

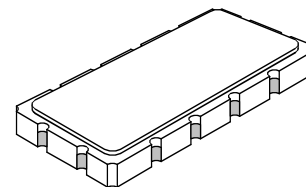


- **Designed for WCDMA 3G IF Applications**
- **Excellent Size-to-Performance Ratio**
- **Balanced or Unbalanced Input and Output**
- **Hermetic 13.3 x 6.5 mm Surface-mount Case**
- **Complies with Directive 2002/95/EC (RoHS)**



SF1124A

190 MHz SAW Filter



SMP-53

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 | 190.000 | | | MHz |
| Passband | Insertion Loss at f_C | IL | | 12 | 14.0 | dB |
| | 1 db Passband | BW_1 | 4.6 | 5.1 | | MHz |
| | 3 db Passband | BW_3 | 5.1 | 5.7 | | MHz |
| | Amplitude Ripple over $f_C \pm 2.4$ MHz | | | .70 | 1.0 | dB _{P-P} |
| | Phase Linearity over $f_C \pm 2.4$ MHz | | | 4 | 10 | ° _{P-P} |
| | Group Delay Variation over $f_C \pm 2.4$ MHz | GDV | | 75 | 120 | ns _{P-P} |
| Rejection | $f_C - 4.1$ to $f_C - 3.65$ and $f_C + 3.4$ to $f_C + 3.8$ MHz | 1, 2, 3 | 10 | | | dB |
| | $f_C - 5.0$ to $f_C - 4.1$ and $f_C + 3.8$ to $f_C + 5.0$ MHz | | 30 | | | |
| | $f_C - 10.0$ to $f_C - 5.0$ and $f_C + 5.0$ to $f_C + 10.0$ MHz | | 40 | | | |
| | $f_C - 20.0$ to $f_C - 10.0$ and $f_C + 10.0$ to $f_C + 20.0$ MHz | | 40 | | | |
| | At 157.6 MHz | | 40 | | | |
| | At 165.7 MHz | | 40 | | | |
| | $f_C - 60$ MHz to $f_C - 20$ MHz | | 40 | | | |
| | $f_C + 20$ MHz to $f_C + 60$ MHz | | 40 | | | |
| Part to Part Average Group Delay Variation | | | | | ±5 | nsec |
| Operating Temperature Range | T_A | 1 | -10 | +25 | +85 | °C |
| Frequency Temperature Coefficient | FTC | | | -18 | | ppm/°C |
| Impedance Matching to 50Ω Unbalanced | External L-C | | | | | |
| Case Style | SMP-53 13.3 x 6.5 mm Nominal Footprint | | | | | |
| Lid Symbolization (YY = year, WW = week) | RFM SF1124A YYWW | | | | | |

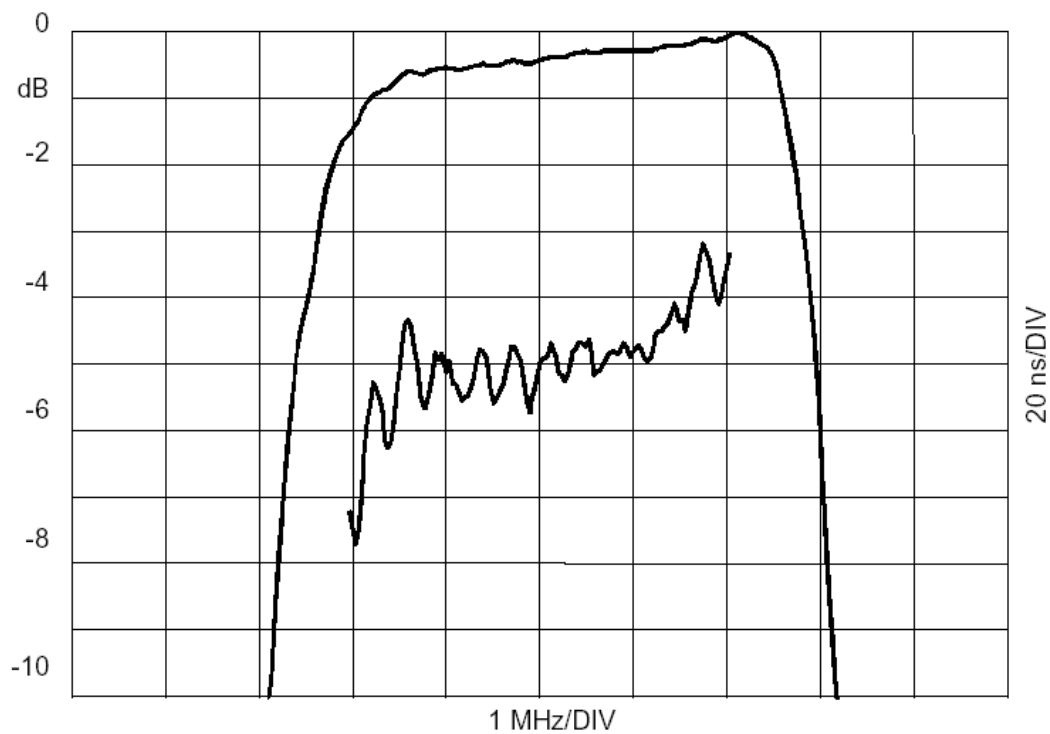
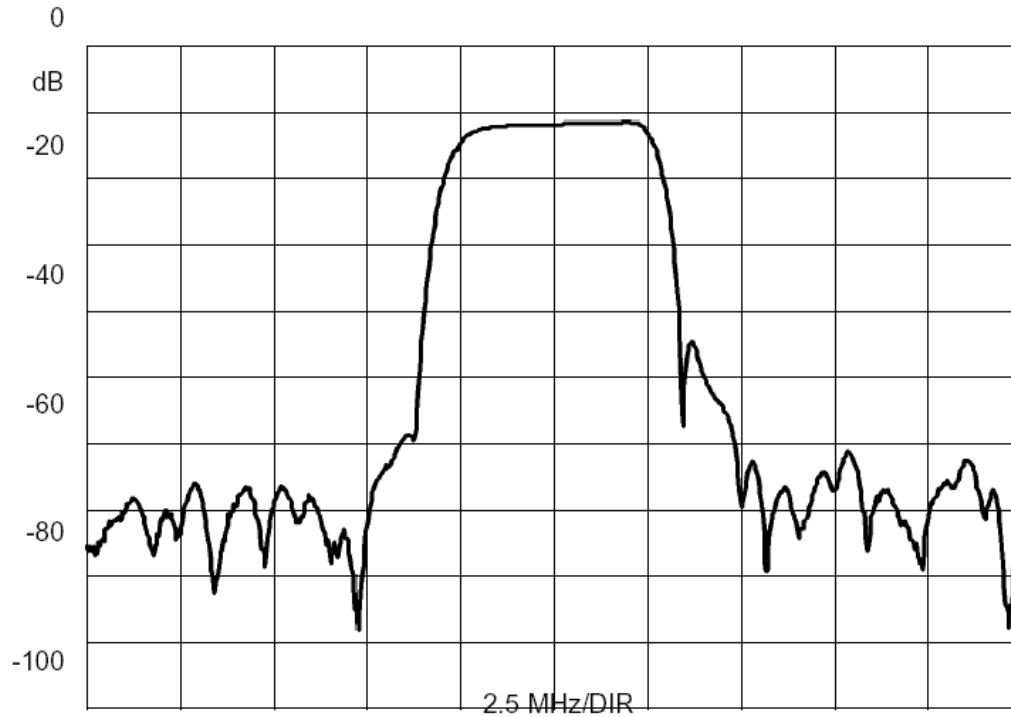
Notes:

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. 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. Electrostatic Sensitive Device. Observe precautions for handling.



Electrical Connections

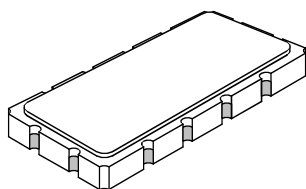
| Connection | Terminals |
|-------------------|------------|
| Port 1 Hot | 11 |
| Port 1 Gnd Return | 12 |
| Port 2 Hot | 5 |
| Port 2 Gnd Return | 6 |
| Case Ground | All others |



SMP-53 Case

12-Terminal Ceramic Surface-Mount Case

13.3 x 6.5 mm Nominal Footprint



Case Dimensions

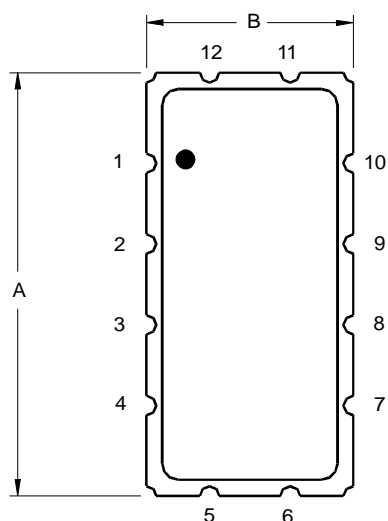
| Dimension | mm | | | Inches | | |
|-----------|-------|-------|-------|--------|-------|-------|
| | Min | Nom | Max | Min | Nom | Max |
| A | 13.08 | 13.31 | 13.60 | 0.515 | 0.524 | 0.535 |
| B | 6.27 | 6.50 | 6.80 | 0.247 | 0.256 | 0.268 |
| C | | 1.91 | 2.00 | | 0.075 | 0.079 |
| D | | 1.50 | | | 0.059 | |
| E | | 0.79 | | | 0.031 | |
| H | | 1.0 | | | 0.039 | |
| P | | 2.54 | | | 0.100 | |

Materials

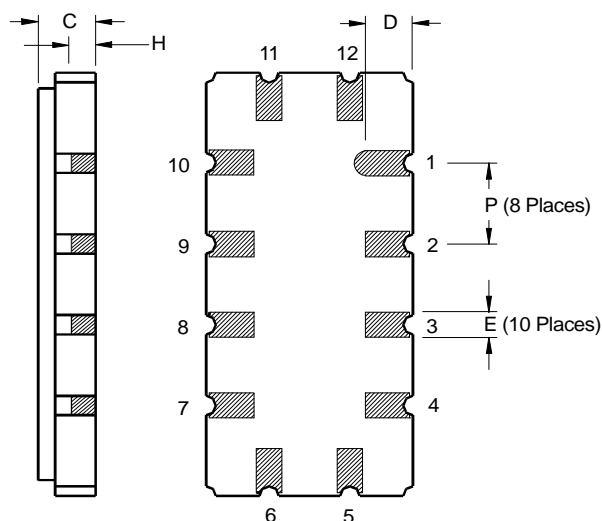
| | |
|------------------------|--|
| Solder Pad Termination | Au plating 30 - 60 ulnches (76.2-152 uM) over 80-200 ulnches (203-508 uM) Ni. |
| Lid | Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 ulnches Thick |
| Body | Al ₂ O ₃ Ceramic |
| Pb Free | |

Electrical Connections

| Connection | | Terminals |
|------------------------|------------------|------------------|
| Port 1 | Input or Return | 11 |
| | Return or Input | 12 |
| Port 2 | Output or Return | 5 |
| | Return or Output | 6 |
| Ground | | All others |
| Single Ended Operation | | Return is ground |
| Differential Operation | | Return is hot |

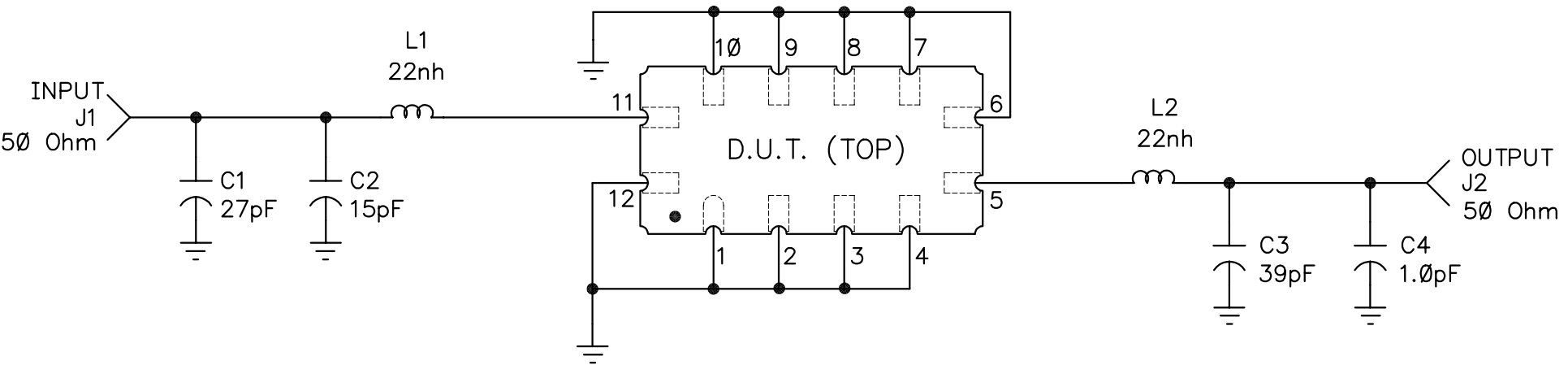


TOP VIEW



BOTTOM VIEW

| REV | ECN NO. | DESCRIPTION | APP/DATE |
|-----|---------|-----------------|----------|
| A | 9188 | INITIAL RELEASE | 29nov00 |



DRAWN BY/DATE: J.F.Christopherson 29nov00

TITLE: SF1124A DEMO PCB

RF Monolithics, Inc.
DALLAS, TEXAS 75244

CHECKED/APPROVED

SIZE
A

CODE IDENT
2U874

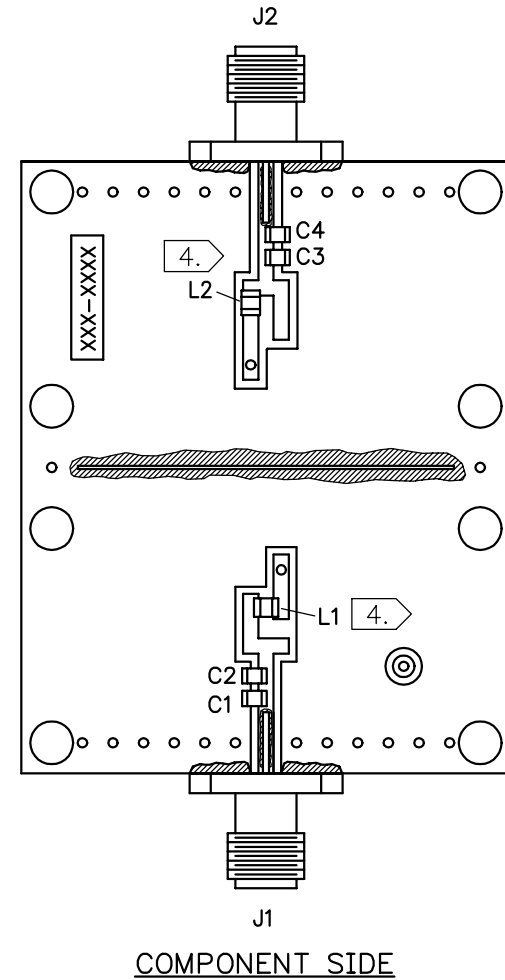
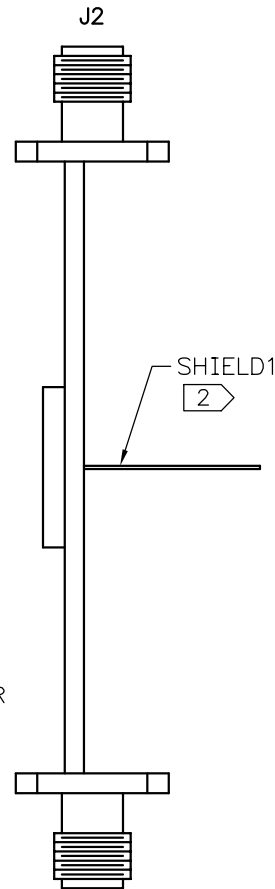
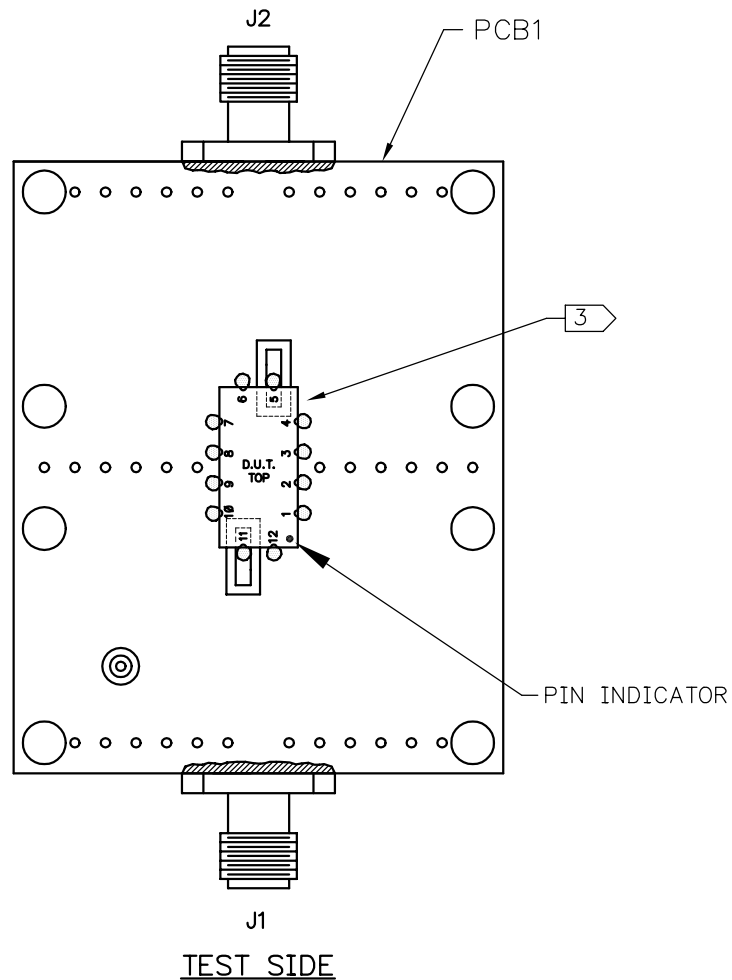
DWG. NO. SF1124A-000

REV
A

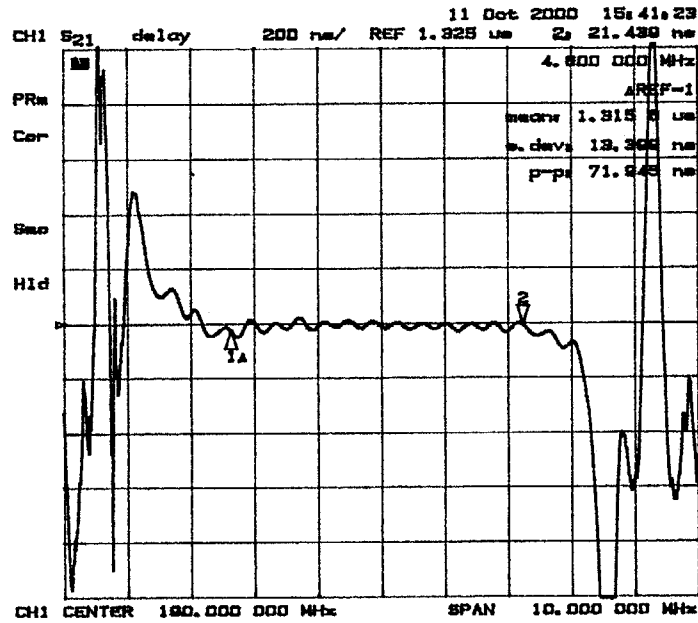
SHEET
1/3

NOTES:

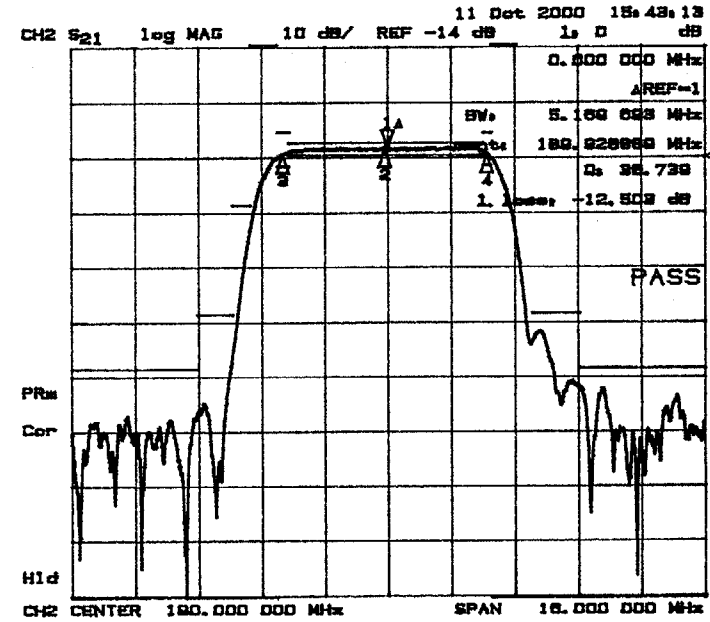
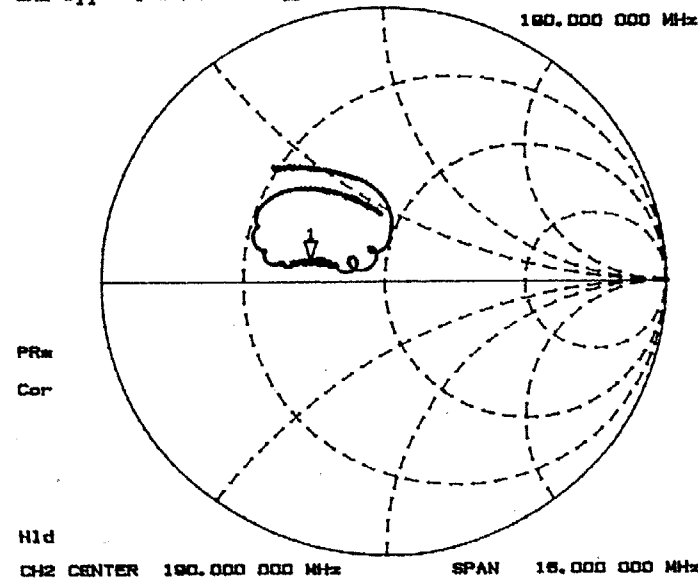
1. SOLDER MOUNT COMPONENTS & CONNECTORS TO PCB1.
2. SOLDER SHIELD1 AS SHOWN AND TRIM TAB FROM SHIELD SO THAT IT IS FLUSH WITH PCB.
3. ORIENT THE FLTR1 AND SOLDER IT DOWN TO THE BOARD AS SHOWN.
4. L1 AND L2 INDUCTORS ARE 90° TO EACH OTHER.



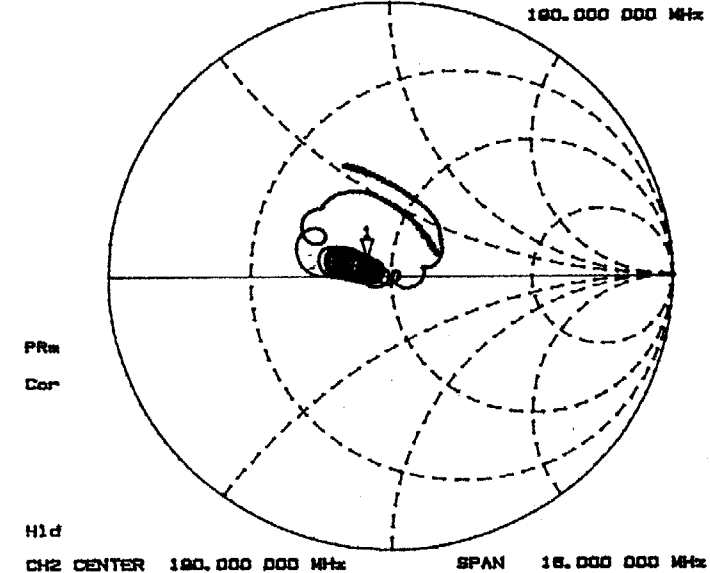
SF1124A
 DEMO#4
 10-11-00
 RT



11 Oct 2000 15:45:23
 CH2 S11 1 U F5 1s 29.193 n 4.791 n 4.0132 nH
 190.000 000 MHz



11 Oct 2000 15:48:14
 CH2 S22 1 U F8 1s 41.998 n 5.8035 n 4.8955 nH
 190.000 000 MHz



C1=23pf
 C2=15pf
 C3=39pf
 C4=1pf

L1, L2=2.2nH

