

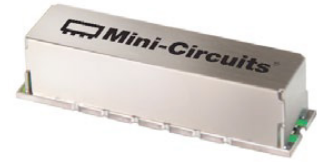
Surface Mount Bandpass Filter

BPF-A120+

50Ω 100 to 140 MHz

The Big Deal

- Broader bandwidth
- High Rejection
- Miniature shielded package



Generic photo used for illustration purposes only

CASE STYLE: HQ1157

Product Overview

BPF-A120+ is a 50Ω bandpass filter in a shielded package fabricated using SMT technology. This bandpass filter covers from 100 to 140 MHz. This filter build with high Q capacitors and wire welded inductors for high reliability. This filter offers sharp rejection and low insertion loss for use in Test and measurement system applications.

Key Features

| Feature | Advantages |
|--------------------|--|
| Low insertion loss | Can be used in Transmitters/Receivers application |
| Good rejection | This enables the filter attenuate spurious signals and reject harmonics for broad frequency band |
| Shielded package | The small surface mount package enables the BPF-A120+ to used in compact design |

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

- Broader bandwidth
- High rejection
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Applications

- Test and measurement
- Harmonic rejection
- Transmitters / Receivers

Electrical Specifications at 25°C

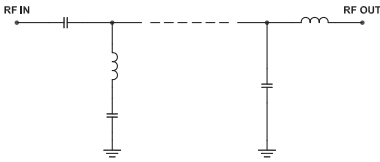
| Parameter | F# | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|------------------|------------------|-----------------|----------|------|------|------|
| Pass Band | Center Frequency | — | — | 120 | — | MHz |
| | Insertion Loss | F1-F2 | 100-140 | 1.7 | 2.5 | dB |
| | VSWR | F1-F2 | 100-140 | 1.3 | 1.92 | :1 |
| Stop Band, Lower | Insertion Loss | DC-F3 | — | 20 | 28.1 | dB |
| | VSWR | DC-F3 | — | 20 | — | :1 |
| Stop Band, Upper | Insertion Loss | F4-F5 | 174-3000 | 20 | 31.7 | dB |
| | VSWR | F4-F5 | 174-3000 | — | 20 | :1 |

Maximum Ratings

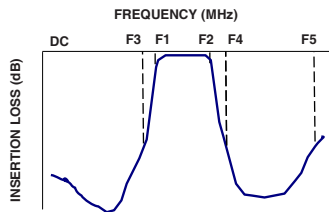
| | |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| RF Power Input | 0.5 W |

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

Functional Schematic



Typical Frequency Response

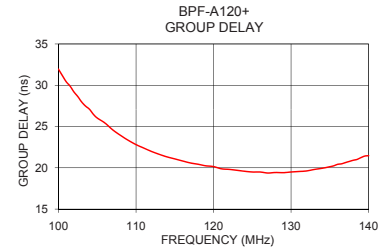
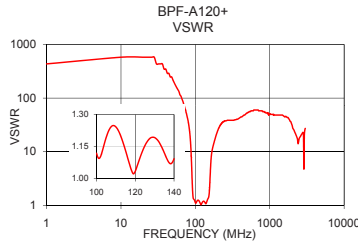
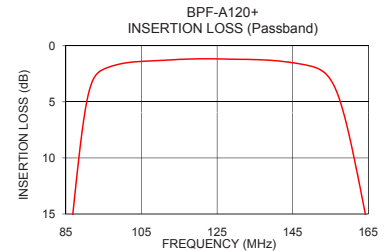
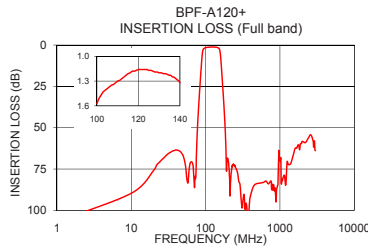


Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) | Frequency (MHz) | Group Delay (nsec) |
|-----------------|---------------------|-----------|-----------------|--------------------|
| 1.0 | 106.85 | 434.30 | 100.0 | 31.95 |
| 50.0 | 67.11 | 217.15 | 102.0 | 29.18 |
| 82.0 | 31.80 | 29.96 | 104.0 | 27.09 |
| 82.5 | 29.94 | 28.03 | 106.0 | 25.42 |
| 85.5 | 19.39 | 17.22 | 108.0 | 23.93 |
| 92.0 | 3.14 | 1.75 | 110.0 | 22.81 |
| 100.0 | 1.57 | 1.12 | 112.0 | 21.98 |
| 120.0 | 1.16 | 1.04 | 114.0 | 21.32 |
| 140.0 | 1.32 | 1.09 | 116.0 | 20.83 |
| 155.0 | 3.02 | 2.02 | 118.0 | 20.43 |
| 167.0 | 19.91 | 10.13 | 120.0 | 20.15 |
| 173.0 | 30.40 | 12.71 | 122.0 | 19.81 |
| 174.0 | 32.17 | 13.09 | 124.0 | 19.58 |
| 250.0 | 73.64 | 37.77 | 126.0 | 19.49 |
| 650.0 | 82.27 | 59.91 | 128.0 | 19.43 |
| 1000.0 | 70.10 | 51.10 | 130.0 | 19.49 |
| 1600.0 | 62.49 | 44.55 | 134.0 | 19.94 |
| 2000.0 | 58.26 | 31.03 | 136.0 | 20.42 |
| 2600.0 | 54.27 | 19.54 | 138.0 | 20.91 |
| 3000.0 | 63.84 | 27.16 | 140.0 | 21.47 |

+RoHS Compliant

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



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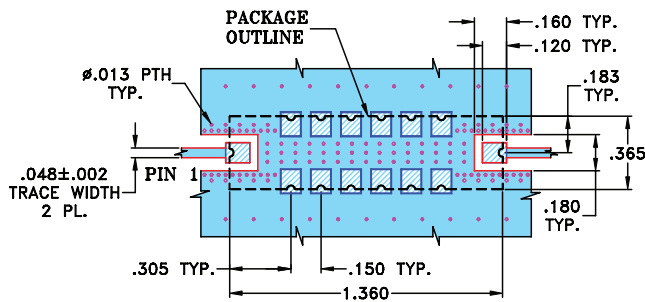
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Pad Connections

| | |
|--------|---------|
| INPUT | 1 |
| OUTPUT | 8 |
| GROUND | 2-7,9-4 |

Demo Board MCL P/N: TB-363+
Suggested PCB Layout (PL-227)

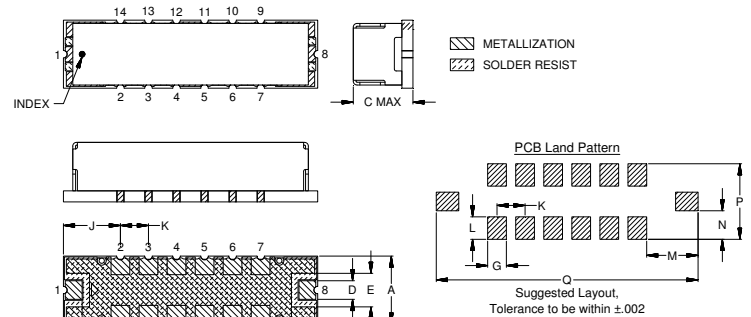


NOTE:

- 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 SOLDERMASK

Outline Drawing



Outline Dimensions (inch / mm)

| A | B | C | D | E | F | G | H |
|------|-------|------|------|------|-------|-------|-------|
| .365 | 1.360 | .35 | .100 | .180 | .140 | .100 | .100 |
| 9.27 | 34.54 | 8.89 | 2.54 | 4.57 | 3.56 | 2.54 | 2.54 |
| J | K | L | M | N | P | Q | Wt. |
| .305 | .150 | .120 | .275 | .152 | .405 | 1.400 | grams |
| 7.75 | 3.81 | 3.05 | 6.99 | 3.86 | 10.29 | 35.56 | 4.0 |

Note: Please refer to case style drawing for details

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