceramic Surface-Mount Case 19 x 6.5 mm Nominal Footprint

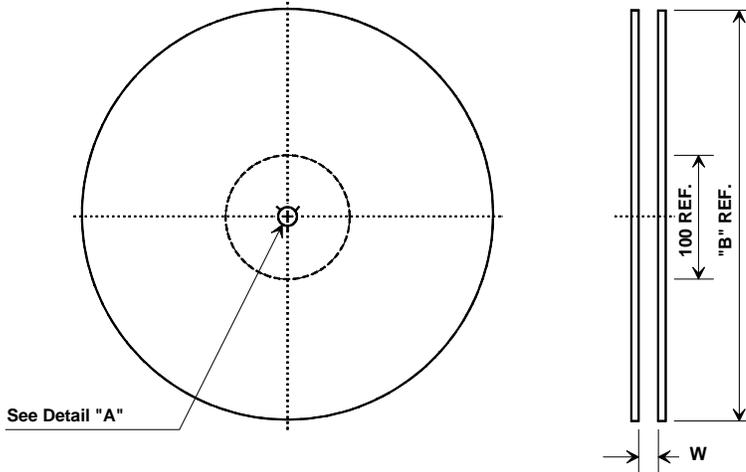


Case Dimensions						
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	18.80	19.00	19.30	0.740	0.748	0.760
B	6.30	6.50	6.80	0.248	0.256	0.268
C		1.75	2.00		0.069	0.079
D		2.29			0.090	
E		1.02			0.040	
H		1.0			0.039	
P		1.905			0.075	

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





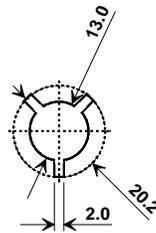
**Tape and Reel Packaging with the following conditions:**

Tape Width: 32 mm

Tape Pitch (part to part): 12 mm

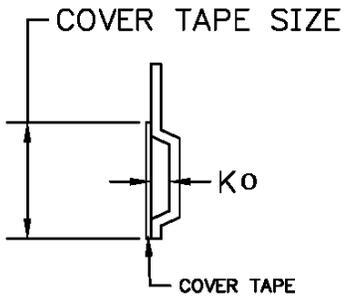
Component Orientation: Parts shall be oriented with the narrow side closest to the tape's round sprocket holes on the tape's trailing edge.

See Detail "A"

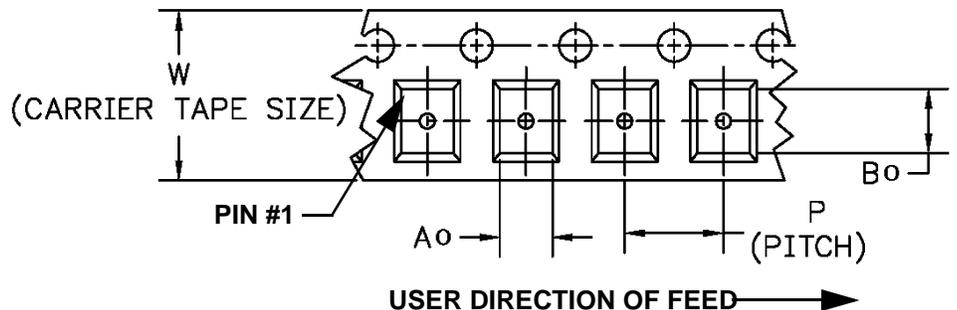


"B"		Quantity Per Reel
Nominal Size		
Inches	millimeters	
7	178	500
13	330	1000

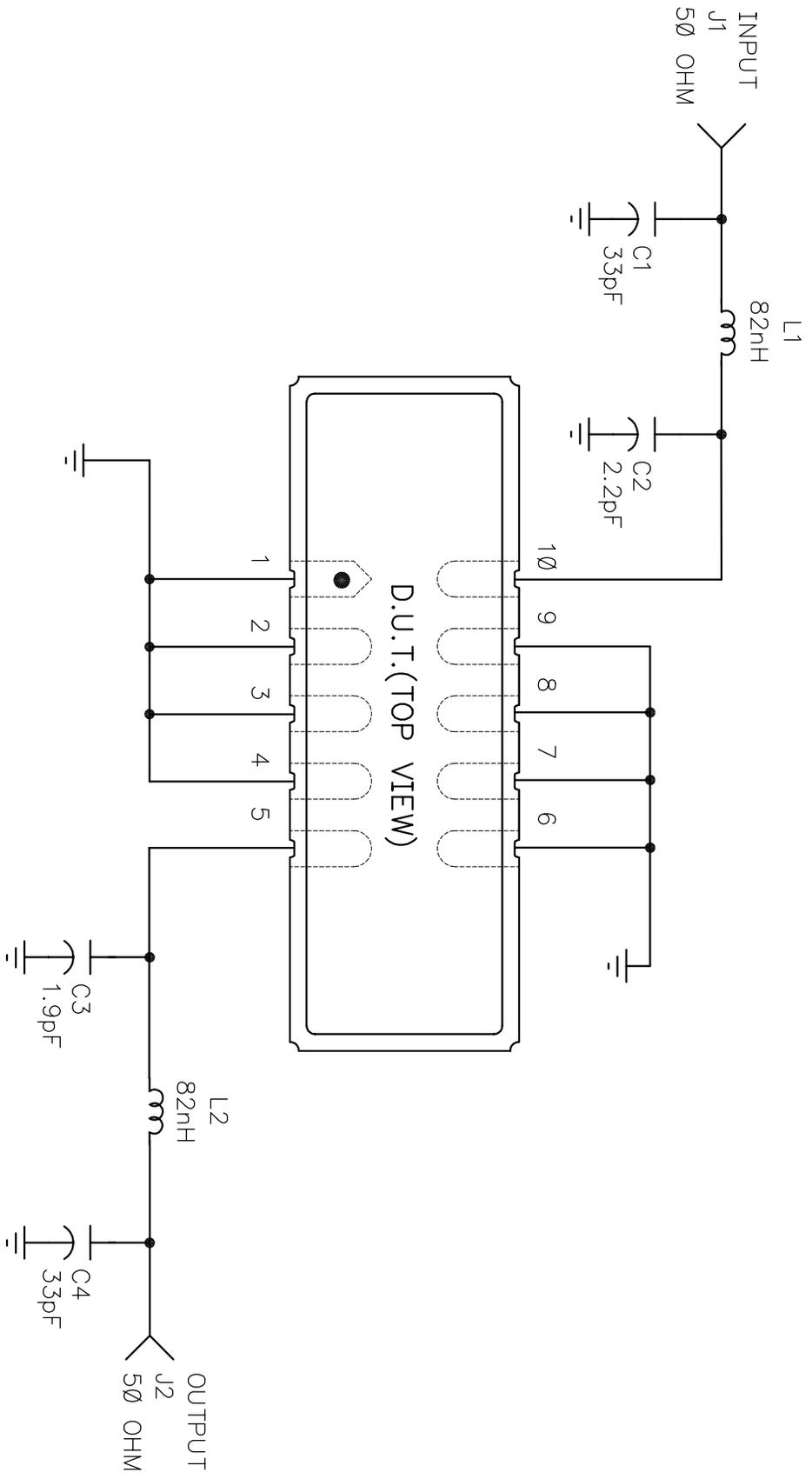
**COMPONENT ORIENTATION and DIMENSIONS**



Carrier Tape Dimensions		Cover Tape
<b>Ao</b>	.276 ± .004 (7.01)	25.5 mm
<b>Bo</b>	.768 ± .004 (19.51)	
<b>Ko</b>	.088 ± .004 (2.24)	
<b>Pitch</b>	12mm	
<b>W</b>	32mm	



REV	ECN NO.	DESCRIPTION	DATE
A	11081	RELEASE	08nov02
B	11383	CHANGED VALUES	02may03



DRAWN BY: J.F. Christopherson DATE: 08nov02

TITLE: ASSEMBLY DIAGRAM, SF1194A(DEMO)

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

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SIZE: **A**  
CODE IDENT: **2U874**

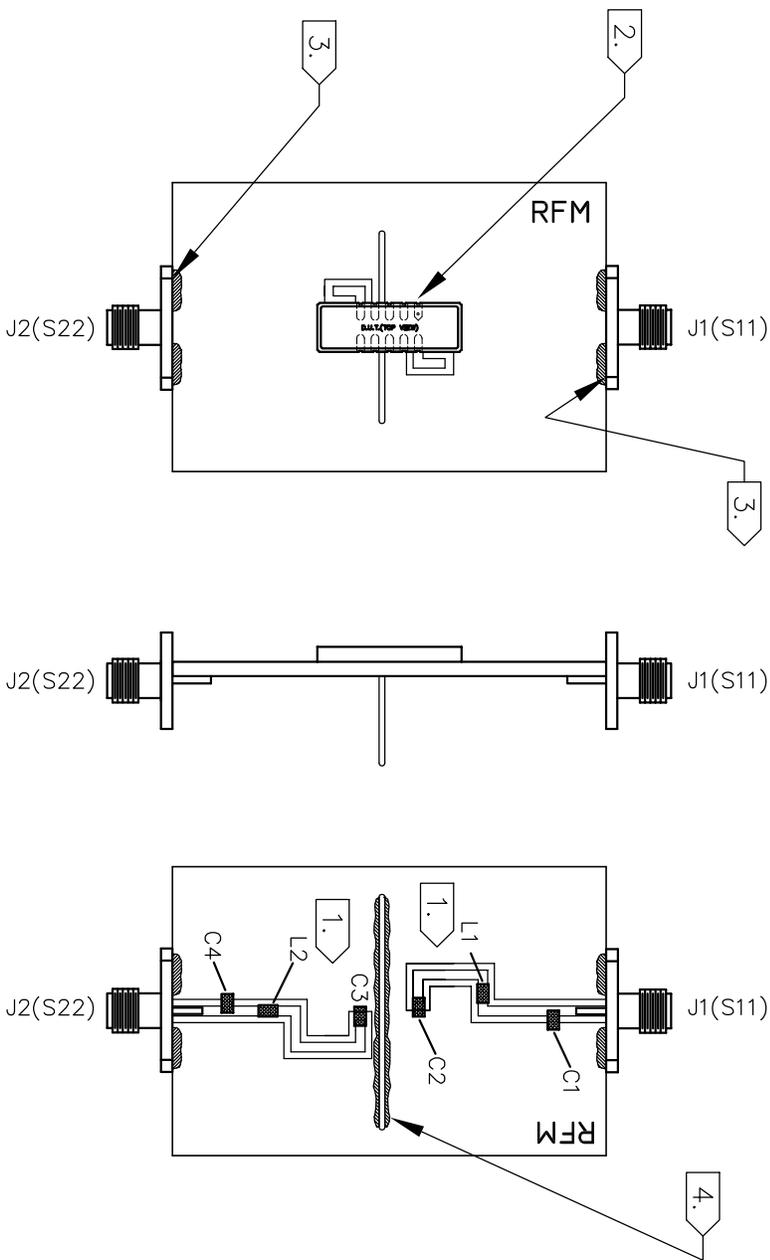
DWG. NO.: **SF1194A-000**

REV: **B**  
SHEET: **1/2**

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NOTES:

- 1. NOTE PROPER ORIENTATION OF INDUCTOR PAIRS L1 & L2. THEY ARE TO BE POSITIONED 90° TO EACH OTHER.
- 2. SOLDER SURFACE MOUNT PACKAGE TO TEST SIDE OF PCB. SOLDER 1Ø PLACES AS SHOWN. NOTE PIN 1 INDICATOR.
- 3. SOLDER CONNECTOR FLANGES ON BOTH SIDES OF PCB.
- 4. SOLDER SHIELD AS SHOWN.



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SIZE  
**A**

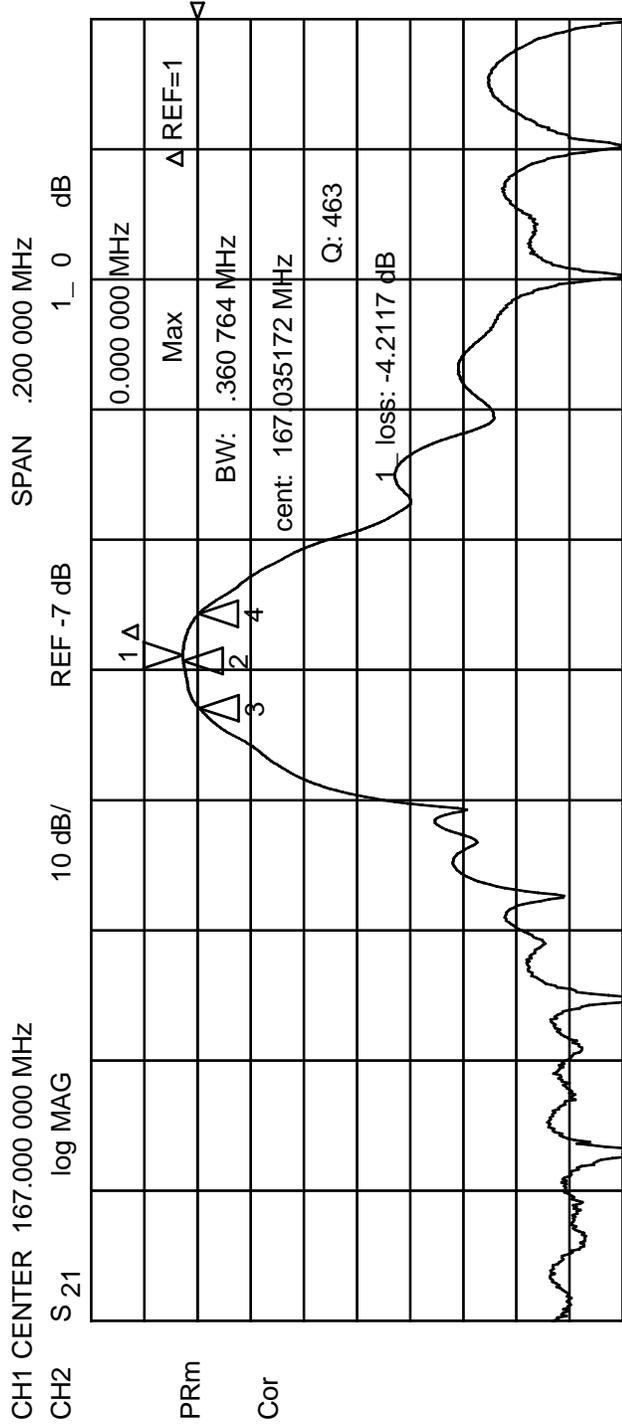
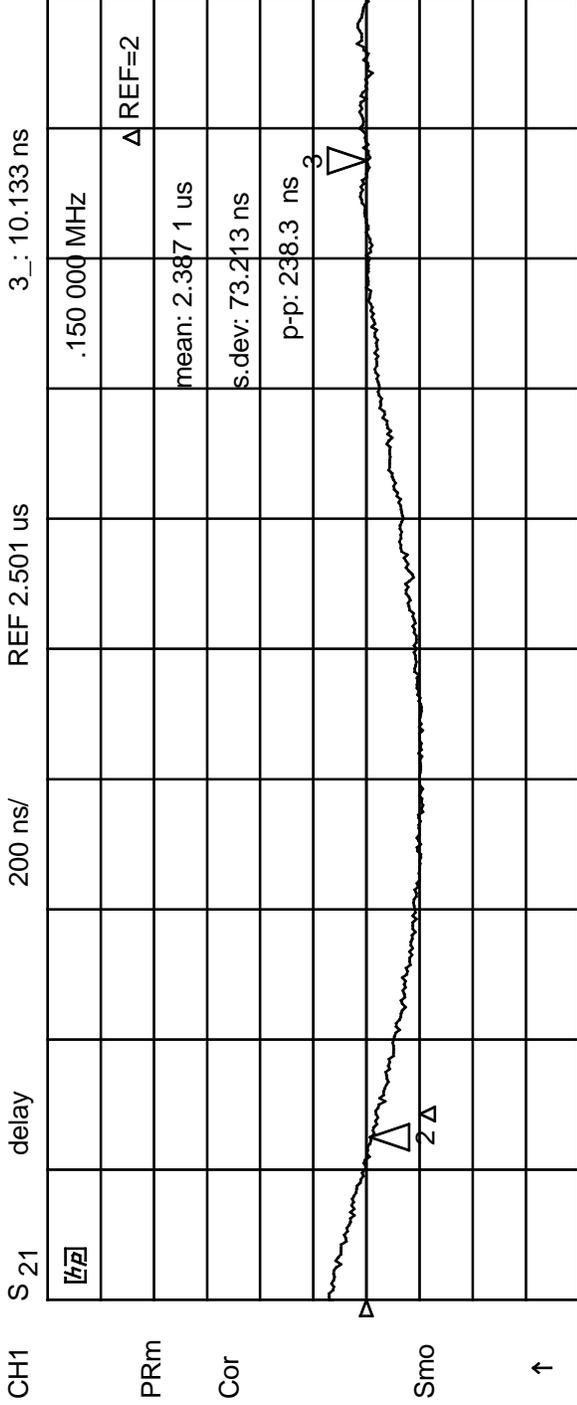
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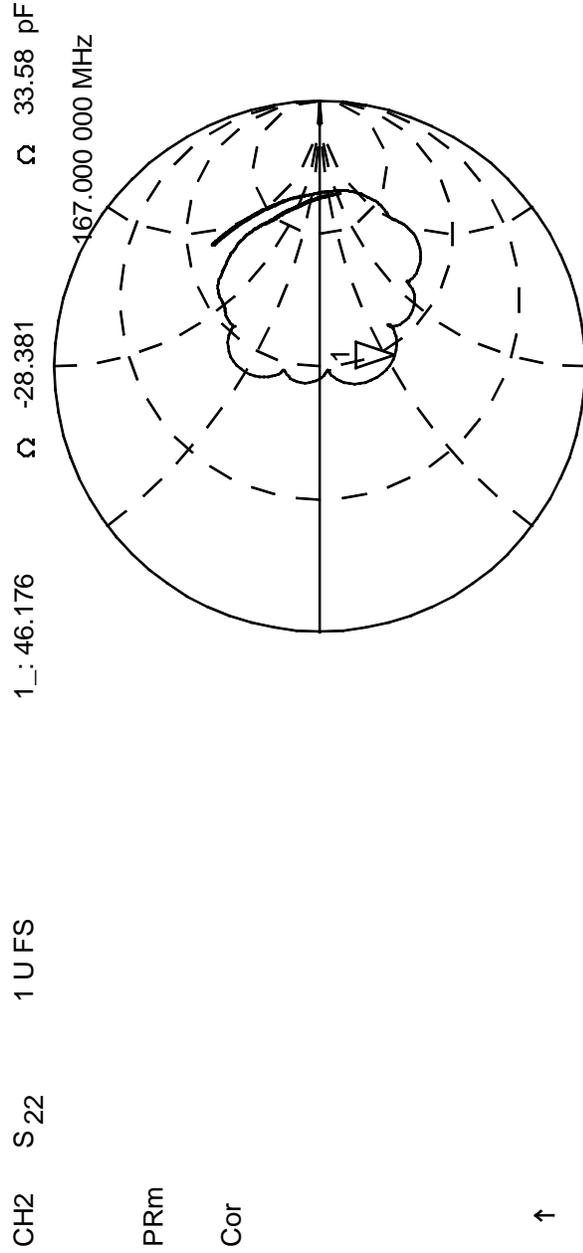
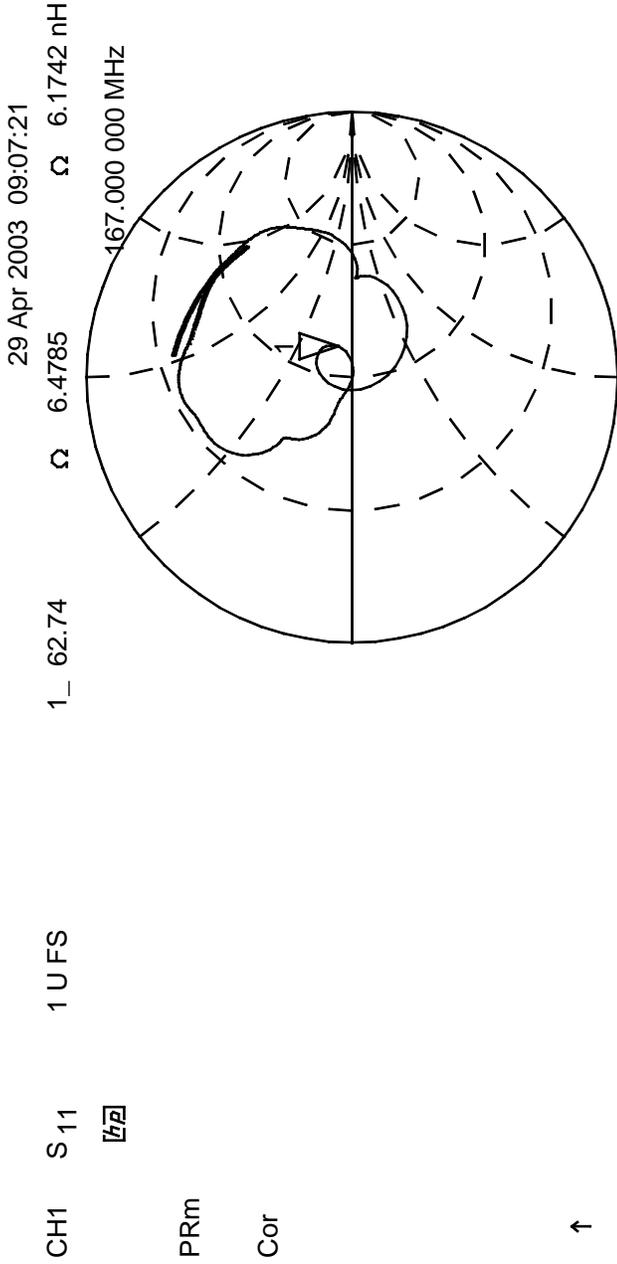
DWG. NO. **SF1194A-000**

REV  
**B**

SHEET  
**2**

29 Apr 2003 09:00:21  
REF 2.501 us  
3 : 10.133 ns



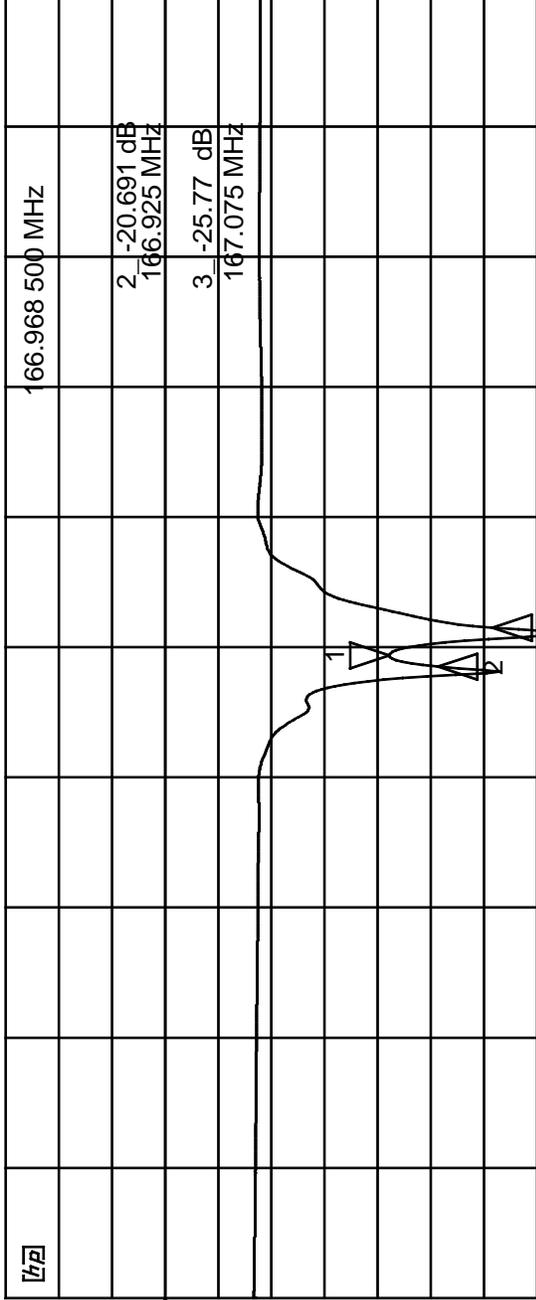


CENTER 167.000 000 MHZ SPAN 5.000 000 MHZ

	SIZE	FSCM NO.	DWG NO.	REV
	A	2U874	SF1194A-013	B
	SCALE	ECN NO.	SHEET	OF
	NONE	11383	3	6

29 Apr 2003 09:09:30

CH1 S 11 log MAG 5 dB/ REF 5 dB 1\_-16.063 dB

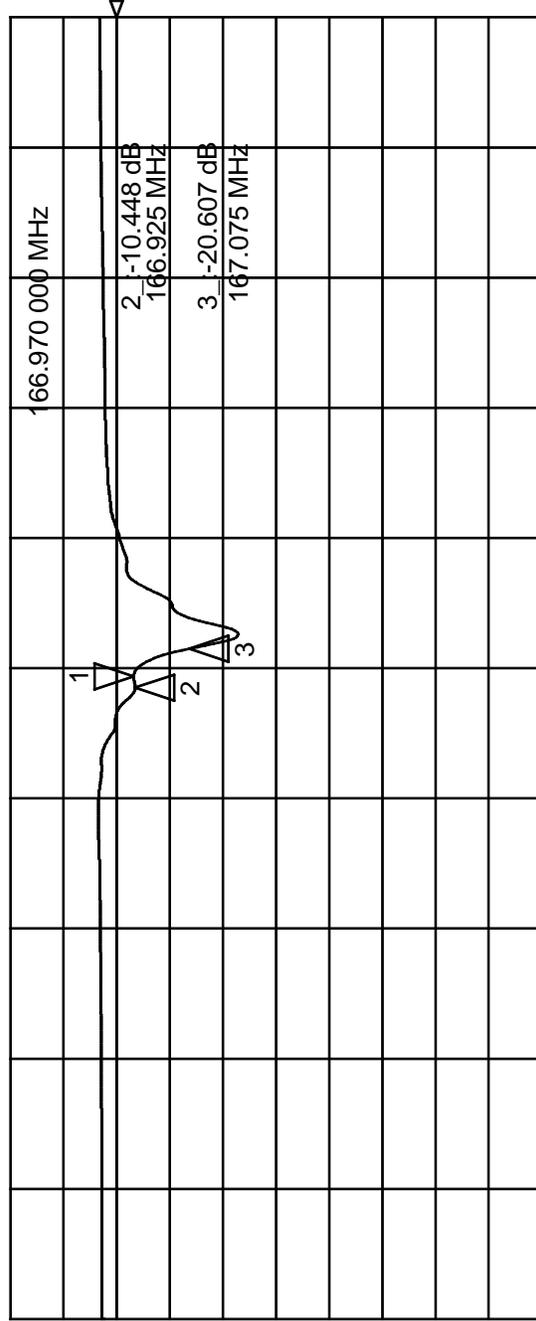


PRm

Cor

↑

CH2 S 22 log MAG 10 dB/ REF -7 dB 1\_-10.197 dB



PRm

Cor

↑

CENTER 167.000 000 MHz SPAN 5.000 000 MHz



SIZE A

FSCM NO. 2U874

DWG NO.

SF1194A-013

REV B

SCALE NONE

ECN NO.

11383

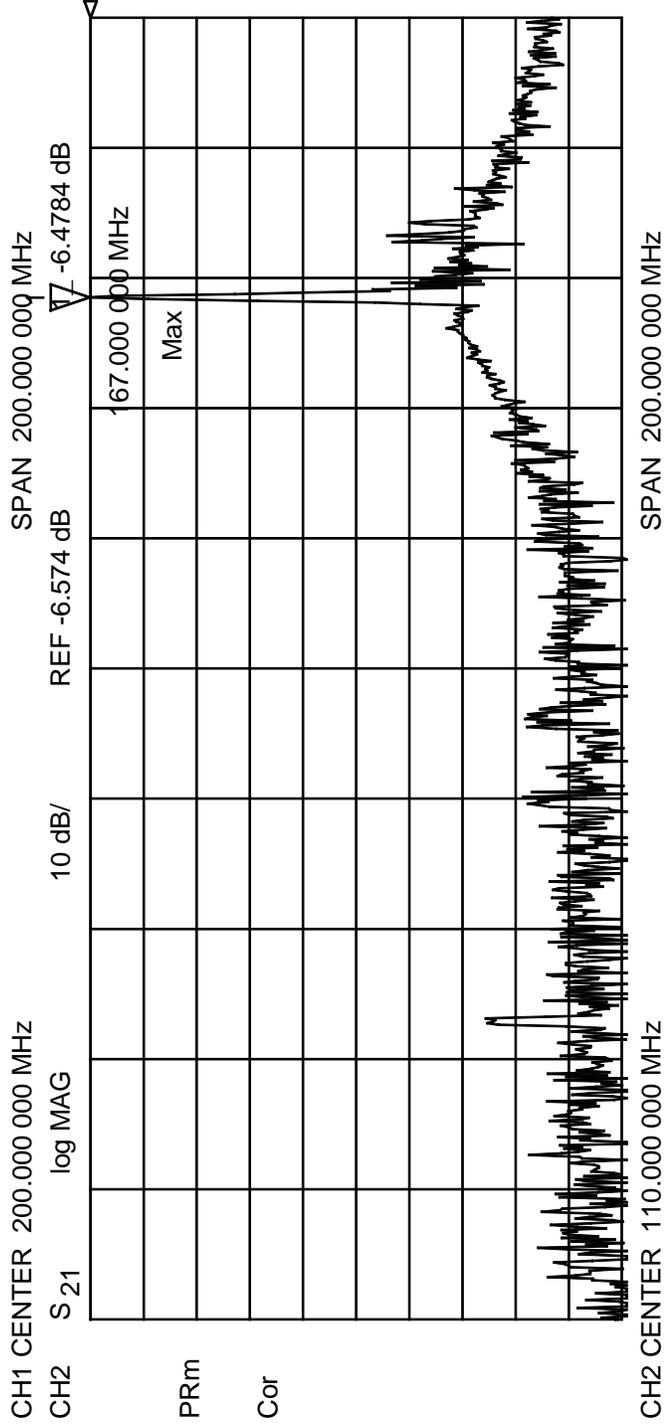
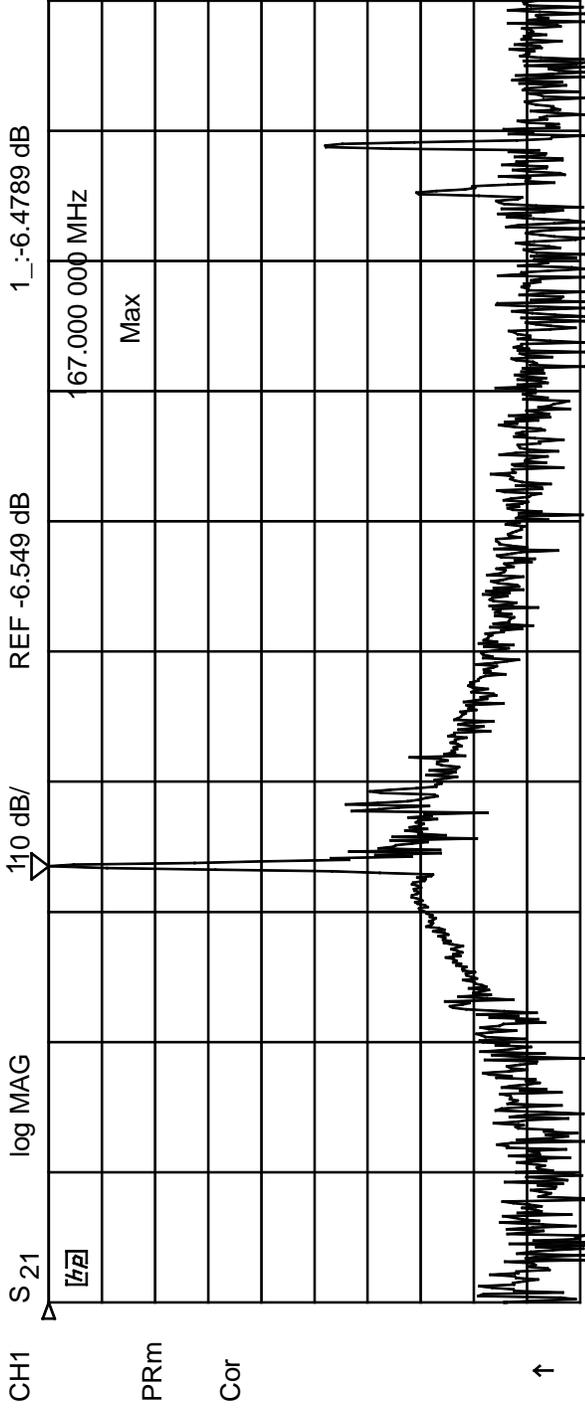
SHEET

4

OF

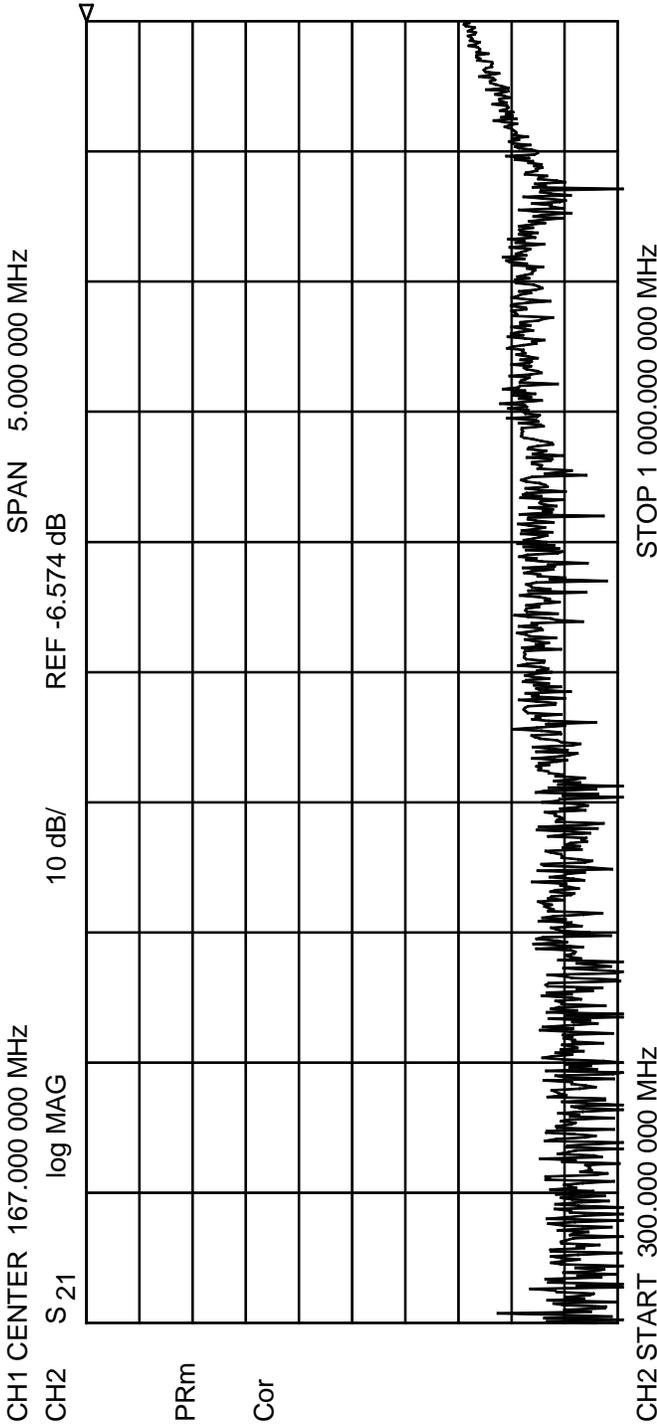
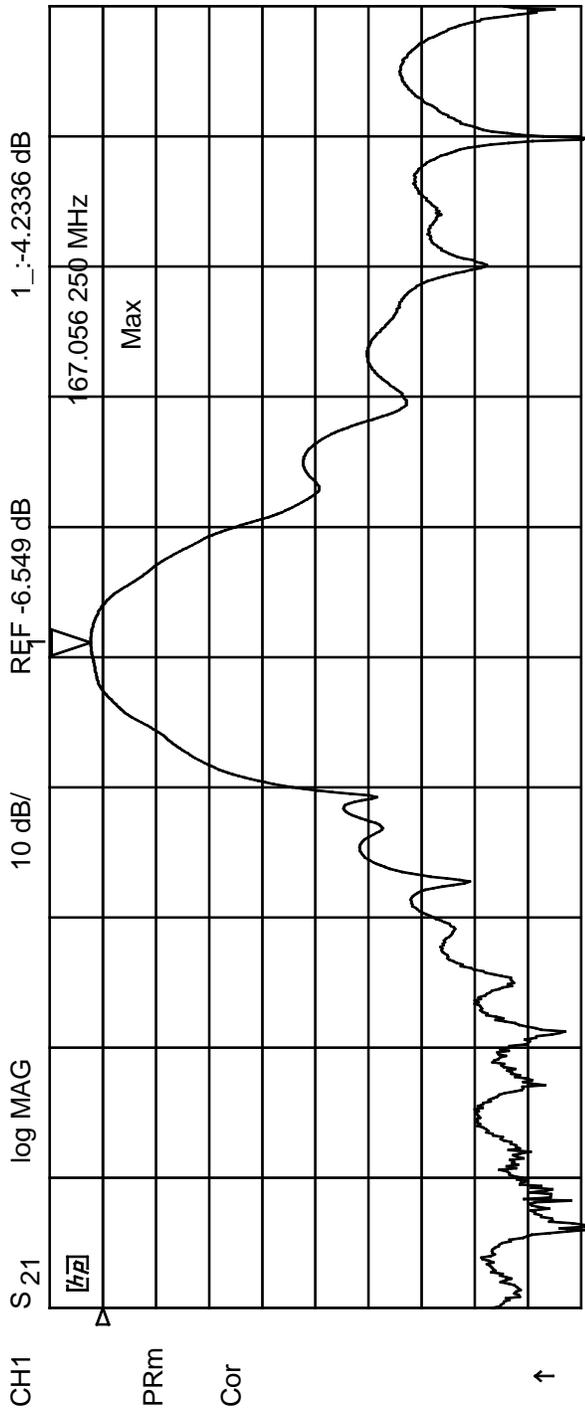
6

29 Apr 2003 09:12:52



SIZE	A	FSCM NO.	2U874	DWG NO.	SF1194A-013	REV	B
SCALE	NONE	ECN NO.	11383	SHEET	5	OF	6

29 Apr 2003 09:14:48



SIZE	A	FSCM NO.	2U874	DWG NO.	SF1194A-013	REV	B
SCALE	NONE	ECN NO.	11383	SHEET	6	OF	6