

Surface Mount Bandpass Filter

BPF-F1250+

50Ω 1050 to 1450 MHz



Generic photo used for illustration purposes only
CASE STYLE: HP1156

The Big Deal

- Broad bandwidth
- Low passband IL and VSWR
- Fast roll-off skirts
- Shielded package

Product Overview

BPF-F1250+ is a 50Ω bandpass filter in a shielded package fabricated using SMT technology. This filter offers low insertion loss in the passband for use in L-band application.

Key Features

| Feature | Advantages |
|----------------------|--|
| Low insertion loss | This filter incorporates high Q components that enables low loss in the passband. |
| Low VSWR | This filter offers good passband return loss that enables perfect matching in the passband. |
| Fast roll-off skirts | This filter designed using transmission zeros that enables fast roll-off skirts near the passband edges. |
| Shielded package | Reduced interference from the surrounding components. |

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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Features

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- Low passband IL & VSWR
- Fast roll-off skirts
- Shielded package

Applications

- Broad band
- L-band
- Test and Measurements

Electrical Specifications at 25°C

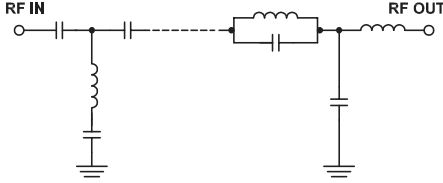
| Parameter | F# | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|------------------|------------------|-----------------|-----------|------|------|------|
| Pass Band | Center Frequency | — | — | 1250 | — | MHz |
| | Insertion Loss | F1-F2 | 1050-1450 | 0.8 | 2.0 | dB |
| | VSWR | F1-F2 | 1050-1450 | 1.35 | 1.65 | :1 |
| Stop Band, Lower | Insertion Loss | DC-F3 | DC-960 | 20 | — | dB |
| | VSWR | DC-F3 | DC-960 | 10 | — | :1 |
| Stop Band, Upper | Insertion Loss | F4-F5 | 1640-2500 | 20 | 30 | dB |
| | VSWR | F4-F5 | 1640-2500 | 10 | — | :1 |

Maximum Ratings

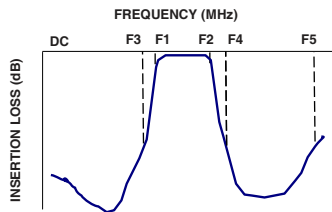
| | |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| RF Power Input | 1.5 W |

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

Functional Schematic



Typical Frequency Response

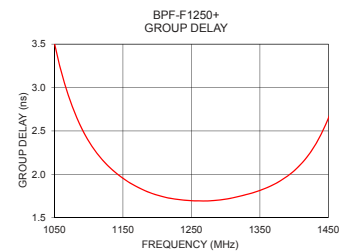
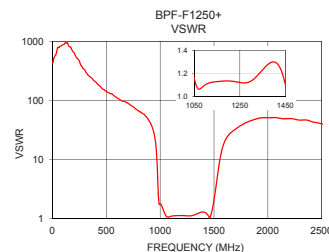
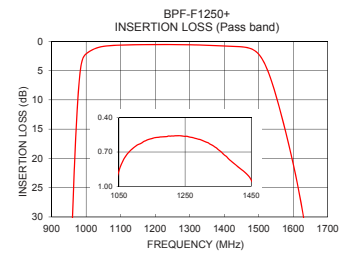
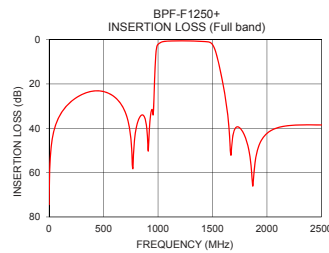


Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) | Frequency (MHz) | Group Delay (nsec) |
|-----------------|---------------------|-----------|-----------------|--------------------|
| 1 | 74.41 | 438.05 | 1050 | 3.51 |
| 50 | 40.11 | 795.34 | 1070 | 2.92 |
| 150 | 30.53 | 847.74 | 1090 | 2.53 |
| 430 | 23.10 | 181.77 | 1110 | 2.26 |
| 760 | 51.07 | 75.57 | 1130 | 2.08 |
| 840 | 34.43 | 59.77 | 1150 | 1.95 |
| 960 | 30.51 | 17.75 | 1170 | 1.86 |
| 965 | 22.78 | 13.99 | 1190 | 1.79 |
| 975 | 10.77 | 6.13 | 1210 | 1.74 |
| 990 | 3.00 | 1.77 | 1230 | 1.71 |
| 1050 | 0.86 | 1.15 | 1250 | 1.70 |
| 1250 | 0.56 | 1.12 | 1270 | 1.69 |
| 1450 | 0.94 | 1.10 | 1300 | 1.71 |
| 1510 | 3.04 | 2.72 | 1330 | 1.77 |
| 1550 | 9.29 | 8.90 | 1350 | 1.82 |
| 1600 | 21.01 | 20.45 | 1380 | 1.93 |
| 1630 | 30.15 | 25.31 | 1400 | 2.04 |
| 1640 | 34.10 | 26.67 | 1410 | 2.12 |
| 2000 | 42.29 | 51.17 | 1430 | 2.33 |
| 2500 | 38.50 | 40.27 | 1450 | 2.65 |

+RoHS Compliant

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



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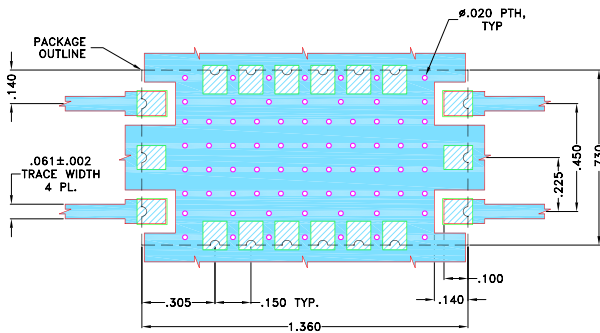
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Pad Connections

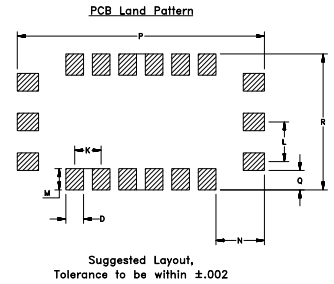
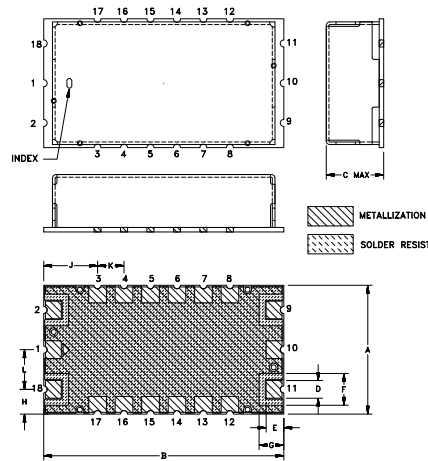
| | |
|---------------|------------------------------------|
| INPUT | 18 |
| OUTPUT | 9 |
| GROUND | 1,3,4,5,6,7,8,10,12,13,14,15,16,17 |
| NO CONNECTION | 2,11 |

Demo Board MCL P/N: TB-695+
Suggested PCB Layout (PL-418)



- NOTES:**
- TRACE WIDTH IS SHOWN FOR OAK-602, WITH DIELECTRIC THICKNESS .022" ± .0015". 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



Outline Dimensions (inch / mm)

| A | B | C | D | E | F | G | H | J |
|-------|-------|------|------|-------|------|-------|-------|------|
| .730 | 1.360 | .350 | .100 | .100 | .180 | .140 | .140 | .305 |
| 18.54 | 34.54 | 8.89 | 2.54 | 2.54 | 4.57 | 3.56 | 3.56 | 7.75 |
| K | L | M | N | P | Q | R | Wt. | |
| .150 | .225 | .120 | .275 | 1.400 | .110 | .770 | grams | |
| 3.81 | 5.72 | 3.05 | 6.99 | 35.56 | 2.79 | 19.56 | 6.0 | |

Note: Please refer to case style drawing for details

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