

# Surface Mount Bandpass Filter

## BPF-F184+

50Ω 154.32 to 214.32 MHz

### The Big Deal

- Broad bandwidth
- High Rejection
- Good VSWR
- Miniature shielded package



CASE STYLE: HP1156

### Product Overview

BPF-F184+ is a 50Ω bandpass filter in a shielded package fabricated using SMT technology. This bandpass filter covers from 154.32 to 214.32 MHz. This is broad filter and finds extensive application in television networks.

### Key Features

Feature	Advantages
Low insertion loss	Broad bandwidth and it can be used in television networks.
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-F184+ 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](http://www.minicircuits.com/MCLStore/terms.jsp)



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CASE STYLE: HP1156

### Features

- Broad bandwidth
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- Miniature shielded package

### Applications

- Digital television networks
- Biomedical telemetry devise
- Wireless microphone
- Test and measurement

### Electrical Specifications at 25°C

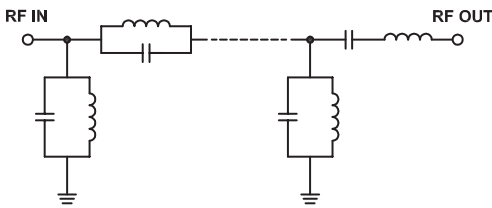
Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Center Frequency	—	—	184	—	MHz	
	Insertion Loss	F1-F2	154.32-214.32	—	1.90	3.00	dB
	VSWR	F1-F2	154.32-214.32	—	1.43	1.92	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-139	20	30	—	dB
	VSWR	DC-F3	DC-139	—	20	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	242-2800	20	27	—	dB
	VSWR	F4-F5	242-2800	—	20	—	:1

### Maximum Ratings

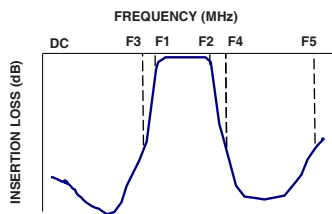
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	2 W

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

### Functional Schematic



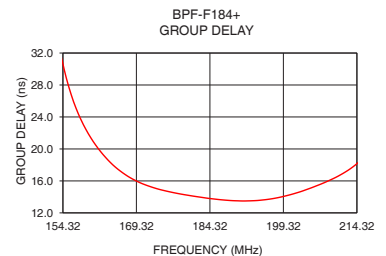
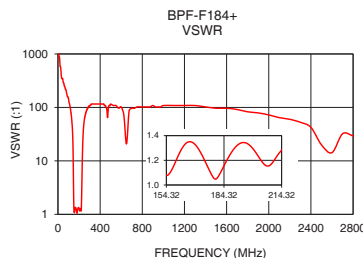
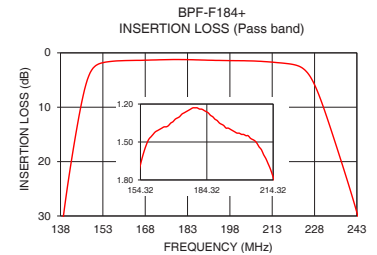
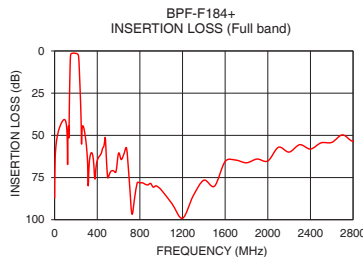
### Typical Frequency Response



### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1.00	77.68	1737.18	154.32	30.64
50.00	44.73	289.53	155.00	28.90
100.00	41.04	144.77	156.00	26.81
139.00	30.13	32.18	158.00	23.67
140.00	26.26	28.49	160.00	21.41
141.00	22.71	24.48	164.00	18.31
142.00	19.38	20.45	168.00	16.42
145.00	10.40	8.81	173.00	15.12
149.00	3.20	2.02	178.00	14.40
154.32	1.68	1.08	184.00	13.82
184.00	1.26	1.15	188.00	13.57
214.32	1.78	1.28	193.00	13.52
225.00	3.38	2.45	198.00	13.88
233.00	12.82	15.53	202.00	14.50
238.00	20.82	29.96	205.00	15.13
242.00	27.56	40.41	208.00	15.87
244.00	31.21	45.72	210.00	16.44
500.00	75.22	115.81	212.00	17.13
1800.00	66.26	82.73	214.00	17.99
2800.00	53.53	29.46	214.32	18.17

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



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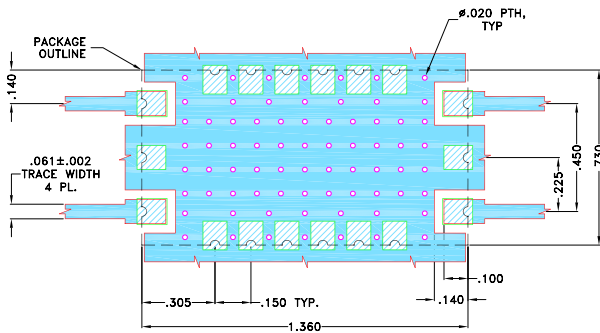
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BPF-F184+  
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## Pad Connections

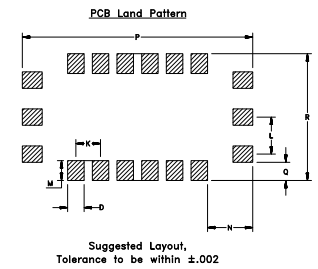
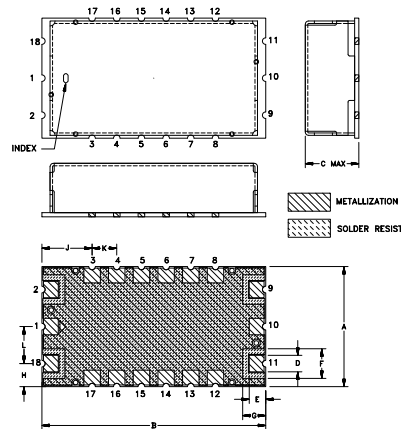
INPUT	2
OUTPUT	11
GROUND	1,3,4,5,6,7,8,10,12,13,14,15,16,17
NO CONNECTION	9,18

**Demo Board MCL P/N: TB-695+**  
**Suggested PCB Layout (PL-418)**



- NOTES:**
- TRACE WIDTH IS SHOWN FOR OAK-602, WITH DIELECTRIC THICKNESS  $.022 \pm .0015"$ . 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	J
.730	1.360	.350	.100	.100	.180	.140	.140	.305
18.54	34.54	8.89	2.54	2.54	4.57	3.56	3.56	7.75
K	L	M	N	P	Q	R	Wt.	
.150	.225	.120	.275	1.400	.110	.770	grams	
3.81	5.72	3.05	6.99	35.56	2.79	19.56	6.0	

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