Surface Mount

Bandpass Filter

SXBP-161R5+

50Ω 148 to 175 MHz

CASE STYLE: HF1139

The Big Deal

- Flat group delay, 15ns
- High rejection (55 dB typical)
- Miniature shielded package
- Narrow bandwidth designed for radio-SMR and police band

Product Overview

The SXBP-161R5+ is a narrow-band bandpass filter fabricated using SMT technology. Covering 161.5 MHz ± 13.5 MHz, 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. It is enclosed in HF1139 package and has consistent performance across temperature.

Key Features

Feature	Advantages
Sharp shape factor	Sharp shape factor helps in adjacent channel rejection and hence increases selectivity.
More than 40dB rejection up to 2300MHz	This enables the filter to attenuate spurious signals and reject harmonics for a broad band of frequency.
Flat group delay characteristics (15 ns typical)	The model has a group delay flatness of 15ns which helps in reducing the signal distortion.
Small size, 0.44" X 0.74" X 0.27"	The surface mount package enables the SXBP-161R5+ to be used in compact designs.

Surface Mount

Bandpass Filter

50Ω 148 to 175 MHz

SXBP-161R5+

CASE STYLE: HF1139

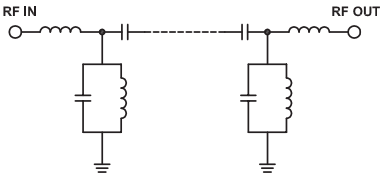
Features

- Flat group delay over passband
- High rejection (55 dB typical)
- Shielded case
- Aqueous washable

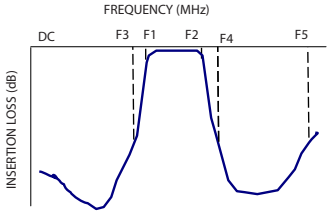
Applications

- Test equipments
- Transmitters / Receivers
- Harmonic rejection
- Radio-SMR and police band
- Military

Functional Schematic



Typical Frequency Response



+RoHS Compliant

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

Electrical Specifications at 25°C

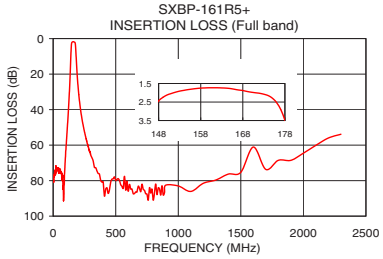
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	—	—	—	161.5	—	MHz
	Insertion Loss	F1-F2	148-175	—	2.6	3.5	dB
	VSWR	F1-F2	148-175	—	1.4	1.8	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-130	20	29	—	dB
	VSWR	DC-F3	DC-130	—	35	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	200-2300	20	27	—	dB
	VSWR	F4-F5	200-2300	—	26	—	:1

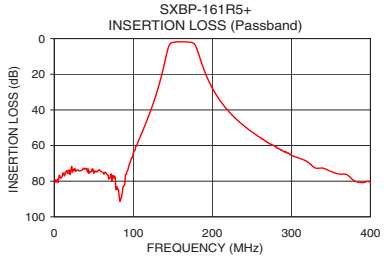
Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	0.4W max.

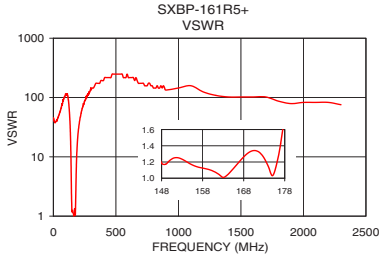
Permanent damage may occur if any of these limits are exceeded.

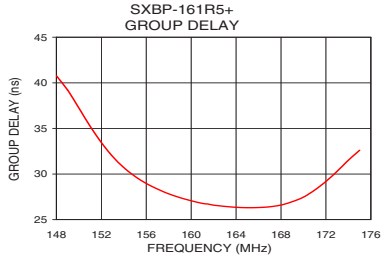
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1.0	79.11	45.72	148.00	40.77
100.0	64.25	115.81	150.00	37.24
115.0	48.39	108.58	152.00	33.45
130.0	29.78	49.64	154.00	30.71
139.0	14.67	13.92	156.00	28.97
143.0	7.07	4.50	158.00	27.83
146.0	3.35	1.72	159.00	27.41
148.0	2.44	1.19	160.00	27.07
161.5	1.73	1.06	161.00	26.78
175.0	2.29	1.03	161.50	26.71
178.0	3.48	1.79	162.00	26.59
180.0	5.28	2.96	163.00	26.45
185.0	11.82	8.39	164.00	26.35
190.0	18.09	15.13	165.00	26.31
200.0	27.76	28.03	166.00	26.33
235.0	47.08	69.49	168.00	26.60
500.0	79.92	248.17	170.00	27.47
1000.0	83.01	144.77	172.00	29.19
1500.0	75.30	102.19	174.00	31.52
2300.0	53.86	75.53	175.00	32.61









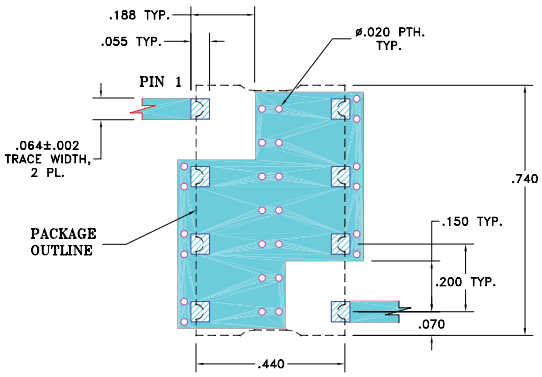
Notes

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

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)



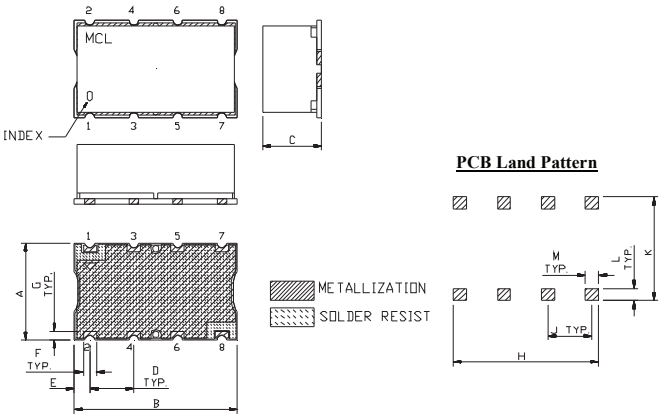
NOTE:

1. 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.
2. 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