

Surface Mount Bandpass Filter

SXBP-70W+

50Ω 50 to 90 MHz

The Big Deal

- Very low insertion loss, 0.5dB typical
- Good VSWR, 1.3:1 typical
- Flat group delay response, 2 ns typical
- Miniature shielded package



CASE STYLE: HF1139

Product Overview

SXBP-70W+ is a 50Ω bandpass filter in a shielded package fabricated using SMT technology. This bandpass filter covers from 50 to 90 MHz. This filter build with high Q capacitors and wire welded inductors for high reliability. This filter has sharper cut-off and well suited for IF signal processing applications.

Key Features

| Feature | Advantages |
|---|---|
| Very low insertion loss, 0.5 dB typical | Can be used in telecommunication and broadband wireless 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 SXBP-70W+ to be 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

- IF Frequency
- Very low insertion loss, 0.5 dB typical
- Flat group delay response, 2 ns typical
- Miniature shielded package

Applications

- Satellite base station
- IF signal processing
- Military hi-rel systems
- Harmonic rejection

Electrical Specifications at 25°C

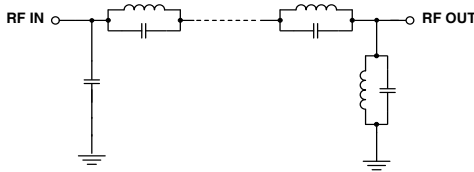
| Parameter | F# | Frequency (MHz) | Min. | Typ. | Max. | Unit | |
|------------------|------------------|-----------------|----------|------|------|------|----|
| Pass Band | Center Frequency | — | — | 70 | — | MHz | |
| | Insertion Loss | F1-F2 | 50-90 | 0.5 | 1.0 | dB | |
| | VSWR | F1-F2 | 50-90 | — | 1.3 | 1.7 | :1 |
| Stop Band, Lower | Insertion Loss | DC-F3 | DC-2 | 10 | 14 | — | dB |
| | VSWR | DC-F3 | DC-2 | — | 20 | — | :1 |
| Stop Band, Upper | Insertion Loss | F4-F5 | 137-1500 | 20 | 23 | — | dB |
| | VSWR | F4-F5 | 137-1500 | — | 20 | — | :1 |

Maximum Ratings

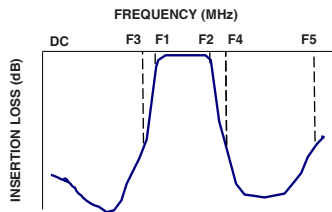
| | |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| RF Power Input | 0.5W |

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

Functional Schematic



Typical Frequency Response

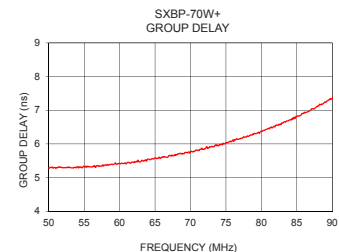
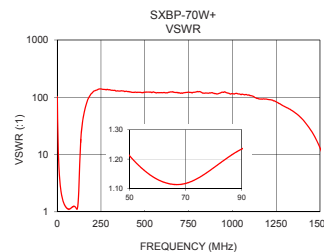
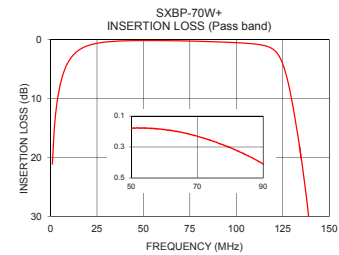
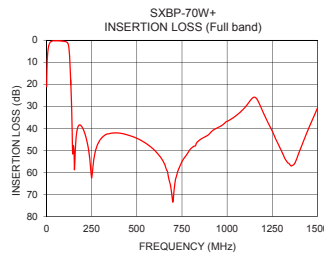


Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) | Frequency (MHz) | Group Delay (nsec) |
|-----------------|---------------------|-----------|-----------------|--------------------|
| 1 | 21.14 | 103.07 | 50 | 5.29 |
| 2 | 15.26 | 61.74 | 52 | 5.30 |
| 3 | 11.91 | 38.00 | 54 | 5.32 |
| 4 | 9.63 | 25.35 | 56 | 5.31 |
| 5 | 7.95 | 18.09 | 58 | 5.38 |
| 6 | 6.65 | 13.62 | 60 | 5.41 |
| 11 | 3.11 | 5.43 | 62 | 5.44 |
| 50 | 0.18 | 1.21 | 64 | 5.55 |
| 70 | 0.23 | 1.12 | 66 | 5.61 |
| 90 | 0.41 | 1.23 | 68 | 5.68 |
| 100 | 0.54 | 1.24 | 70 | 5.77 |
| 124 | 3.38 | 2.57 | 72 | 5.86 |
| 130 | 10.52 | 8.60 | 74 | 5.95 |
| 135 | 20.24 | 18.34 | 76 | 6.12 |
| 137 | 24.88 | 22.39 | 78 | 6.24 |
| 139 | 30.16 | 26.24 | 80 | 6.38 |
| 140 | 33.15 | 28.19 | 82 | 6.54 |
| 500 | 44.54 | 122.40 | 84 | 6.71 |
| 1250 | 41.34 | 83.38 | 86 | 6.90 |
| 1500 | 30.88 | 13.12 | 90 | 7.35 |

+RoHS Compliant

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



Notes

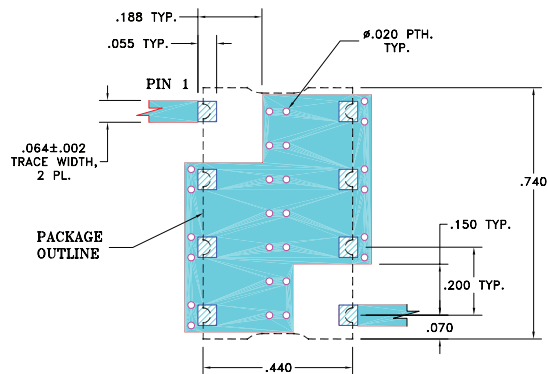
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Pad Connections

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

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

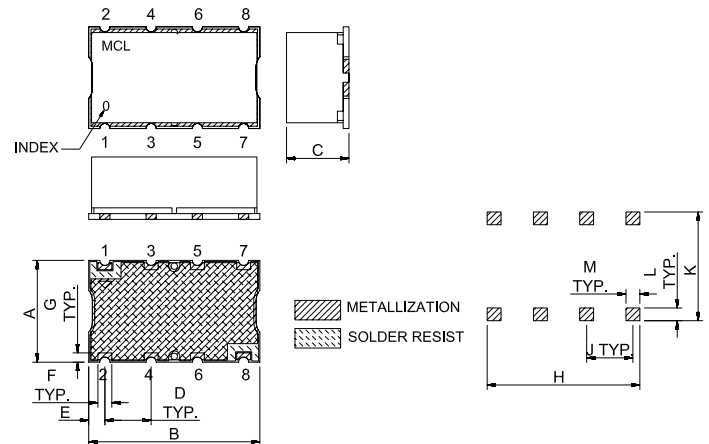


NOTE:

- 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



Outline Dimensions (inch)

| 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 | |

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