

# Surface Mount Bandpass Filter

## RBP-188+

50Ω 138 to 238 MHz



Generic photo used for illustration purposes only  
CASE STYLE: GP731

### The Big Deal

- Low insertion loss
- Broader bandwidth
- High Rejection
- Miniature shielded package

### Product Overview

The RBP-188+ is a broad band filter in a small shielded package (size of 0.35" x 0.35" x 0.10") fabricated using SMT technology. This filter offers outstanding close in rejection, low insertion loss for use in mobile networks and digital television.

### Key Features

Feature	Advantages
High Rejection	RBP-188+ is enables the filter to attenuate spurious signals and rejects harmonics for broad band of frequency.
Low Passband VSWR	This filter maintains typical VSWR over passband frequency range making this filter easier to integrate into receiver and transmitter RF chains with less concerns for in band frequency ripple.
Small size, 0.35" x 0.35" x 0.10"	The unique surface mount package enables the RBP-188+ to be 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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### Features

- Broader bandwidth
- Low insertion loss
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- Miniature shielded package

### Applications

- Auxiliary broadcasting
- Biomedical telemetry devices
- Private and public land mobile
- Digital television

### Electrical Specifications at 25°C

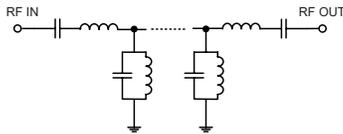
Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Center Frequency	—	—	188	—	MHz	
	Insertion Loss	F1-F2	138-238	—	1.80	3.00	dB
	VSWR	F1-F2	138-238	—	1.38	1.92	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-96	20	27	—	dB
	VSWR	DC-F3	DC-96	—	20	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	315-3600	20	25	—	dB
	VSWR	F4-F5	315-3600	—	20	—	:1

### Maximum Ratings

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

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

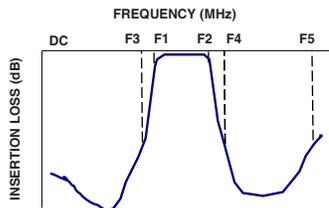
### Functional Schematic



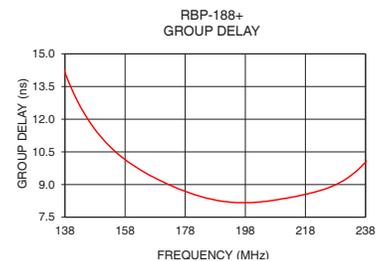
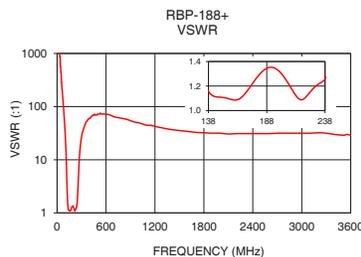
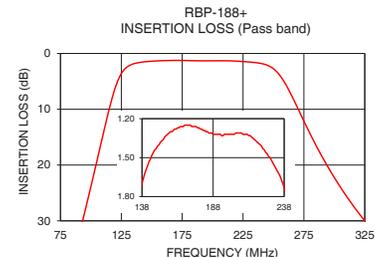
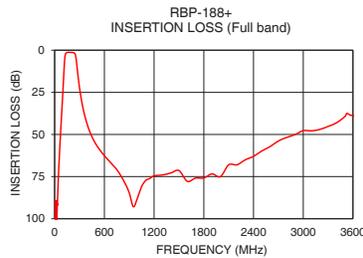
### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1	90.54	17371.78	138	14.15
70	50.37	144.77	140	13.47
92	31.06	48.26	142	12.88
96	27.49	38.61	146	11.92
104	20.16	22.00	155	10.48
112	12.69	10.62	160	9.95
120	6.15	4.01	168	9.30
126	3.28	2.04	173	8.97
138	1.70	1.16	178	8.69
188	1.32	1.34	183	8.46
238	1.73	1.26	188	8.29
252	3.14	2.20	193	8.19
263	6.73	5.27	198	8.17
278	13.48	13.60	203	8.20
296	20.81	24.48	225	8.82
315	27.14	34.07	228	8.99
325	30.00	37.77	230	9.13
500	55.97	72.39	234	9.51
2000	75.06	31.60	236	9.75
3600	38.61	28.96	238	10.03

### Typical Frequency Response



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



### Notes

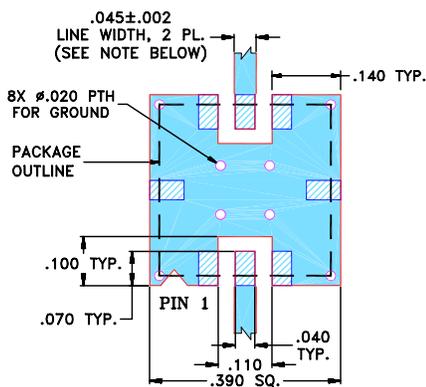
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## Pad Connections

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

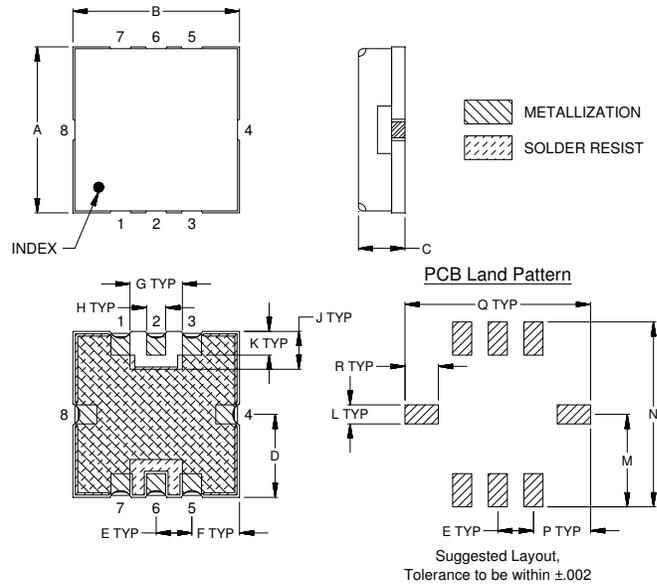
**Demo Board MCL P/N: TB-332**  
**Suggested PCB Layout (PL-176)**



- NOTES:**
- 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	H	J
.350	.350	.100	.175	.075	.100	.110	.040	.080
8.89	8.89	2.54	4.45	1.91	2.54	2.79	1.02	2.03
K	L	M	N	P	Q	R	wt	
.050	.040	.195	.390	.120	.390	.070	grams	
1.27	1.02	4.95	9.91	3.05	9.91	1.78	0.25	

Note: Please refer to case style drawing for details

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