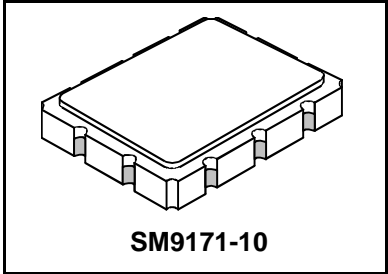




**SF1126A**

**127 MHz  
SAW Filter**



- **Designed for Interactive Video Applications**
- **Wide Bandwidth and Excellent GD Variation**
- **9.1 x 7.1 mm Surface-mount Case**
- **Single Ended 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 |       |

**Electrical Characteristics**

| Characteristic   | Sym  | Notes      | Min        | Typ | Max  | Units             |
|--|--|------------|------------|-----|------|-------------------|
| Nominal Center Frequency   | $f_c$                                      | 1          | 127.000    |     |      | MHz               |
| Passband   | Insertion Loss at $f_c$<br>1.3 db Passband | IL         |            | 14  | 15.0 | dB                |
|  |  | $BW_{1.3}$ | $\pm 15.0$ |     |      | MHz               |
| Group Delay Variation over $f_c \pm 12.0$ MHz<br>Phase Linearity over $f_c \pm 12.0$ MHz | GDV  | 1, 2       |            | 11  | 30   | ns <sub>p-p</sub> |
|  |  |            |            |     | 10   | ° <sub>p-p</sub>  |
| Rejection  | < 107.0 MHz<br>> 147.25 MHz<br>Ultimate    | 1, 2, 3    | 40         |     |      | dB                |
|  |  |            | 40         |     |      |                   |
|  |  |            | 40         |     |      |                   |
| Operating Temperature Range  | $T_A$                                      | 1          | +25        |     | +30  | °C                |
| Frequency Temperature Coefficient  | FTC  |            |            | -94 |      | ppm/°C            |

|  |  |
|--|--|
| Impedance Matching to 50Ω Unbalanced     | External L-C                             |
| Case Style                               | SM9171-10 9.1 x 7.1 mm Nominal Footprint |
| Lid Symbolization (YY = year, WW = week) | RFM SF1126A YYWW                         |

**Notes:**

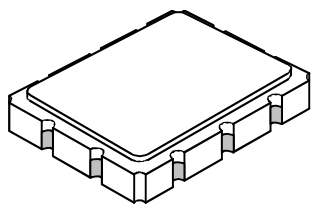
1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to 50 Ω and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal 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. Part to part absolute delay measurement records the absolute delay mean across 1 dB passband.
5. "LRIP" or "L" after the part number indicates "low rate initial production" and "ENG" or "E" indicates "engineering prototypes."
6. The design, manufacturing process, and specifications of this filter are subject to change.
7. 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.
8. US and international patents may apply.
9. Electrostatic Sensitive Device. Observe precautions for handling.

**Electrical Connections**

| Connection          | Terminals  |
|---------------------|------------|
| Port 1 Hot (Input)  | 1          |
| Port 1 Gnd Return   | 10         |
| Port 2 Hot (Output) | 6          |
| Port 2 Gnd Return   | 5          |
| Case Ground         | All others |

# SM9171-10 Case

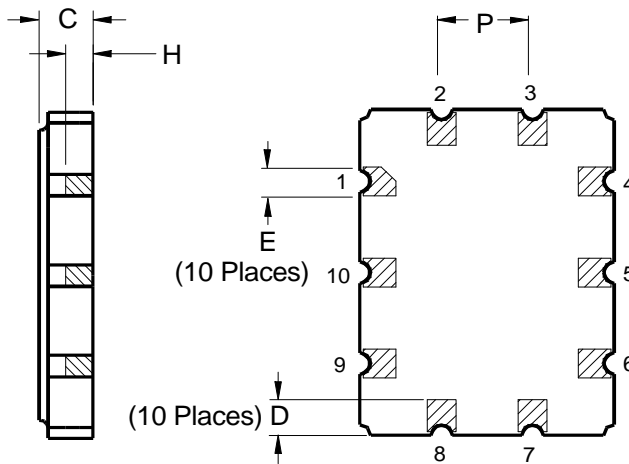
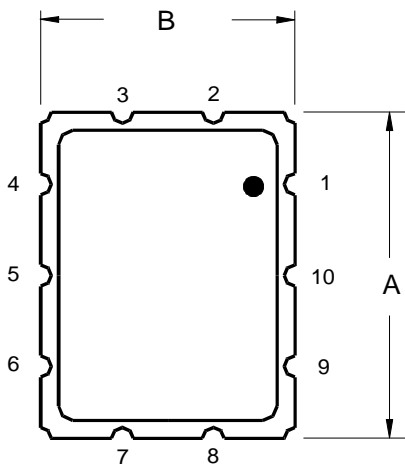
## 10-Terminal Ceramic Surface-Mount Case 9.1 x 7.1 mm Nominal Footprint



| 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 |       |

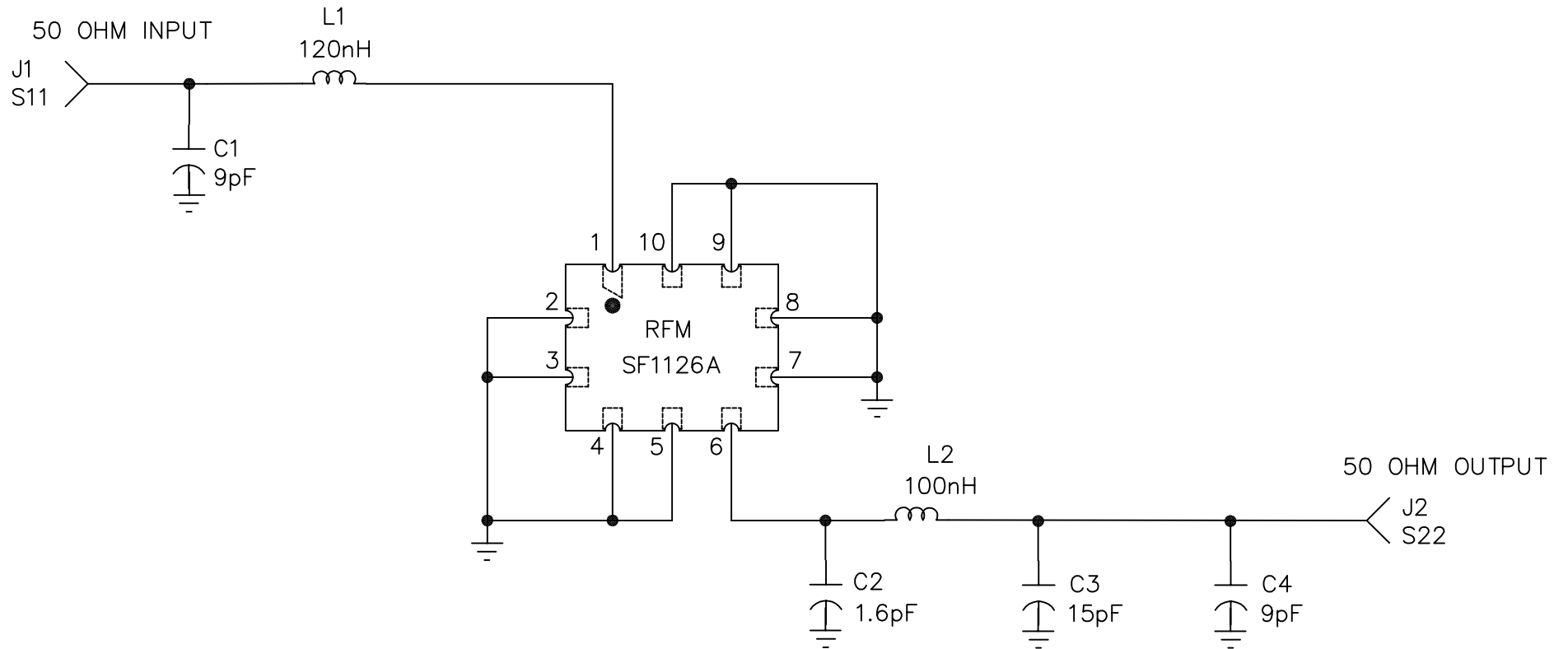
| Materials              |  |
|------------------------|--|
| Solder Pad Termination | Au plating 30 - 60 μinches (76.2-152 μm) over 80-200 μinches (203-508 μm) Ni.    |
| Lid                    | Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 μinches Thick |
| Body              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

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



NOTES:

| REV | ECN NO. | DESCRIPTION     | APP/DATE |
|-----|---------|-----------------|----------|
| A   | 8180    | INITIAL RELEASE | 08oct99  |



SCHEMATIC

D.U.T. VIEWED FROM TOP

DRAWN BY/DATE: J.F.Christopherson 08oct99

TITLE: ASSEMBLY DIAGRAM, SF1126A-DEMO

RF Monolithics, Inc.  
DALLAS, TEXAS 75244

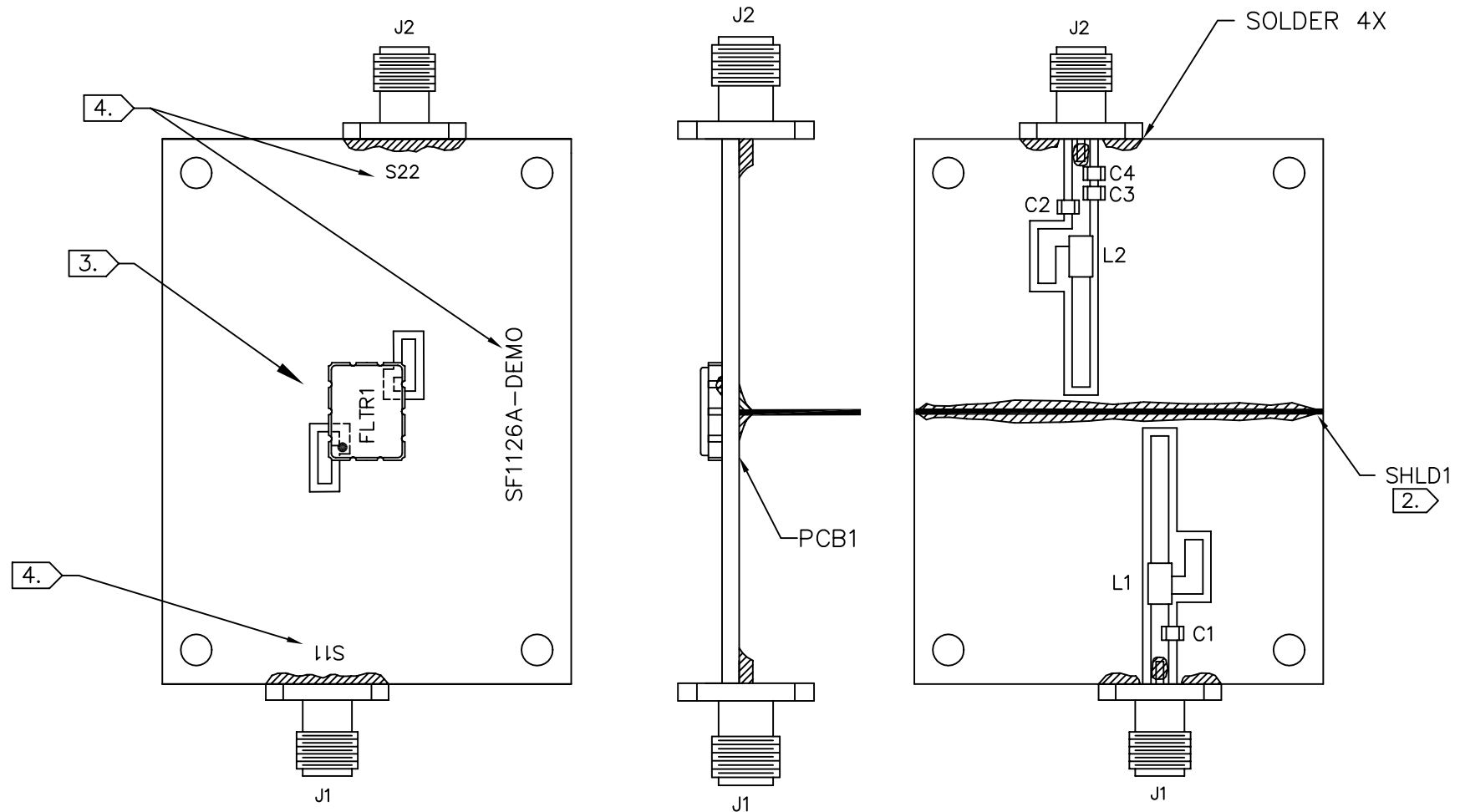
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CODE IDENT 2U874

DWG. NO. SF1126A-000

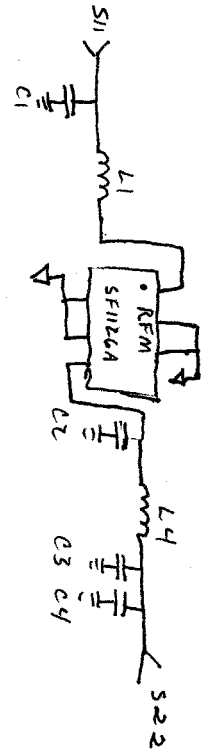
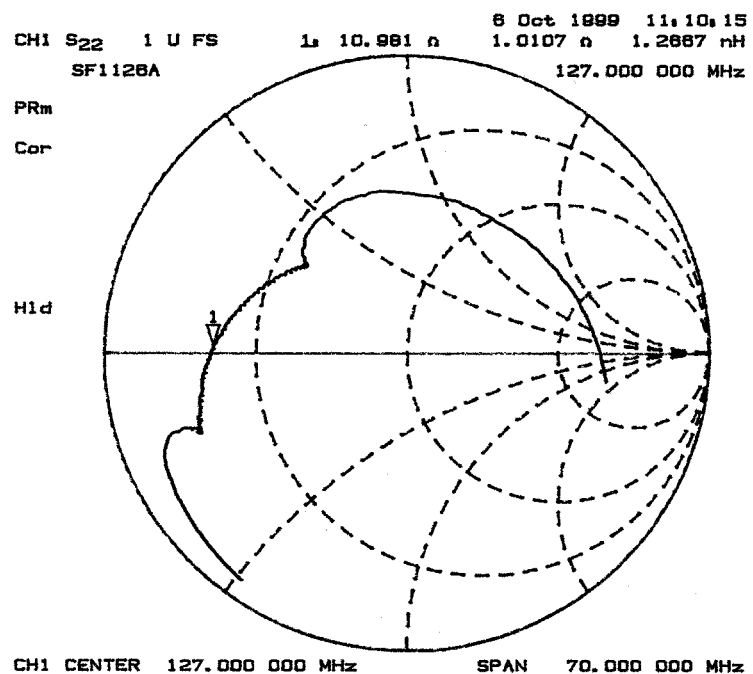
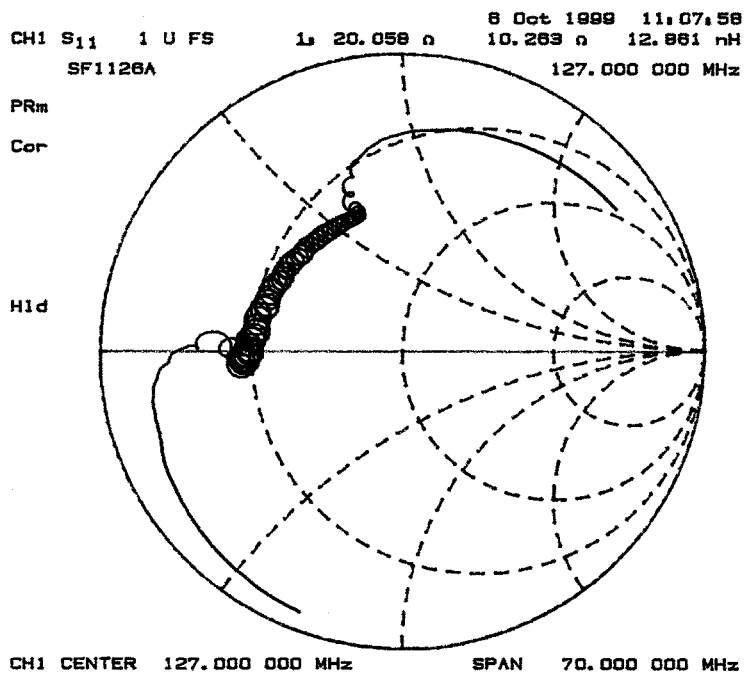
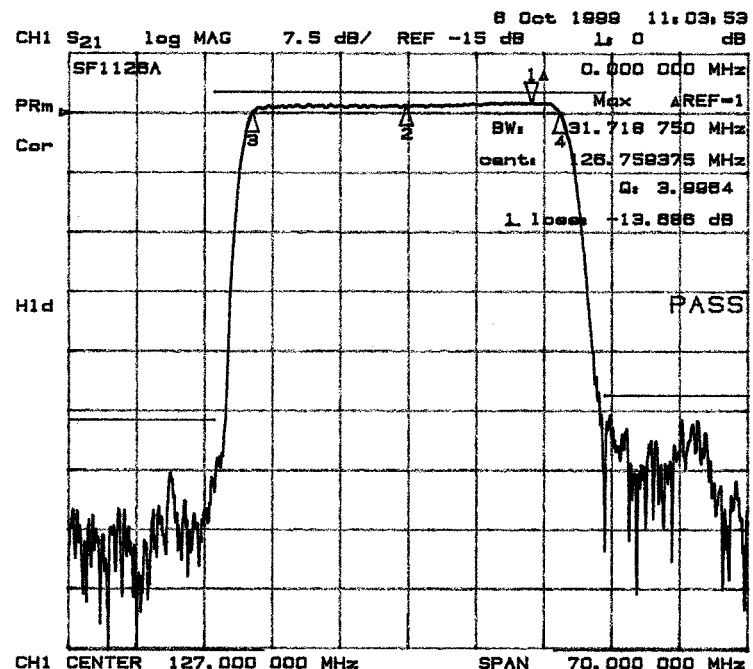
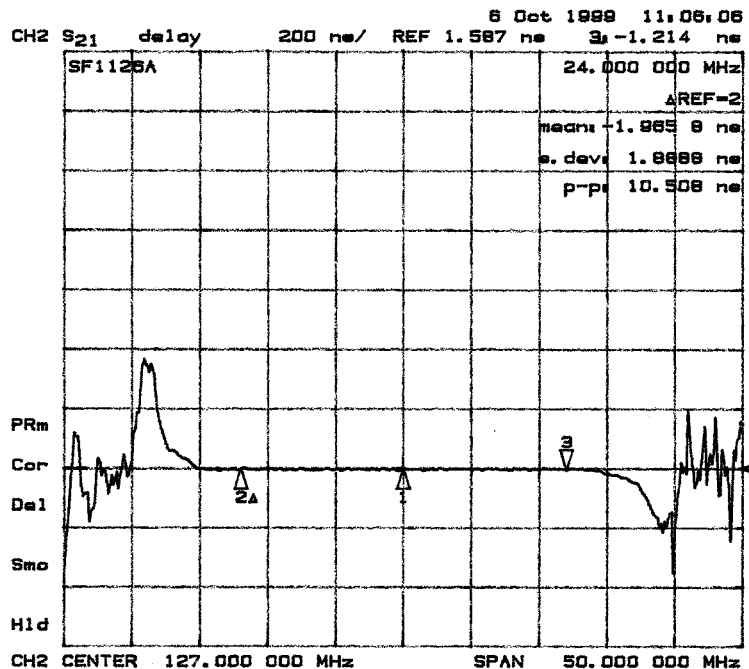
REV A  
SHEET 1/3

NOTES:

1. SOLDER MOUNT COMPONENTS AND CONNECTORS TO PCB1
2. SOLDER SHLD1 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. LABEL AS SHOWN.



SF1126A  
 DEMO BOARD #1  
 10-6-99  
 Lot #13



C<sub>1</sub>, C<sub>4</sub> = 9.0 pF.  
 C<sub>2</sub> = 1.6 pF.  
 C<sub>3</sub> = 15 pF.  
 L<sub>1</sub> = 120 nH  
 L<sub>2</sub> = 100 nH

SF1126A-000