

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.  |

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IF/RF MICROWAVE COMPONENTS

For detailed performance specs  
& shopping online see web site

**Notes:** 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet 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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## BPF-A600+

50Ω 500 to 700 MHz



CASE STYLE: HQ1157  
PRICE: \$29.95 ea. QTY (1-9)

### 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

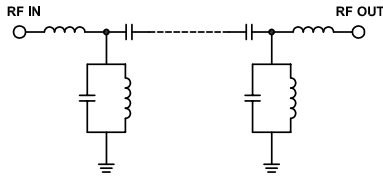
| Parameter        | F#               | Frequency (MHz) | Min.     | Typ. | Max. | Unit |    |
|------------------|------------------|-----------------|----------|------|------|------|----|
| Pass Band        | Center Frequency | —               | —        | 600  | —    | MHz  |    |
|                  | 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

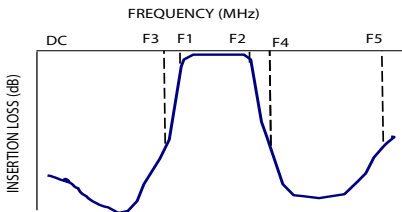
|                       |                |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C  |
| Storage Temperature   | -55°C to 100°C |
| RF Power Input        | 1W max.        |

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

### Functional Schematic



### Typical Frequency Response

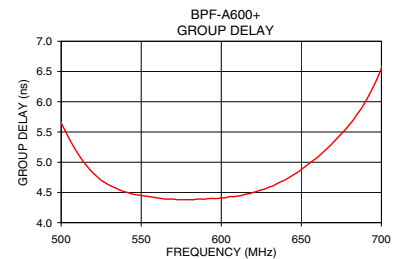
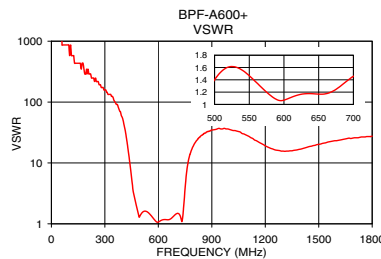
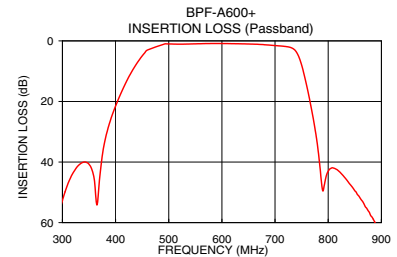
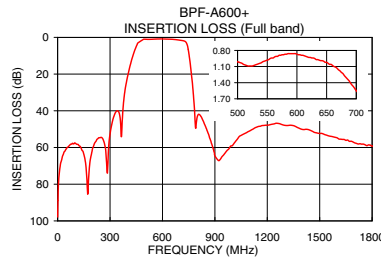


### Typical Performance Data at 25°C

| 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 in accordance with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.



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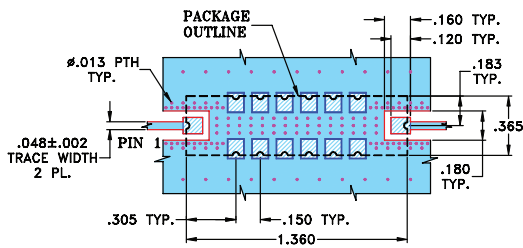
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REV. OR  
M130707  
BPF-A600+  
EDR-9852AU  
RAV/URJ/NY  
110321  
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## Pad Connections

|        |                              |
|--------|------------------------------|
| 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)

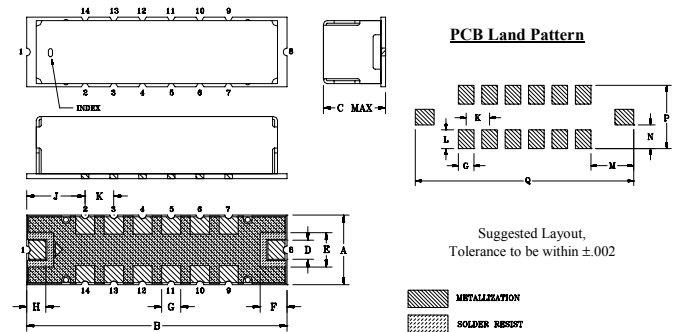


### NOTE:

- 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   |