

Surface Mount Bandpass Filter

SXBP-176+

50Ω 175 to 177 MHz

- Narrow band flat group delay response
- Wide stopband rejection, 40 dB
- Good matching, (VSWR 1.3:1 typical)
- Miniature shielded package



CASE STYLE: HF1139

Product Overview

The SXBP-176+ is a cross coupled design, narrow-band bandpass filter fabricated using SMT technology. Covering 176 MHz \pm 1 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. It has repeatable performance across production lots and consistent performance across temperature.

Key Features

Narrow-band bandpass filter with flat group delay	This helps in excellent adjacent channel rejection and minimum signal distortion.
More than 40dB rejection up to 1000 MHz	This enables the filter to attenuate spurious signals and reject harmonics for broad band of frequency.
Small size, 0.44" x 0.74" x .27"	The surface mount package enables the SXBP-176+ to be used in compact designs.

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



Bandpass Filter

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CASE STYLE: HF1139

Features

- Narrow band flat group delay
- Good VSWR, 1.3:1 Typical
- High Rejection, 40 dB
- Shielded case
- Aqueous washable

Applications

- Harmonic Rejection
- Transmitters / Receivers
- Military

Electrical Specifications at 25°C

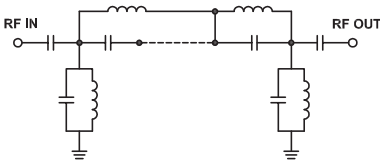
Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Center Frequency	—	—	176	—	MHz	
	Insertion Loss	F1-F2	175-177	—	3.3	4.8	dB
	VSWR	F1-F2	175-177	—	1.3	1.5	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-155	20	30	—	dB
	VSWR	DC-F3	DC-155	—	15	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	199-1000	20	31	—	dB
	VSWR	F4-F5	199-1000	—	11	—	:1

Maximum Ratings

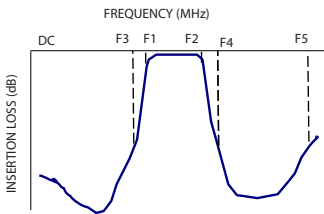
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	0.25W max.

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

Functional Schematic



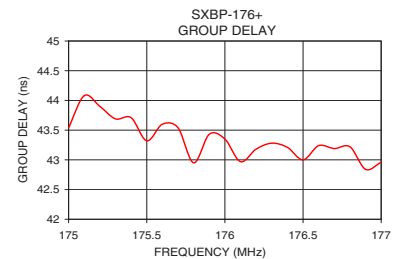
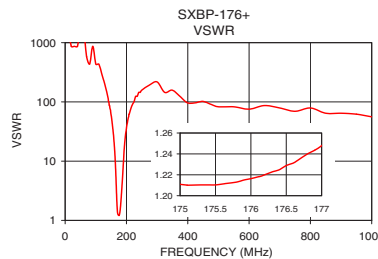
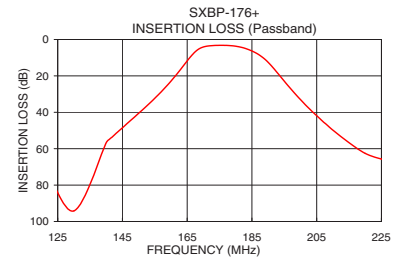
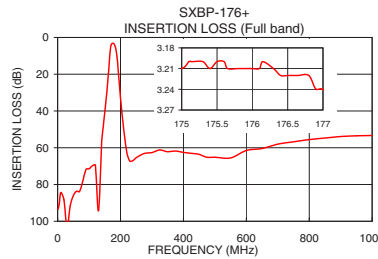
Typical Frequency Response



Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1.0	93.62	1737.18	175.00	43.54
143.0	51.62	96.51	175.10	44.08
155.0	32.29	36.97	175.20	43.90
160.0	22.86	19.98	175.30	43.69
164.0	14.07	8.86	175.40	43.71
167.0	7.57	3.49	175.60	43.60
175.0	3.21	1.21	175.70	43.54
176.0	3.21	1.22	175.80	42.95
177.0	3.24	1.25	175.90	43.43
185.0	6.30	3.52	176.00	43.35
190.0	12.52	9.53	176.10	42.97
199.0	31.10	32.79	176.20	43.18
200.0	33.03	36.20	176.30	43.28
205.0	41.84	51.10	176.40	43.21
209.0	48.28	62.05	176.50	43.00
300.0	62.65	217.15	176.60	43.24
500.0	65.17	82.73	176.70	43.19
750.0	56.76	69.49	176.80	43.22
800.0	55.56	78.97	176.90	42.84
1000.0	53.36	56.04	177.00	42.96

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



Notes

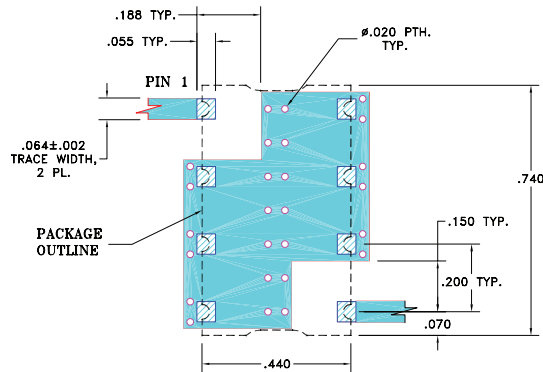
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Pad Connections

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

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

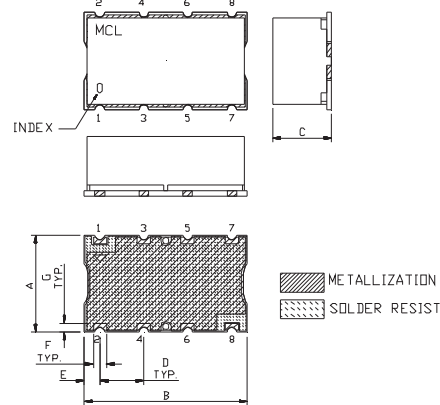


NOTE:

- 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/mm)

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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