

50Ω

DC to 400 MHz

## The Big Deal

- Low Insertion Loss (0.7 dB typical)
- High rejection (60 dB typical)
- Good VSWR (1.36:1 typical)
- Miniature shielded package



CASE STYLE: HF1139

## Product Overview

SXLP-400+ is a lowpass filter fabricated using SMT technology. Covering up to 400 MHz, these units offer low insertion loss, good matching within the passband and high rejection. This model also offers flat group delay characteristics. This unit uses a miniature high Q capacitors and wire welded inductors for high reliability. In addition it has repeatable performance across production lots and consistent performance across temperature.

## Key Features

| Feature                                 | Advantages   |
|---|--|
| Wide rejection up to 6000 MHz           | This enables the filter to attenuate spurious signals and reject harmonics over a broad band of frequency. |
| Good VSWR, 1.36:1 typical over Passband | The model has very good return loss which provides good matching when used with other devices.             |
| Sharp roll off shape factor, 1.2        | Sharp shape factor helps in adjacent channel rejection and hence increased selectivity.                    |
| Small size, 0.44" x 0.74" x 0.27"       | The small surface mount package enables the SXLP-400+ to be used in compact designs.                       |

# Low Pass Filter

50Ω

DC to 400 MHz

## SXLP-400+



CASE STYLE: HF1139

PRICE: \$11.45 ea. QTY (1-9)

### Features

- Flat group delay over passband
- Good VSWR, 1.36:1 typical over passband
- High rejection, 60 dB typical
- Shielded case
- Aqueous washable

### Applications

- Test equipment
- Receivers/transmitters
- Harmonic rejection
- Military

### Electrical Specifications at 25°C

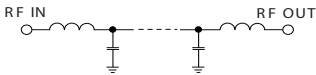
| Parameter | F#             | Frequency (MHz) | Min.       | Typ. | Max. | Unit |
|-----------|----------------|-----------------|------------|------|------|------|
| Pass Band | Insertion Loss | DC-F1           | DC - 400   | —    | 0.7  | dB   |
|           | Freq. Cut-Off  | F2              | 435        | —    | 3.5  | dB   |
|           | VSWR           | DC-F1           | DC - 400   | —    | 1.36 | :1   |
| Stop Band | Rejection Loss | F3-F4           | 500 - 2400 | 20   | 27   | dB   |
|           | VSWR           | F3-F4           | 500 - 2400 | —    | 20   | :1   |

### Maximum Ratings

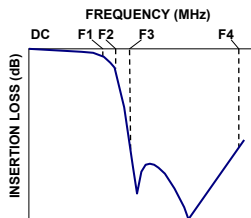
|                       |                |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C  |
| Storage Temperature   | -55°C to 100°C |
| RF Power Input        | 1W max.        |

Permanent damage may occur if any of these limits are exceeded.

### Functional Schematic



### Typical Frequency Response

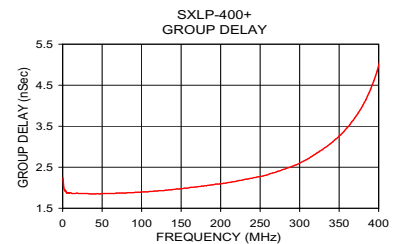
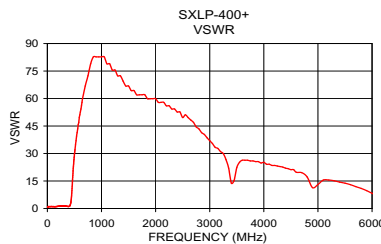
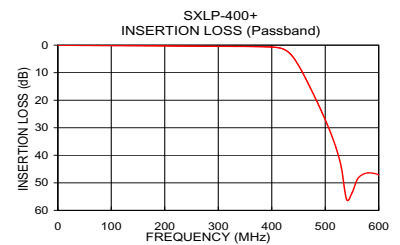
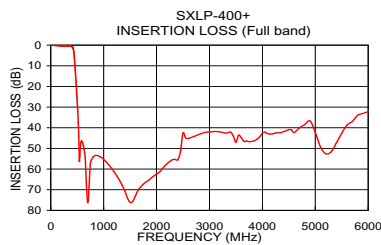


### Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) | Frequency (MHz) | Group Delay (nsec) |
|-----------------|---------------------|-----------|-----------------|--------------------|
| 0.5             | 0.03                | 1.01      | 0.5             | 2.24               |
| 26.0            | 0.08                | 1.03      | 20.0            | 1.86               |
| 100.0           | 0.16                | 1.05      | 40.0            | 1.85               |
| 220.0           | 0.32                | 1.20      | 80.0            | 1.87               |
| 360.0           | 0.50                | 1.15      | 100.0           | 1.90               |
| 400.0           | 0.69                | 1.11      | 120.0           | 1.92               |
| 422.0           | 1.47                | 1.87      | 130.0           | 1.94               |
| 435.0           | 3.27                | 3.49      | 140.0           | 1.96               |
| 448.0           | 6.72                | 7.25      | 160.0           | 2.00               |
| 464.0           | 12.43               | 15.00     | 200.0           | 2.10               |
| 484.0           | 20.36               | 24.14     | 220.0           | 2.16               |
| 500.0           | 27.18               | 29.46     | 240.0           | 2.23               |
| 550.0           | 53.70               | 41.37     | 280.0           | 2.45               |
| 700.0           | 81.04               | 66.82     | 290.0           | 2.52               |
| 1000.0          | 55.96               | 82.73     | 300.0           | 2.60               |
| 1500.0          | 75.12               | 66.82     | 320.0           | 2.82               |
| 1750.0          | 67.54               | 62.05     | 340.0           | 3.09               |
| 2000.0          | 62.91               | 59.91     | 360.0           | 3.46               |
| 2200.0          | 57.66               | 56.04     | 380.0           | 4.01               |
| 2400.0          | 55.66               | 52.65     | 400.0           | 4.98               |

+ RoHS compliant in accordance  
with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify RoHS Compliance.  
See our web site for RoHS Compliance methodologies and qualifications.



**Mini-Circuits®**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED  
IFIRF MICROWAVE COMPONENTS

For detailed performance specs  
& shopping online see web site

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine [www.minicircuits.com](http://www.minicircuits.com) Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

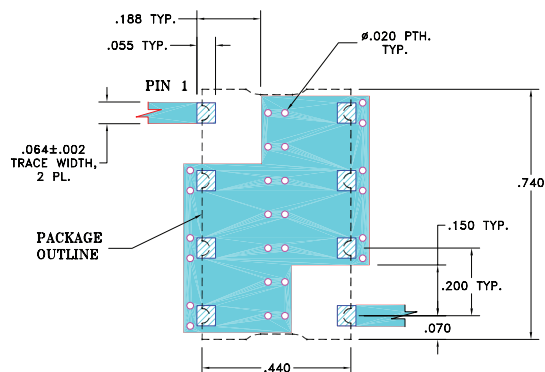
Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp).

REV. OR  
M130742  
SXLP-400+  
EDR-9972UF1  
RAV/URJ/NY  
110314  
Page 2 of 3

## Pad Connections

|        |             |
|--------|-------------|
| INPUT  | 1           |
| OUTPUT | 8           |
| GROUND | 2,3,4,5,6,7 |

## Demo Board MCL P/N: TB-368 Suggested PCB Layout (PL-230)

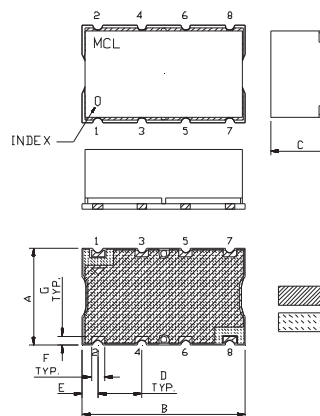


### NOTE:

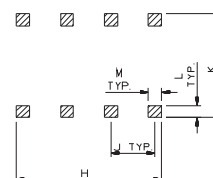
- TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS: .025"±.002". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
- BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

## Outline Drawing



## PCB Land Pattern



## Outline Dimensions (inches/mm)

| A     | B     | C     | D    | E    | F    | G     |
|-------|-------|-------|------|------|------|-------|
| .44   | .74   | .27   | .200 | .07  | .060 | .040  |
| 11.18 | 18.80 | 6.86  | 5.08 | 1.78 | 1.52 | 1.02  |
| H     | J     | K     | L    | M    |      | wt    |
| .660  | .200  | .470  | .055 | .060 |      | grams |
| 16.76 | 5.08  | 11.94 | 1.40 | 1.52 |      | 3.0   |