

# Surface Mount Bandpass Filter

## RBPF-485+

50Ω 435 to 535 MHz



Generic photo used for illustration purposes only  
CASE STYLE: CK605

### The Big Deal

- Better passband insertion loss and return loss
- High rejection
- Miniature shielded package

### Product Overview

The RBPF-485+ is a 50Ω bandpass filter fabricated using SMT technology. This bandpass filter covers from 435-535 MHz. This filter is built with high Q capacitors, chip inductors and wire wound inductors for superior performance. In addition it has repeatable performance across production lots and consistent performance across temperature.

### Key Features

Feature	Advantages
Low insertion loss	Can be used in high performance applications such as radio astronomy.
Good rejection	This enables the filter to attenuate spurious signals and reject harmonics for broad frequency band.
Small size, 0.500" x 0.500" x 0.180"	The small surface mount package enables the RBPF-485+ to be used in compact designs.

#### 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

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### Applications

- Military-aircraft
- Marine communication

### Electrical Specifications at 25°C

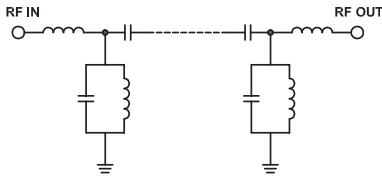
Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Center Frequency	—	—	485	—	MHz	
	Insertion Loss	F1-F2	435-535	—	1.3	2.5	dB
	VSWR	F1-F2	435-535	—	1.3	1.67	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-320	20	30	—	dB
	VSWR	DC-F3	DC-320	—	20	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	700-3700	20	30	—	dB
	VSWR	F4-F5	700-3700	—	20	—	:1

### Maximum Ratings

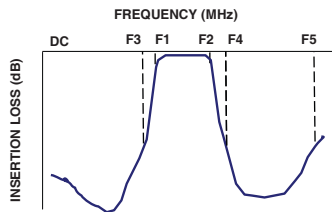
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	5W max.

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

### Functional Schematic



### Typical Frequency Response

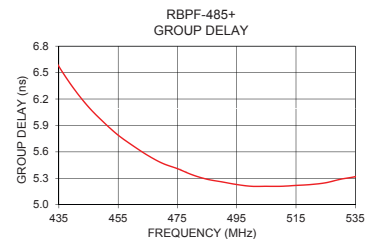
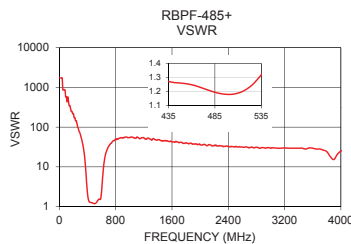
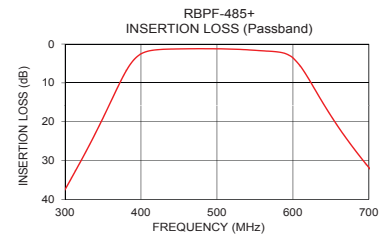
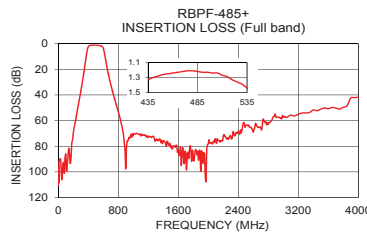


### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1	110.48	1737.18	435	6.57
240	56.89	144.77	440	6.32
320	30.41	46.96	445	6.11
355	16.98	20.70	450	5.94
375	8.87	8.35	455	5.79
390	4.19	3.44	460	5.67
405	2.09	1.79	465	5.56
435	1.33	1.27	470	5.47
455	1.25	1.26	475	5.41
485	1.22	1.20	480	5.34
520	1.33	1.22	485	5.29
535	1.44	1.32	490	5.26
600	3.58	2.42	500	5.21
620	8.75	7.00	505	5.21
650	18.48	18.50	510	5.21
700	31.82	32.79	515	5.22
830	59.46	49.64	520	5.23
1330	74.85	51.10	525	5.25
2500	64.01	31.60	530	5.29
3700	50.23	28.03	535	5.32

### +RoHS Compliant

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



### Notes

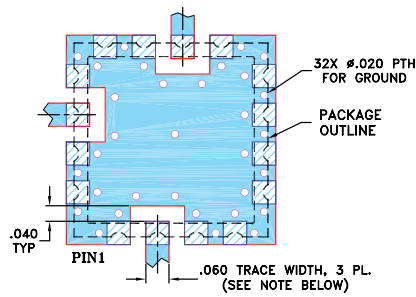
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## Pad Connections

INPUT	2
OUTPUT	10
NOT CONNECTED	14
GROUND	1,3,4,5,6,7,8,9,11,12,13,15,16

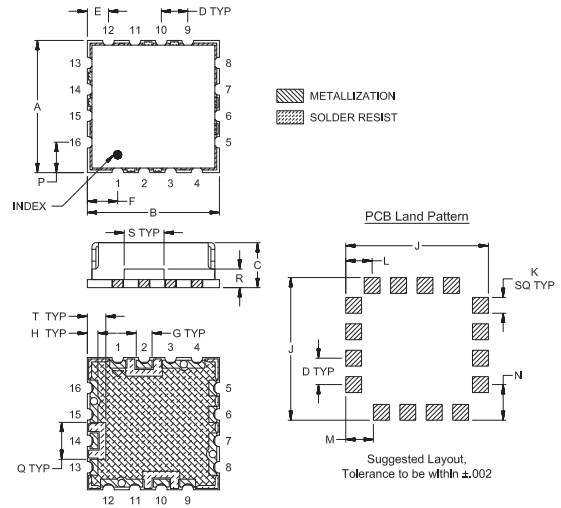
**Demo Board MCL P/N: TB-10**  
**Suggested PCB Layout (PL-012)**



- NOTES: 1. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS  $.030 \pm .002$ ; 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	H	J		
.500	.500	.180	.100	.080	.115	.060	.040	.540		
12.7	12.7	4.57	2.54	2.03	2.92	1.52	1.02	13.72		
K	L	M	N	P	Q	R	S	T	wt.	
.060	.100	.135	.135	.115	.140	.070	.150	.070	grams	
1.52	2.54	3.43	3.43	2.92	3.56	1.78	3.81	1.78	1.0	

Note: Please refer to case style drawing for details

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