

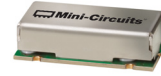
Surface Mount Low Pass Filter

LPF-B50+

50Ω DC to 50 MHz

The Big Deal

- Good passband Insertion loss, 0.8 dB typical
- High rejection, 50 dB from 70-2000 MHz
- Fast roll-off
- Miniature shielded package



CASE STYLE: HZ1198

Product Overview

The LPF-B50+ is a lowpass filter in a shielded package (size of 0.472" x 0.826" x .22") fabricated using SMT technology. Covering DC-50 MHz band width, these units offer good matching within the passband and high rejection. 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 |
|---|---|
| Low frequency and good passband Insertion loss, 0.8 dB typical | Low insertion loss will be used in designs optimized for high performance applications. |
| Fast roll-off | Fast roll-off, this will attenuate frequencies closer to the passband with good rejection value of 72 dB. |
| Good ultimate rejection | This enables the filters to attenuate spurious signals and reject harmonics for broadband frequency. |

Notes

- A. 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.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document 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



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CASE STYLE: HZ1198

Features

- High rejection, 36 dB typical
- Sharp insertion loss roll-off
- Shielded case
- Aqueous washable

Applications

- Defence communications
- Transmitters / receivers
- Harmonic rejection

Electrical Specifications at 25°C

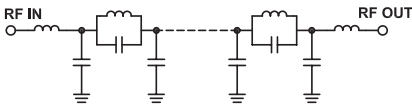
| Parameter | F# | Frequency (MHz) | Min. | Typ. | Max. | Unit | |
|-----------|----------------|-----------------|---------|------|------|------|----|
| Pass Band | Insertion Loss | DC-F1 | DC-50 | — | 0.8 | 2 | dB |
| | Freq. Cut-Off | F2 | 55 | — | 3.5 | — | dB |
| | VSWR | DC-F1 | DC-50 | — | 1.2 | 1.5 | :1 |
| Stop Band | Rejection Loss | F3-F4 | 65-3300 | 20 | 36 | — | dB |
| | VSWR | F3-F4 | 65-3300 | — | 18 | — | :1 |

Maximum Ratings

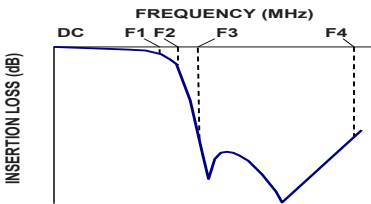
| | |
|-----------------------|-----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to +100°C |
| RF Power Input | 1 W max. |

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

Functional Schematic



Typical Frequency Response

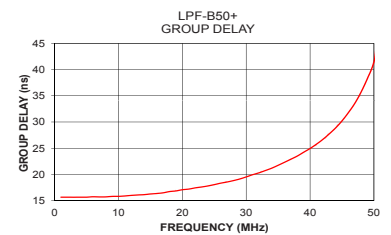
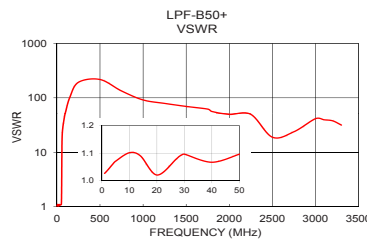
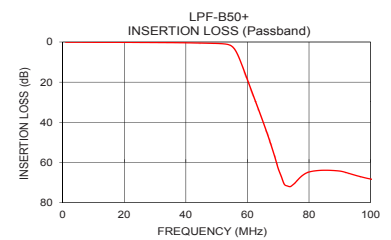
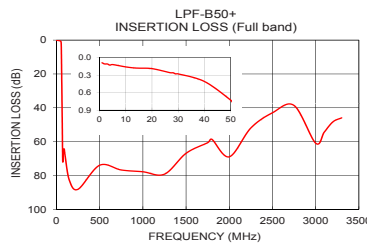


Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) | Frequency (MHz) | Group Delay (nsec) |
|-----------------|---------------------|-----------|-----------------|--------------------|
| 1.0 | 0.09 | 1.03 | 1.00 | 15.67 |
| 14.0 | 0.18 | 1.09 | 5.00 | 15.67 |
| 30.0 | 0.28 | 1.10 | 10.00 | 15.83 |
| 40.0 | 0.41 | 1.07 | 13.00 | 16.09 |
| 50.0 | 0.73 | 1.10 | 15.00 | 16.28 |
| 54.0 | 1.40 | 1.50 | 18.00 | 16.74 |
| 55.0 | 2.21 | 2.14 | 20.00 | 17.09 |
| 56.0 | 3.95 | 3.57 | 23.00 | 17.61 |
| 57.0 | 6.86 | 6.30 | 25.00 | 18.06 |
| 59.0 | 14.69 | 14.03 | 28.00 | 18.83 |
| 62.0 | 27.08 | 21.20 | 30.00 | 19.53 |
| 65.0 | 39.46 | 24.83 | 33.00 | 20.75 |
| 71.0 | 67.01 | 30.49 | 35.00 | 21.75 |
| 75.0 | 70.91 | 33.42 | 38.00 | 23.51 |
| 100.0 | 68.31 | 54.29 | 40.00 | 24.95 |
| 500.0 | 73.95 | 217.15 | 43.00 | 27.73 |
| 1500.0 | 66.89 | 69.49 | 45.00 | 30.21 |
| 2000.0 | 68.96 | 49.64 | 47.00 | 33.54 |
| 3000.0 | 60.90 | 41.37 | 48.00 | 35.73 |
| 3300.0 | 45.95 | 31.60 | 50.00 | 41.43 |

+RoHS Compliant

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



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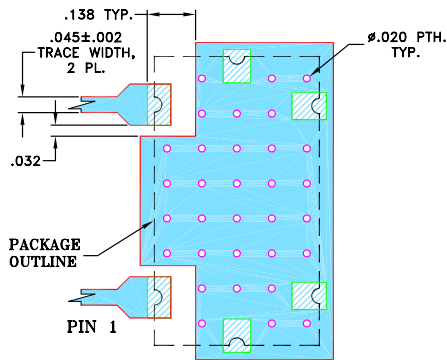
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161230
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Pad Connections

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

Demo Board MCL P/N: TB-400+ Suggested PCB Layout (PL-247)

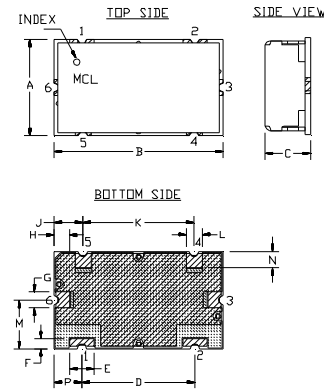


NOTES:

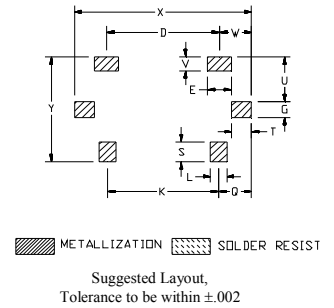
- TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS .025"±.002". COPPER: 1/2 OZ. EACH SIDE.
FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
- BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

Outline Drawing



PCB Land Pattern



Outline Dimensions (Inch)

| A | B | C | D | E | F | G | H | J | K | L | M |
|-------|-------|------|-------|------|------|------|------|-------|-------|-------|------|
| .472 | .826 | .220 | .561 | .118 | .047 | .078 | .076 | .142 | .543 | .078 | .236 |
| 11.99 | 20.98 | 5.59 | 14.00 | 3.00 | 1.19 | 1.98 | 1.93 | 3.61 | 13.79 | 1.98 | 5.99 |
| N | P | Q | S | T | U | V | W | X | Y | wt | |
| .079 | .138 | .162 | .098 | .096 | .217 | .067 | .157 | .866 | .512 | grams | |
| 2.01 | 3.51 | 4.11 | 2.49 | 2.44 | 5.51 | 1.70 | 3.99 | 22.00 | 13.00 | 6.0 | |

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[CK07F0](#) [DS-329-PIN](#) [DS-313-PIN](#) [TP-104-PIN](#) [TP-101-PIN](#) [HH-128-PIN](#) [8594810000](#) [T-1000-N](#) [JP506S](#) [XC0900P-10S](#) [XC0900B-30S](#)

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