

Surface Mount

# Bandpass Filter

**BPF-A600+**

50Ω

500 to 700 MHz

## The Big Deal

- Sharp roll-off
- High rejection (50 dB typical)
- Miniature shielded package



CASE STYLE: HQ1157

## Product Overview

The BPF-A600+ is a band pass filter in a shielded package (size of 0.365" x 1.360" x .35") fabricated using SMT technology. Covering 600 MHz ± 100 MHz bandwidth, 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
More than 40dB rejection up to 1800 MHz	This enables the filter to attenuate spurious signals and reject harmonics for broad band of frequency.
Sharp shape factor of 1.2	Sharp shape factor helps in adjacent channel rejection and hence increased selectivity.
Shielded case	Reduced interference with and from 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.  
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)



# Surface Mount Bandpass Filter

## BPF-A600+

50Ω 500 to 700 MHz



CASE STYLE: HQ1157

### Features

- Sharp roll-off
- High rejection, 50 dB typical
- Shielded case
- Aqueous washable

### Applications

- Broad band wireless 4G system (UHF Wimax)
- Harmonic rejection
- Transmitters / receivers

### Electrical Specifications at 25°C

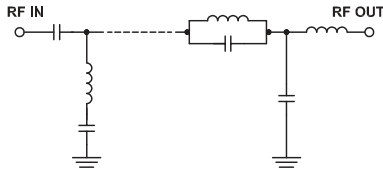
Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Center Frequency	—	—	600	—	MHz	
	Insertion Loss	F1-F2	500-700	—	1.6	2.5	dB
	VSWR	F1-F2	500-700	—	1.6	2.2	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-380	20	32	—	dB
	VSWR	DC-F3	DC-380	—	14	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	795-1800	20	36	—	dB
	VSWR	F4-F5	795-1800	—	13	—	:1

### Maximum Ratings

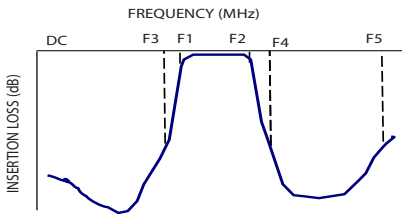
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	1W max.

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

### Functional Schematic



### Typical Frequency Response

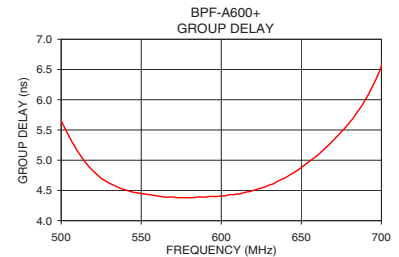
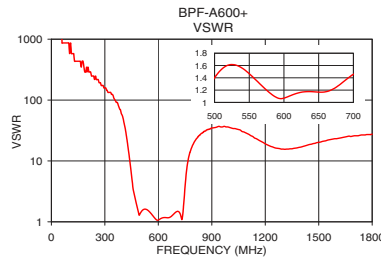
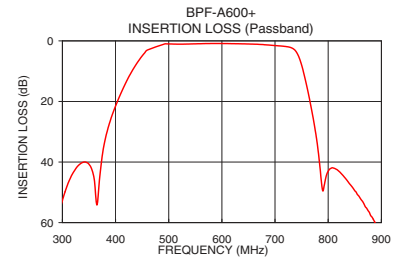
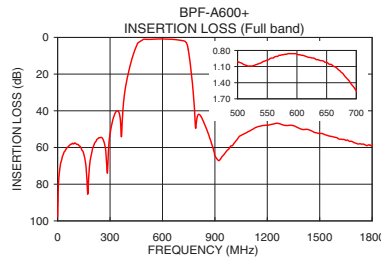


### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
0.5	97.89	5790.59	500.0	5.65
150.0	63.66	434.30	510.0	5.16
300.0	52.69	157.93	520.0	4.82
380.0	32.96	75.53	530.0	4.62
402.5	20.44	49.64	540.0	4.51
430.0	10.28	16.89	550.0	4.45
450.0	4.99	5.70	560.0	4.41
460.0	3.01	3.27	570.0	4.39
500.0	1.01	1.40	580.0	4.38
600.0	0.87	1.07	600.0	4.41
700.0	1.55	1.45	610.0	4.44
740.0	3.63	1.61	620.0	4.50
750.0	7.97	3.76	630.0	4.59
760.0	15.14	7.53	640.0	4.71
780.0	34.74	14.50	650.0	4.88
795.0	45.55	18.70	660.0	5.08
890.0	60.57	33.42	670.0	5.33
1000.0	58.98	35.46	680.0	5.62
1500.0	52.38	20.22	690.0	6.00
1800.0	59.23	27.59	700.0	6.55

### +RoHS Compliant

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



### Notes

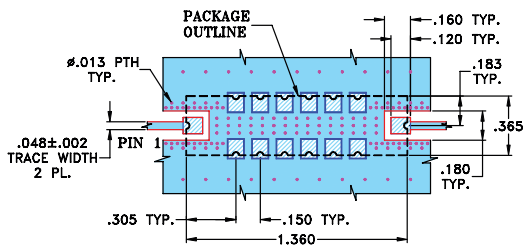
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## Pad Connections

INPUT	1
OUTPUT	8
GROUND	2,3,4,5,6,7,9,10,11,12,13,14

Demo Board MCL P/N: TB-363+  
Suggested PCB Layout (PL-227)

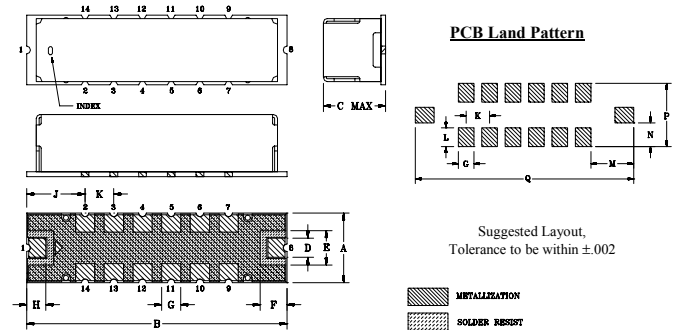


### NOTE:

- 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 SOLDERMASK

## Outline Drawing



## Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H
.365	1.360	.35	.100	.180	.140	.100	.100
9.27	34.54	8.89	2.54	4.57	3.56	2.54	2.54
J	K	L	M	N	P	Q	wt
.305	.150	.120	.275	.152	.405	1.400	grams
7.75	3.81	3.05	6.99	3.86	10.29	35.56	4.0

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