Surface Mount

Bandpass Filter

BPF-B59+

50Ω 57 to 61 MHz

CASE STYLE: HZ1198

The Big Deal

- High rejection, 65dB typical
- Good VSWR, 1.6:1 typical
- Sharp insertion loss roll off
- SMT shielded case

Product Overview

The BPF-B59+ is a narrow-band bandpass filter in a shielded package (size of 0.472" x 0.826" x .22") fabricated using SMT technology and offers sharp shape factor. Covering 59 MHz ± 2 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. In addition it has repeatable performance across production lots and consistent performance across temperature.

Key Features

Feature	Advantages
Narrow bandwidth filter (fractional bandwidth of 7 %)	Fast roll-off; this will attenuate frequencies closer to the passband with good rejection value of > 20 dB.
Good VSWR, 1.6:1 typical in passband	The BPF-B59+ has very good return loss for a narrow bandwidth which provides good matching when used with other devices.
More than 40dB rejection up to 2200MHz	This enables the filter to attenuate spurious signals and reject harmonics for broad band of frequency.
Shielded case	Reduced interference with and from the surrounding components.

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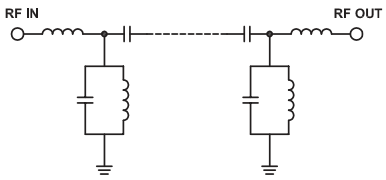
Features

- Good VSWR,1.6:1 typical in passband
- High rejection, 65 dB typical
- Sharp insertion loss roll off
- Shielded case
- Aqueous washable

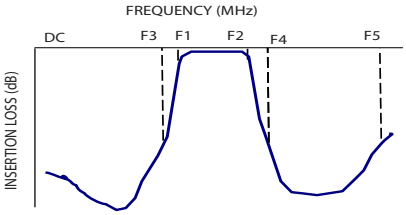
Applications

- Harmonic rejection
- Transmitters / receivers
- ILS / Localiser
- Radio communications

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

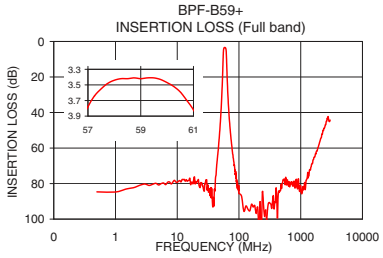
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	—	—	—	59	—	MHz
	Insertion Loss	F1-F2	57-61	—	3.9	5.5	dB
	VSWR	F1-F2	57-61	—	1.6	1.9	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-52	20	33	—	dB
	VSWR	DC-F3	DC-52	—	27	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	68-2600	20	32	—	dB
	VSWR	F4-F5	68-2600	—	17	—	:1

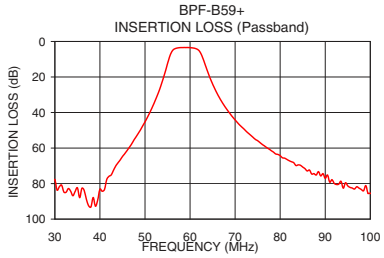
Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	0.08W max.

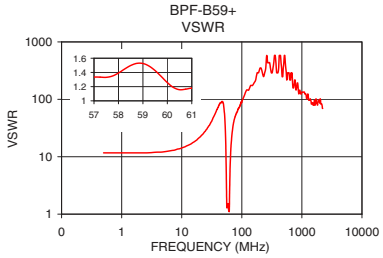
Permanent damage may occur if any of these limits are exceeded.

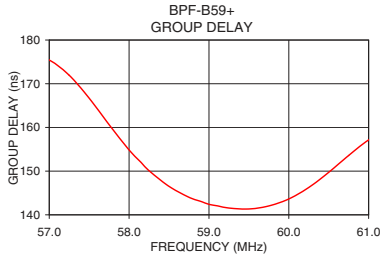
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
0.5	84.65	11.69	57.00	175.41
15.0	78.34	17.39	57.25	171.92
49.0	49.77	86.86	57.50	166.70
52.0	34.89	48.26	57.75	160.62
53.0	28.63	31.60	58.00	154.85
54.5	17.03	11.03	58.15	152.00
55.5	8.36	3.18	58.25	150.10
56.5	4.25	1.28	58.50	146.52
57.0	3.78	1.33	58.75	144.02
59.0	3.42	1.53	58.90	143.05
61.0	3.82	1.18	59.00	142.41
62.0	5.21	1.27	59.10	142.07
63.0	10.50	3.38	59.25	141.56
64.0	17.62	6.97	59.50	141.34
68.0	37.62	22.29	59.75	142.03
72.0	49.37	36.20	60.00	143.64
100.0	85.53	91.43	60.25	146.26
500.0	80.23	434.30	60.50	149.72
1000.0	81.36	133.63	60.75	153.58
2200.0	52.21	69.49	61.00	157.15







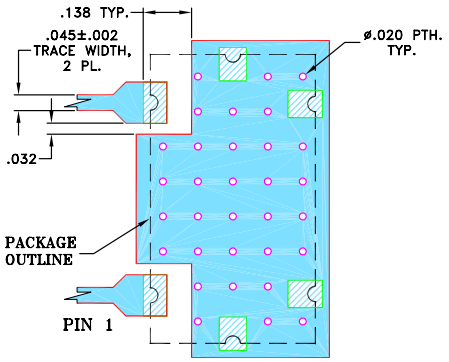


Notes
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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	2
GROUND	3,4,5,6

Demo Board MCL P/N: TB-400
Suggested PCB Layout (PL-247)

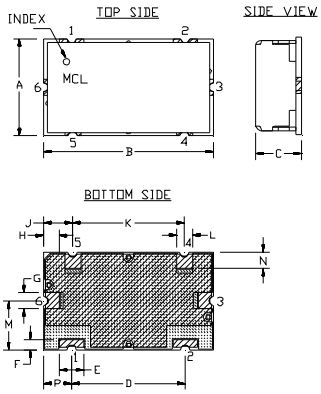


NOTES:
1. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS .025"±.002". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

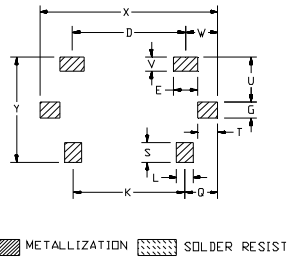
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

Outline Drawing



PCB Land Pattern



METALLIZATION SOLDER RESIST

Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K	L	M
.472	.826	.220	.551	.118	.047	.078	.076	.142	.543	.078	.236
11.99	20.98	5.59	14.00	3.00	1.19	1.98	1.93	3.61	13.79	1.98	5.99

N	P	Q	S	T	U	V	W	X	Y	
.079	.138	.162	.098	.096	.217	.067	.157	.866	.512	wt
2.01	3.51	4.11	2.49	2.44	5.51	1.70	3.99	22.00	13.00	grams 6.0