

Surface Mount Low Pass Filter

SCLF-420+ SCLF-420

50Ω DC to 420 MHz

Maximum Ratings

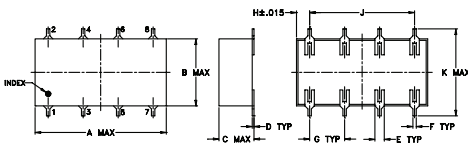
| | |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Power Input | 0.5W max. |

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

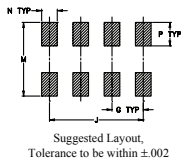
Pin Connections

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

Outline Drawing



PCB Land Pattern

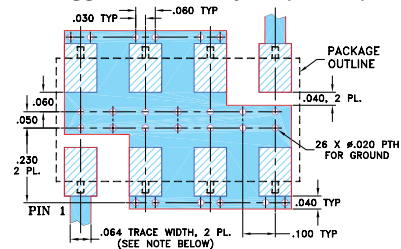


Outline Dimensions (inch)

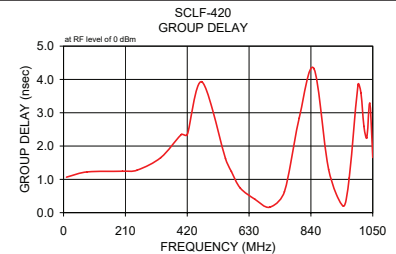
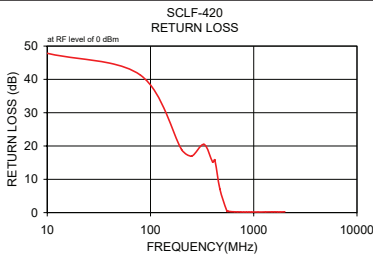
| A | B | C | D | E | F | G |
|-------|------|------|------|------|------|------|
| 0.75 | 0.38 | 0.28 | 0.01 | 0.05 | 0.02 | 0.2 |
| 19.05 | 9.65 | 7.11 | 0.25 | 1.27 | 0.51 | 5.08 |

| H | J | K | M | N | P | wt |
|-------|-------|-------|-------|------|------|-------|
| 0.075 | 0.6 | 0.45 | 0.47 | 0.1 | 0.15 | grams |
| 1.91 | 15.24 | 11.43 | 11.94 | 2.54 | 3.81 | 1.60 |

Demo Board MCL P/N: TB-187+ Suggested PCB Layout (PL-049)



- NOTES:**
- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .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



Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuit's 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-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp

Features

- wide selection of cut-off frequencies
- excellent rejection
- custom models available

Applications

- defense communications
- receivers/transmitters
- harmonic rejection of VCOs



Generic photo used for illustration purposes only
CASE STYLE: YY161

+RoHS Compliant

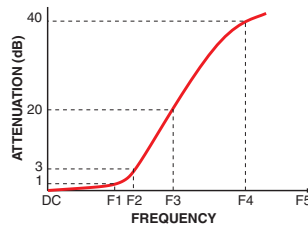
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Electrical Specifications

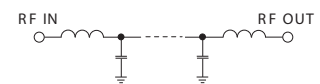
| Parameter | F# | Frequency (MHz) | Min. | Typ. | Max. | Unit | |
|-----------|----------------|-----------------|-----------|------|------|------|----|
| Pass Band | Insertion Loss | DC-F1 | DC-420 | — | — | 1.0 | dB |
| | Freq. Cut-Off | F2 | 470 | — | 3.0 | — | dB |
| | VSWR | DC-F1 | DC-420 | — | 1.7 | — | :1 |
| Stop Band | Rejection Loss | F3-F4 | 750-920 | 20 | — | — | dB |
| | | F4-F5 | 920-2000* | 40 | — | — | dB |
| | VSWR | F3-F5 | 750-2000 | — | 18 | — | :1 |

* Loss > 35 dB

Typical Frequency Response



Electrical Schematic



Typical Performance Data

| Frequency (MHz) | Insertion Loss (dB) | | Return Loss (dB) | Frequency (MHz) | Group Delay (nsec) |
|-----------------|---------------------|----------|------------------|-----------------|--------------------|
| | \bar{x} | σ | | | |
| 10.00 | 0.04 | 0.00 | 47.83 | 10.00 | 1.07 |
| 80.00 | 0.08 | 0.00 | 41.29 | 80.00 | 1.22 |
| 200.00 | 0.21 | 0.01 | 18.95 | 200.00 | 1.24 |
| 250.00 | 0.27 | 0.02 | 16.94 | 250.00 | 1.28 |
| 330.00 | 0.29 | 0.01 | 20.48 | 330.00 | 1.65 |
| 400.00 | 0.50 | 0.06 | 15.18 | 400.00 | 2.35 |
| 420.00 | 0.53 | 0.06 | 15.81 | 420.00 | 2.35 |
| 470.00 | 2.49 | 1.23 | 7.05 | 470.00 | 3.93 |
| 550.00 | 17.69 | 1.79 | 0.49 | 550.00 | 1.62 |
| 570.00 | 21.36 | 1.72 | 0.38 | 570.00 | 1.23 |
| 600.00 | 26.69 | 1.66 | 0.31 | 600.00 | 0.74 |
| 650.00 | 34.68 | 1.72 | 0.24 | 650.00 | 0.40 |
| 700.00 | 43.00 | 2.04 | 0.22 | 700.00 | 0.16 |
| 750.00 | 51.76 | 2.98 | 0.20 | 750.00 | 0.63 |
| 800.00 | 62.84 | 3.27 | 0.18 | 800.00 | 2.83 |
| 850.00 | 64.45 | 2.45 | 0.18 | 850.00 | 4.33 |
| 900.00 | 63.75 | 3.07 | 0.19 | 900.00 | 1.30 |
| 950.00 | 62.98 | 1.70 | 0.18 | 950.00 | 0.20 |
| 1100.00 | 68.72 | 2.09 | 0.18 | 970.00 | 1.04 |
| 1300.00 | 75.55 | 4.58 | 0.21 | 1000.00 | 3.84 |
| 1500.00 | 58.79 | 0.80 | 0.22 | 1010.00 | 3.60 |
| 1600.00 | 57.39 | 0.75 | 0.22 | 1020.00 | 2.59 |
| 1700.00 | 55.84 | 0.38 | 0.21 | 1030.00 | 2.25 |
| 1800.00 | 53.61 | 0.44 | 0.21 | 1040.00 | 3.29 |
| 2000.00 | 52.95 | 0.61 | 0.24 | 1050.00 | 1.66 |