



SF1111A

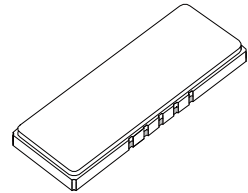
160 MHz SAW Filter

- **Designed for CDMA2000 BTS Applications**
- **Simple External Impedance Matching**
- **Hermetic SMP-97 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	



SMP-97

Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Nominal Center Frequency	f_c	1	160.000			MHz
Passband	IL	1, 2		9	11.0	dB
Insertion Loss at f_c						
1.5 dB Passband	$BW_{1.5}$		± 590			kHz
3 dB Passband	BW_3			± 750		
Amplitude Ripple over $f_c \pm 470$ kHz				0.7	1.0	dB
Phase Linearity over $f_c \pm 590$ kHz				2	5	°rms
Rejection		1, 2, 3	40			dB
$f_c - 10.0$ to $f_c - 1.25$ and $f_c + 1.25$ to $f_c + 10.0$ MHz			50			
$f_c - 20$ to $f_c - 10.0$ and $f_c + 10.0$ to $f_c + 20$ MHz						
Operating Temperature Range	T_A	1	-20		+70	°C

Impedance Matching to 50 Ω Unbalanced	External L-C
Case Style	SMP-97 24.6 x 9 mm Nominal Footprint
Lid Symbolization (YY = year, WW = week)	RFM SF1111A YYWW

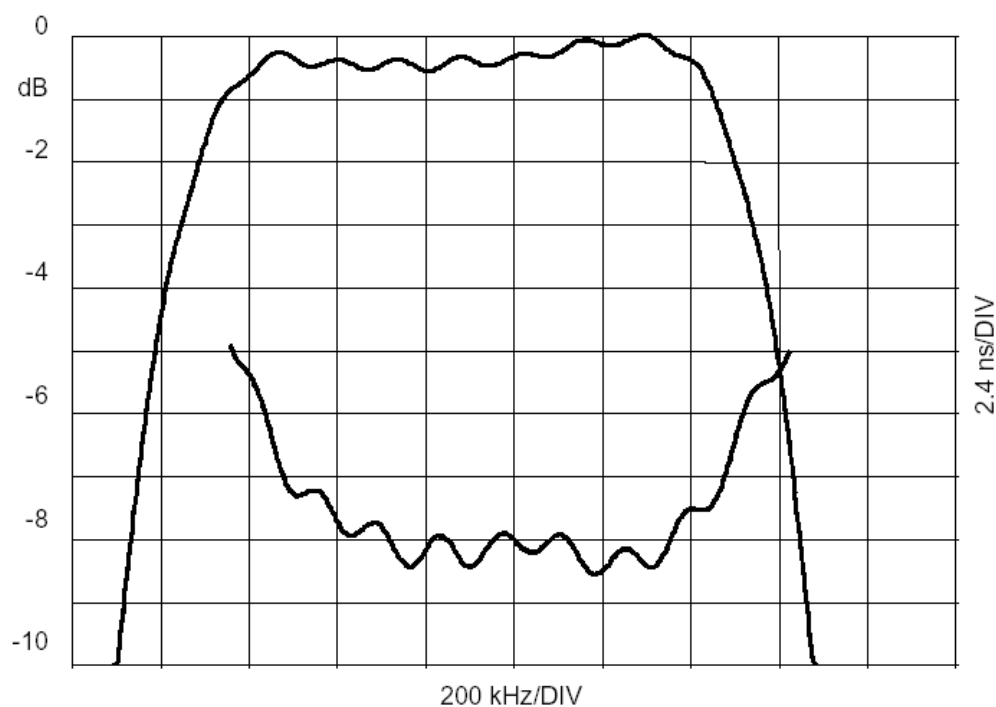
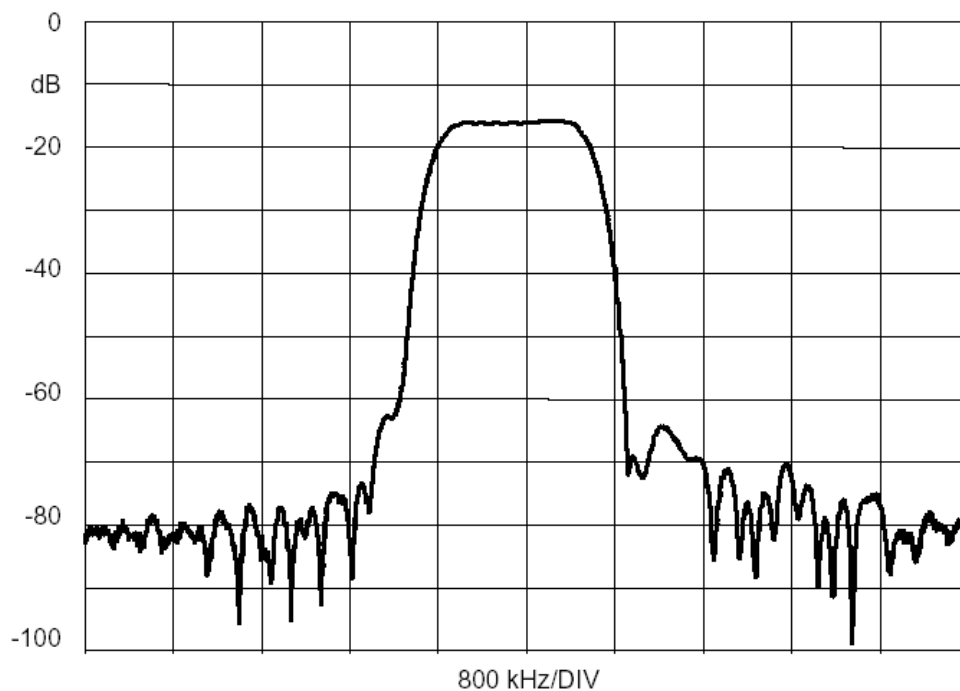
Notes:

- 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.
- Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency, f_c .
- 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.
- "LRIP" or "L" after the part number indicates "low rate initial production" and "ENG" or "E" indicates "engineering prototypes."
- The design, manufacturing process, and specifications of this filter are subject to change.
- 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.
- US and international patents may apply.
- Electrostatic Sensitive Device. Observe precautions for handling.



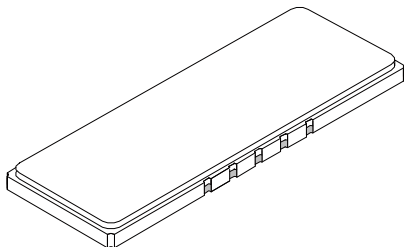
Electrical Connections

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-97 Case

10-Terminal Ceramic Surface-Mount Case 24.6 x 9 mm Nominal Footprint



Case Dimensions

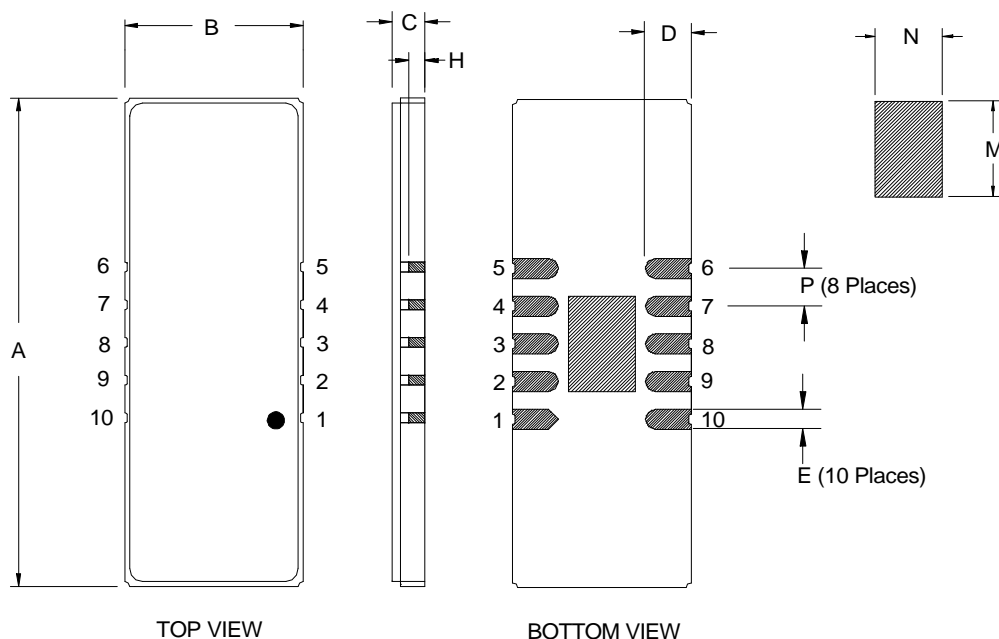
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	24.41	24.64	24.94	0.961	0.970	0.982
B	8.80	8.99	9.30	0.349	0.354	0.366
C		1.75	2.00		0.069	0.079
D		2.29			0.090	
E		1.02			0.040	
H		1.0			0.039	
M		4.83			0.190	
N		3.40			0.134	
P		1.905			0.075	

Materials

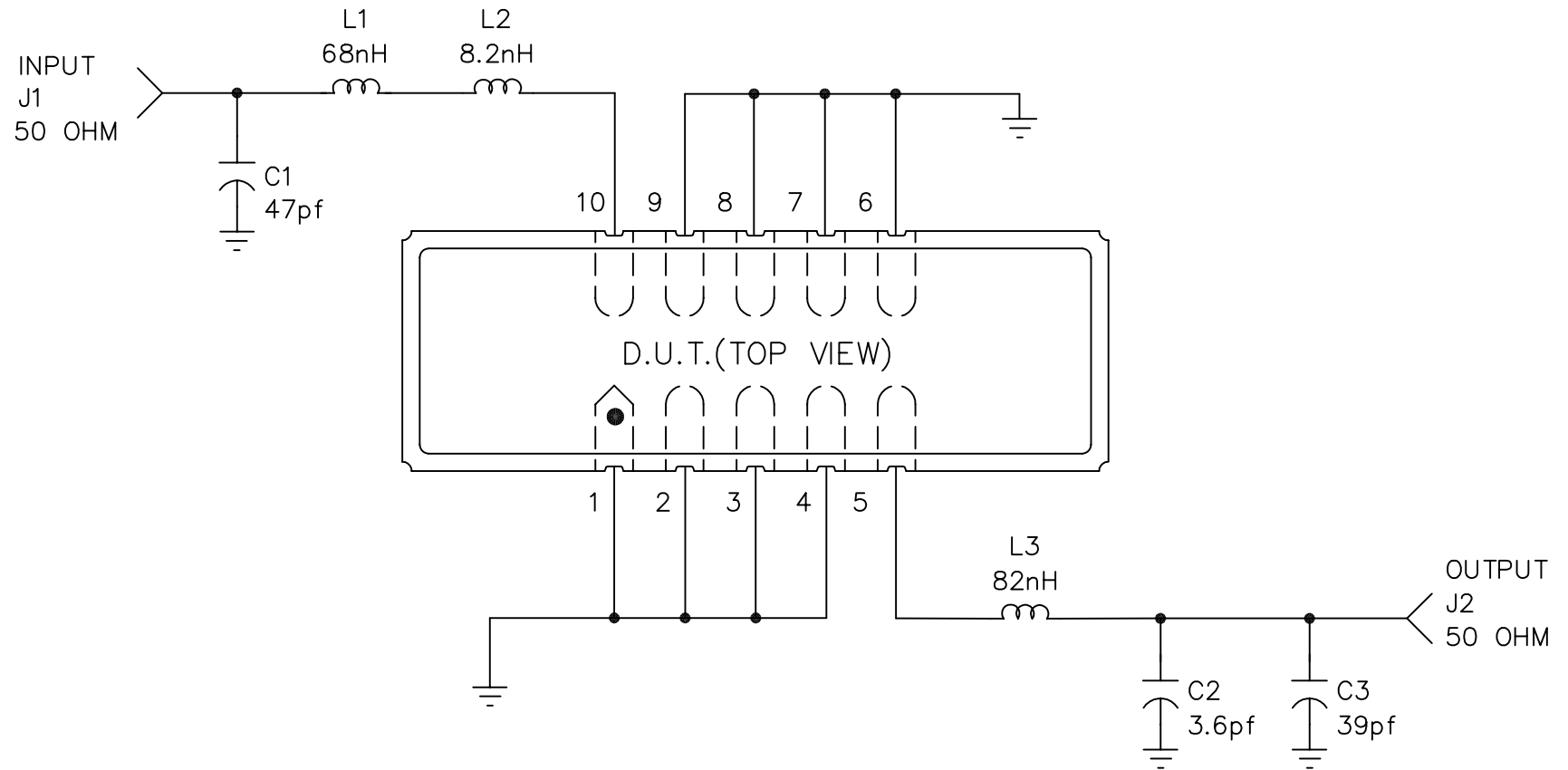
Solder Pad Termination	Au plating 30 - 60 ulnches (76.2-152 uM) over 80-200 ulnches (203-508 uM) Ni.
Lid	Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 ulnches Thick
Body	Al ₂ O ₃ Ceramic
Pb Free	

Electrical Connections

Connection		Terminals
Port 1	Input or Return	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



REV	ECN NO.	DESCRIPTION	DATE
A	8252	NEW DESIGN	05nov99



DRAWN BY/DATE: J.F.Christopherson 02nov99

TITLE: ASSEMBLY DIAGRAM, SF1111A(DEMO)

RF Monolithics, Inc.
DALLAS, TEXAS 75244

CHECKED/APPROVED

SIZE
A

CODE IDENT
2U874

DWG.
NO.

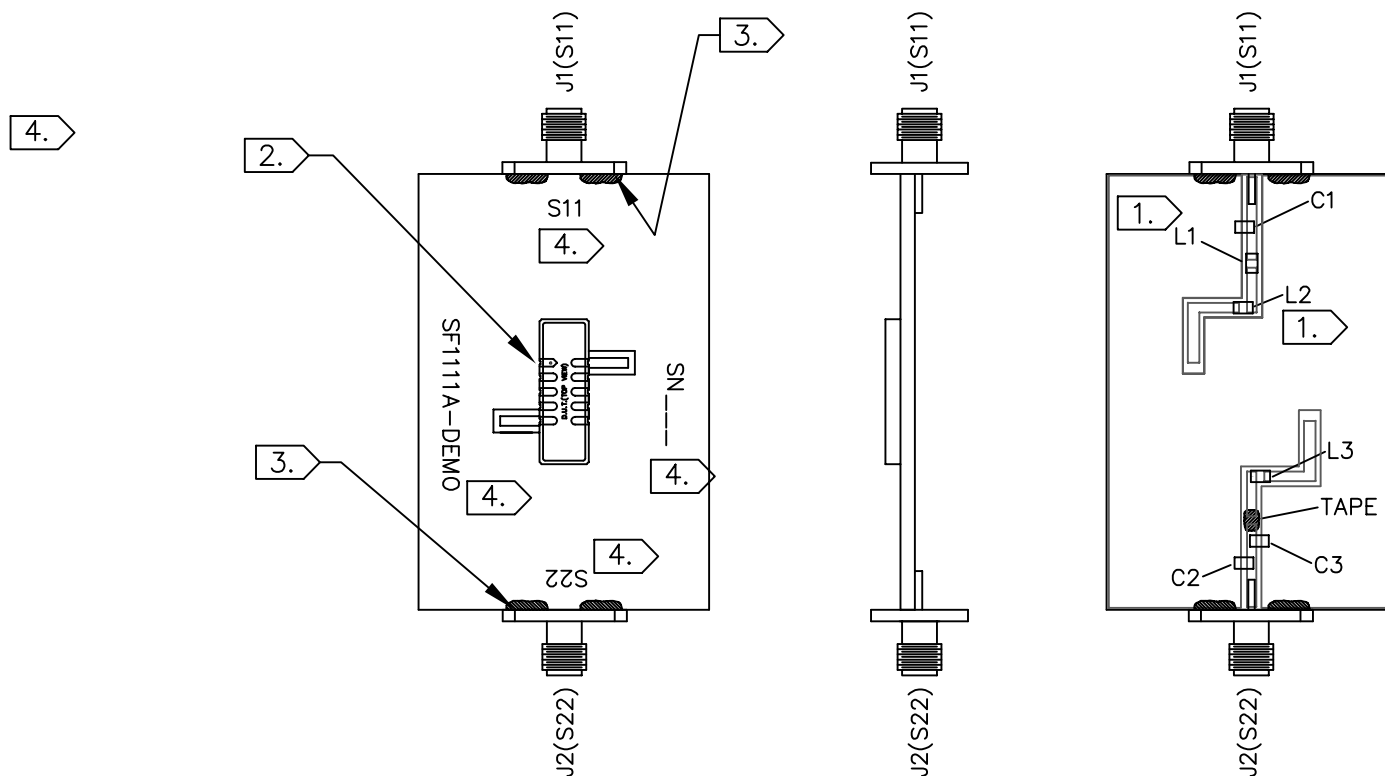
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REV
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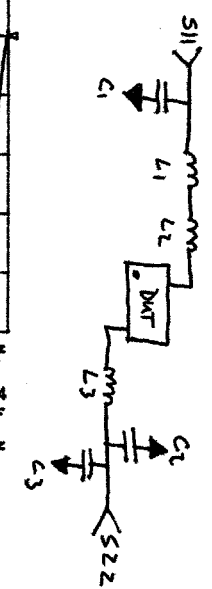
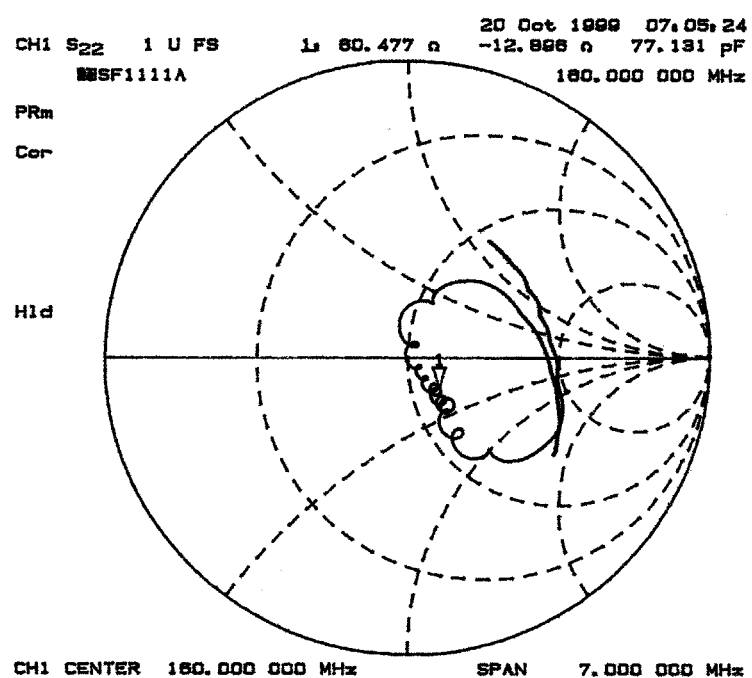
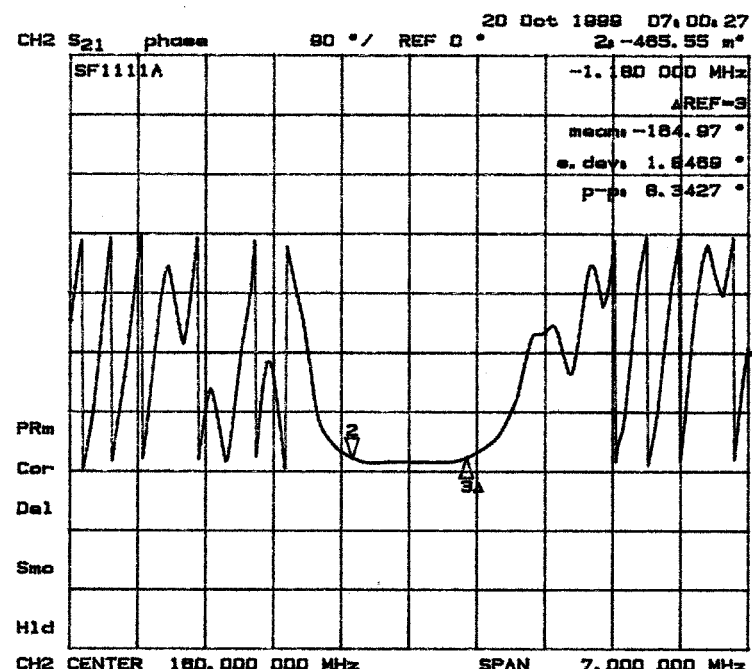
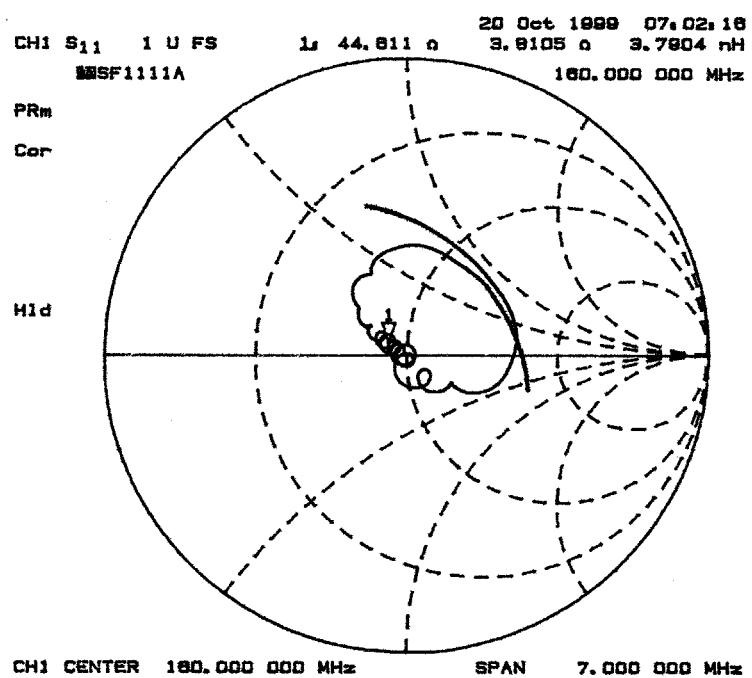
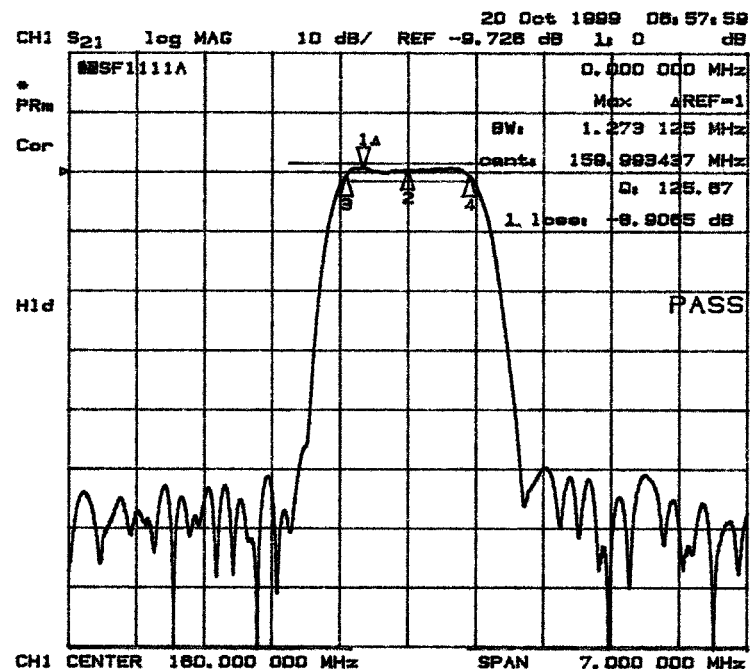
SHEET
1/4

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 10 PLACES AS SHOWN. NOTE PIN 1 INDICATOR.
3. SOLDER CONNECTOR FLANGES ON BOTH SIDES OF PCB.
4. MARK USING LABEL MAKER.



SF1111A-DEMO
 SN# 4
 DATE CODE: 9935
 10-20-99
 (R)

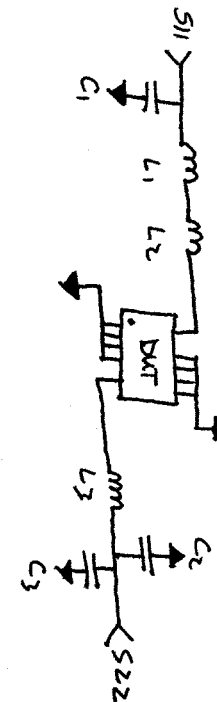
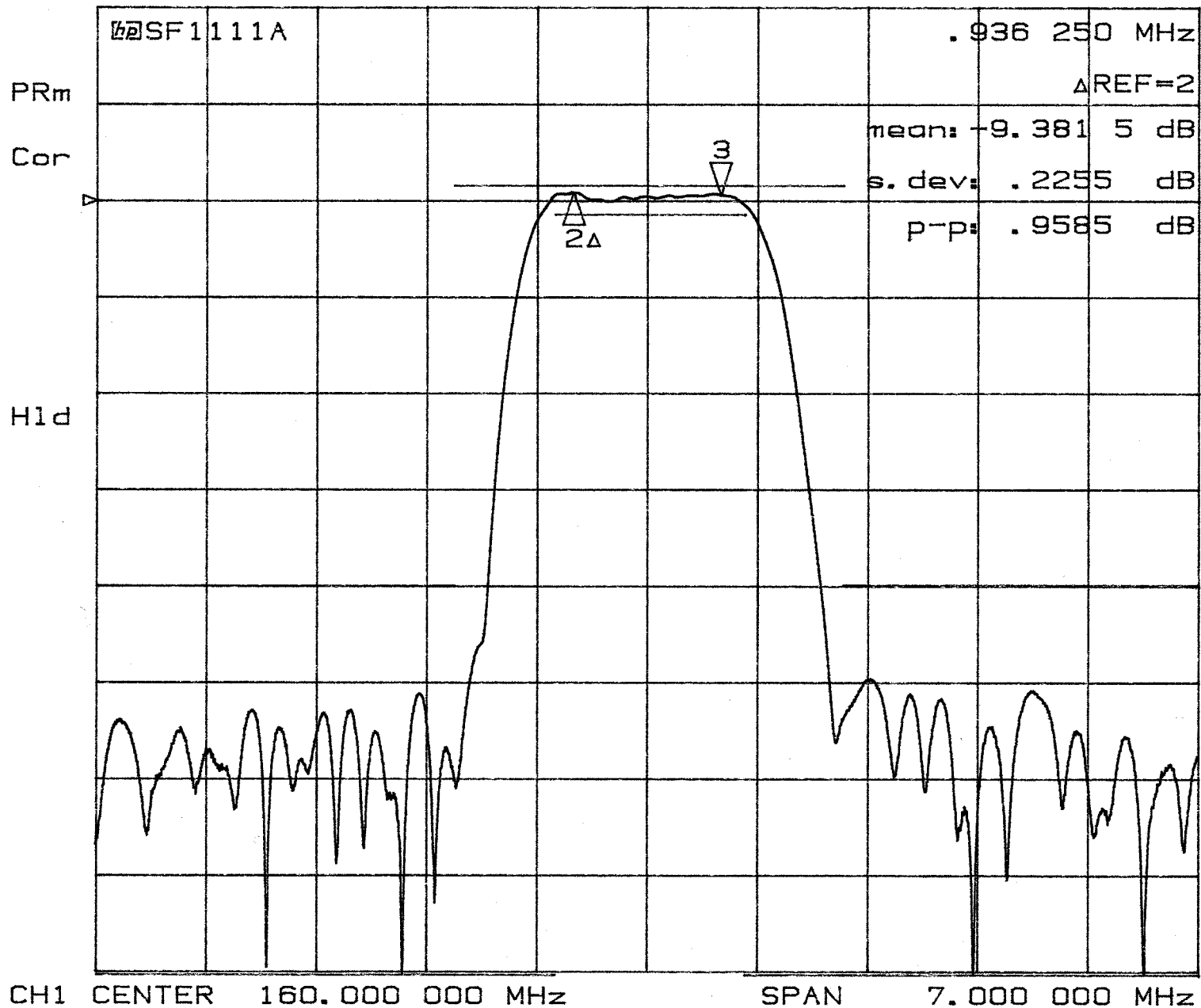


C1 = 47 pF.
 C2 = 3.6 pF.
 C3 = 39 pF.
 L1 = 68 nH
 L2 = 8.2 nH
 L3 = 82 nH

SF1111A-000

SF1111A-DEMO
 SN#4
 DATE CODE: 9935
 10-20-99
 (2)

20 Oct 1999 07:10:26
 CH1 S₂₁ log MAG 10 dB/ REF -9.726 dB 3: -.2693 dB



C₁ = 47 pf.
 C₂ = 3.6 pf.
 C₃ = 39 pf.
 L₁ = 68 nH
 L₂ = 8.2 nH
 L₃ = 8.2 nH

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