

# Surface Mount Bandpass Filter

## BPF-C4R5+

50Ω      2 to 7 MHz



Generic photo used for illustration purposes only  
CASE STYLE: HU1186

### The Big Deal

- Low insertion loss
- Good VSWR
- Miniature shielded package

### Product Overview

BPF-C4R5+ is a bandpass filter fabricated using SMT technology. This filter offers good rejection and low insertion loss for use in aviation and communication systems. This unit uses a miniature high Q capacitors and wire welded inductors for high reliability.

### Key Features

Feature	Advantages
Low insertion loss	Suitable for high performance applications.
Good VSWR, 1.1:1 typical in passband	The BPF-C4R5+ has very good VSWR which provides good matching when used with other devices.
Shielded package	Reduced interference with the surrounding components.

#### 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.  
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### Features

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### Applications

- Aviation
- Communication systems

### Electrical Specifications at 25°C

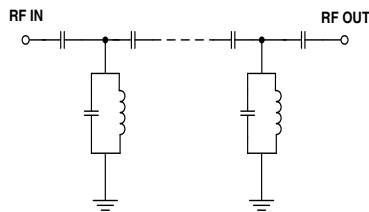
Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	—	—	4.5	—	MHz
	Insertion Loss	F1-F2	—	0.5	1.5	dB
	VSWR	F1-F2	—	1.1	1.5	:1
Stop Band, Lower	Insertion Loss	DC-F3	20	35.9	—	dB
	VSWR	DC-F3	—	20	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	20	28.9	—	dB
	VSWR	F4-F5	—	20	—	:1

### Maximum Ratings

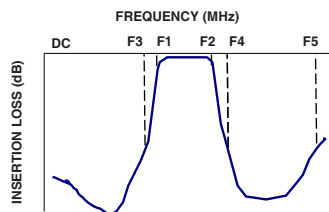
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	1 W max.

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

### Functional Schematic



### Typical Frequency Response

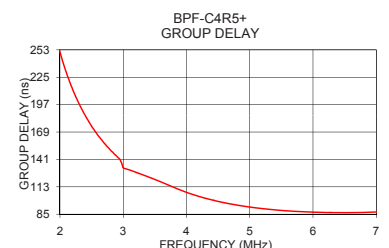
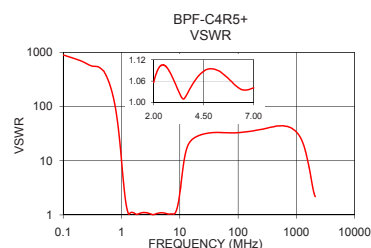
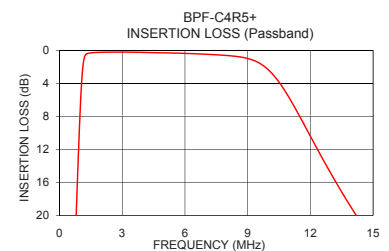
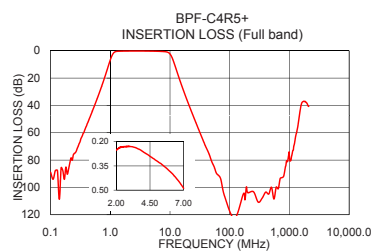


### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
0.10	88.93	898.07	2.0	250.52
0.60	35.20	293.81	2.2	212.56
0.66	30.30	215.92	2.6	165.56
0.79	20.51	92.29	2.8	150.39
1.08	3.05	4.05	3.0	132.37
1.10	2.43	3.31	3.2	127.88
2.00	0.25	1.06	3.4	123.03
4.50	0.29	1.09	3.6	117.89
7.00	0.49	1.04	3.8	112.44
9.00	1.00	1.34	4.0	107.33
9.90	2.17	2.34	4.2	103.11
10.30	3.21	3.22	4.4	99.60
14.20	20.03	20.48	4.8	94.30
17.00	29.73	25.63	5.0	92.33
17.10	30.03	25.75	5.4	89.40
500.00	99.85	43.88	5.8	87.64
950.00	78.75	35.82	6.2	86.75
1500.00	44.47	12.10	6.6	86.61
1960.00	38.39	2.77	6.8	86.83
2100.00	40.73	2.18	7.0	87.26

### +RoHS Compliant

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



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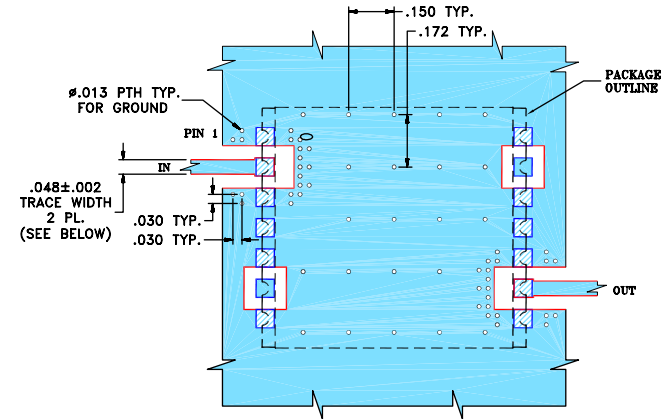
[www.minicircuits.com](http://www.minicircuits.com) P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 [sales@minicircuits.com](mailto:sales@minicircuits.com)



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Pad Connections

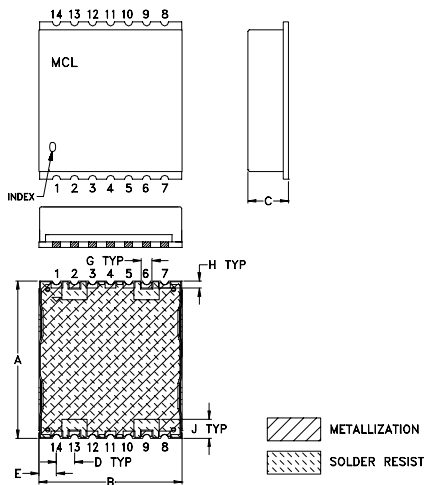
INPUT	2
OUTPUT	9
NOT CONNECTED	6 & 13
GROUND	1,3,4,5,7,8,10,11,12,14

Demo Board MCL P/N: TB-500+  
Suggested PCB Layout (PL-294)



- NOTES:
- TRACE WIDTH IS SHOWN FOR ROGERS R04350B, DIELECTRIC THICKNESS: .030" ± .002"; COPPER: 1/2 OZ ON 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

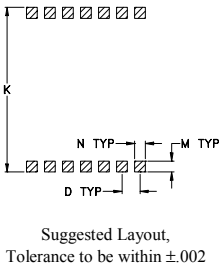


Outline Dimensions ( inch mm )

A	B	C	D	E	F	G	H
.870	.800	.25	.100	.097	--	.060	.040
22.10	20.32	6.35	2.54	2.46	--	1.52	1.02
J	K	L	M	N	P		wt
.105	.910	--	.060	.060	--		grams
2.67	23.11	--	1.52	1.52	--		2.85

Note: Please refer to case style drawing for details

PCB Land Pattern



Suggested Layout,  
Tolerance to be within ±.002

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