

# Coaxial Low Pass Filter

NON-CATALOG

BBLP-117+  
BBLP-117

50Ω Flat Time Delay DC to 65 MHz

## Maximum Ratings

|                       |                |
|-----------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature   | -55°C to 100°C |
| RF Power Input        | 0.5W max.      |

## Features

- flat group delay for low pulse distortion
- rugged shielded case
- other BBLP models available with wide selection of cut-off frequencies

## Applications

- linear modulation techniques
- voice transmission applications
- digital communications



CASE STYLE: FF55

| Connectors | Model       | Price               | Qty. |
|------------|-------------|---------------------|------|
| BNC        | BBLP-117(+) | Contact Sales Dept. |      |

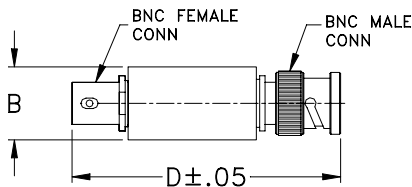
**+ RoHS compliant in accordance with EU Directive (2002/95/EC)**

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

## Low Pass Filter Electrical Specifications

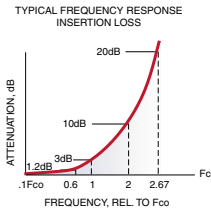
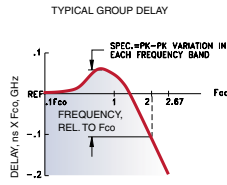
| PASSBAND (MHz)          | fco, MHz Nom. | STOPBAND (MHz)                | VSWR (:1)           | GROUP DELAY VARIATION (nsec) |
|-------------------------|---------------|-------------------------------|---------------------|------------------------------|
| (loss < 1.2 dB)<br>Min. | (loss 3 dB)   | (loss > 10 dB) (loss > 20 dB) | DC-2.2fco DC-2.6fco | DC-fco DC-2fco DC-2.67fco    |
| DC-65                   | 117           | 234-312 312                   | 1.3:1 2.4:1         | 0.35 1.4 1.9                 |

## Outline Drawing

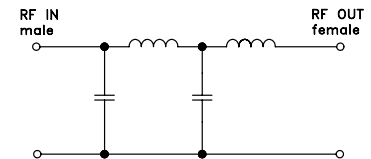


## Outline Dimensions (inch)

| B     | D     | wt    |
|-------|-------|-------|
| .54   | 2.59  | grams |
| 13.72 | 65.79 | 40.0  |

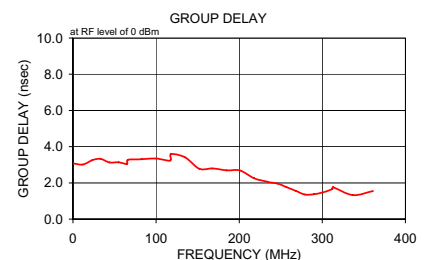
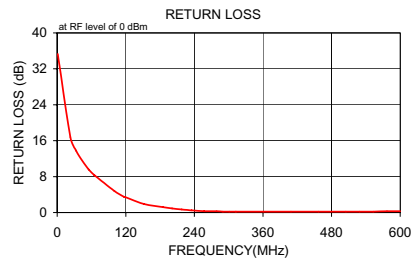
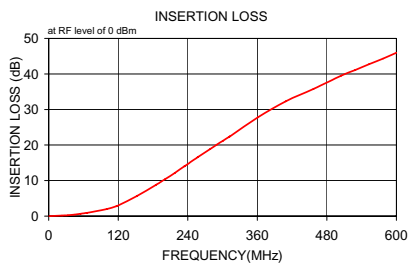


## Electrical Schematic



## Typical Performance Data

| Frequency (MHz) | Insertion Loss (dB) | Return Loss (dB) | Frequency (MHz) | Group Delay (nsec) |
|-----------------|---------------------|------------------|-----------------|--------------------|
| 1.0             | 0.02                | 35.3             | 1.0             | 3.075              |
| 23.0            | 0.15                | 16.8             | 12.0            | 3.015              |
| 33.0            | 0.26                | 13.8             | 23.0            | 3.252              |
| 44.0            | 0.42                | 11.5             | 33.0            | 3.331              |
| 55.0            | 0.65                | 9.6              | 44.0            | 3.126              |
| 65.0            | 0.90                | 8.3              | 55.0            | 3.140              |
| 66.0            | 0.92                | 8.2              | 65.0            | 3.044              |
| 100.0           | 1.96                | 4.8              | 66.0            | 3.271              |
| 117.0           | 2.80                | 3.5              | 83.0            | 3.303              |
| 118.0           | 2.86                | 3.5              | 100.0           | 3.348              |
| 152.0           | 5.63                | 1.9              | 117.0           | 3.233              |
| 185.0           | 8.79                | 1.2              | 118.0           | 3.593              |
| 201.0           | 10.40               | 0.9              | 135.0           | 3.409              |
| 218.0           | 12.20               | 0.7              | 152.0           | 2.782              |
| 234.0           | 13.99               | 0.5              | 168.0           | 2.798              |
| 235.0           | 14.10               | 0.5              | 185.0           | 2.689              |
| 257.0           | 16.54               | 0.3              | 201.0           | 2.681              |
| 279.0           | 18.92               | 0.3              | 218.0           | 2.252              |
| 290.0           | 20.08               | 0.2              | 234.0           | 2.060              |
| 301.0           | 21.23               | 0.2              | 235.0           | 2.038              |
| 312.0           | 22.36               | 0.2              | 246.0           | 1.965              |
| 313.0           | 22.46               | 0.2              | 257.0           | 1.759              |
| 361.0           | 27.82               | 0.2              | 268.0           | 1.562              |
| 409.0           | 32.27               | 0.2              | 279.0           | 1.358              |
| 457.0           | 35.79               | 0.2              | 290.0           | 1.372              |
| 505.0           | 39.52               | 0.2              | 301.0           | 1.483              |
| 529.0           | 41.10               | 0.2              | 312.0           | 1.659              |
| 553.0           | 42.74               | 0.2              | 313.0           | 1.765              |
| 577.0           | 44.30               | 0.3              | 337.0           | 1.324              |
| 600.0           | 45.95               | 0.3              | 361.0           | 1.555              |



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RF/IF MICROWAVE COMPONENTS

REV. A  
M98898  
BBLP-117  
070509

# Coaxial Low Pass Filter (Flat Time Delay)

**BBLP-117+**

## Typical Performance Data

| FREQUENCY<br>(MHz) | INSERTION<br>LOSS<br>(dB) | RETURN<br>LOSS<br>(dB) | FREQUENCY<br>(MHz) | GROUP<br>DELAY<br>(nsec) |
|--------------------|---------------------------|------------------------|--------------------|--------------------------|
| 1.0                | 0.02                      | 35.30                  | 1.0                | 3.075                    |
| 23.0               | 0.15                      | 16.80                  | 12.0               | 3.015                    |
| 33.0               | 0.26                      | 13.80                  | 23.0               | 3.252                    |
| 44.0               | 0.42                      | 11.50                  | 33.0               | 3.331                    |
| 55.0               | 0.65                      | 9.60                   | 44.0               | 3.126                    |
| 65.0               | 0.90                      | 8.30                   | 55.0               | 3.140                    |
| 66.0               | 0.92                      | 8.20                   | 65.0               | 3.044                    |
| 100.0              | 1.96                      | 4.80                   | 66.0               | 3.271                    |
| 117.0              | 2.80                      | 3.50                   | 83.0               | 3.303                    |
| 118.0              | 2.86                      | 3.50                   | 100.0              | 3.348                    |
| 152.0              | 5.63                      | 1.90                   | 117.0              | 3.233                    |
| 185.0              | 8.79                      | 1.20                   | 118.0              | 3.593                    |
| 201.0              | 10.40                     | 0.90                   | 135.0              | 3.409                    |
| 218.0              | 12.20                     | 0.70                   | 152.0              | 2.782                    |
| 234.0              | 13.99                     | 0.50                   | 168.0              | 2.798                    |
| 235.0              | 14.10                     | 0.50                   | 185.0              | 2.689                    |
| 257.0              | 16.54                     | 0.30                   | 201.0              | 2.681                    |
| 279.0              | 18.92                     | 0.30                   | 218.0              | 2.252                    |
| 290.0              | 20.08                     | 0.20                   | 234.0              | 2.060                    |
| 301.0              | 21.23                     | 0.20                   | 235.0              | 2.038                    |
| 312.0              | 22.36                     | 0.20                   | 246.0              | 1.965                    |
| 313.0              | 22.46                     | 0.20                   | 257.0              | 1.759                    |
| 361.0              | 27.82                     | 0.20                   | 268.0              | 1.562                    |
| 409.0              | 32.27                     | 0.20                   | 279.0              | 1.358                    |
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| 577.0              | 44.30                     | 0.30                   | 337.0              | 1.324                    |
| 600.0              | 45.95                     | 0.30                   | 361.0              | 1.555                    |

REV. X1  
BBLP-117+  
060724  
Page 1 of 1



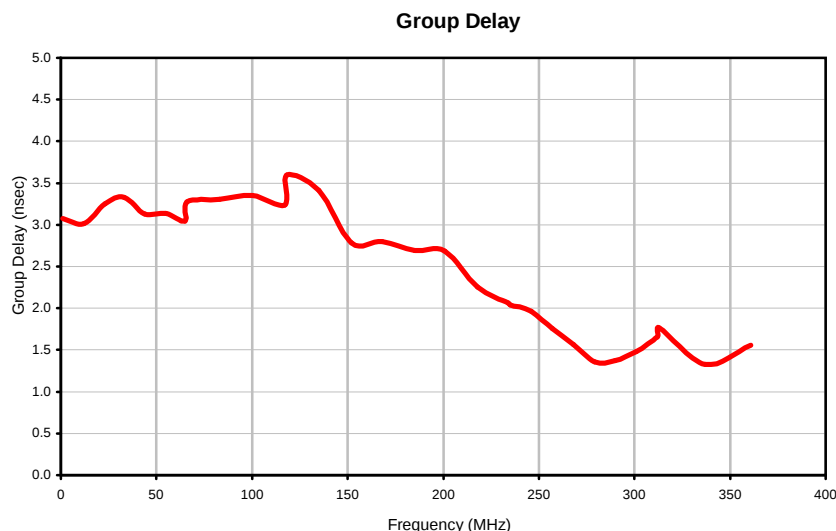
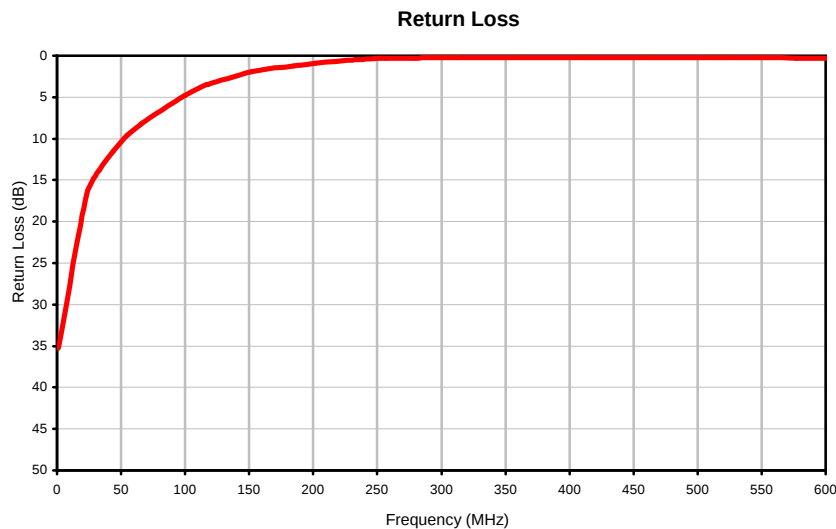
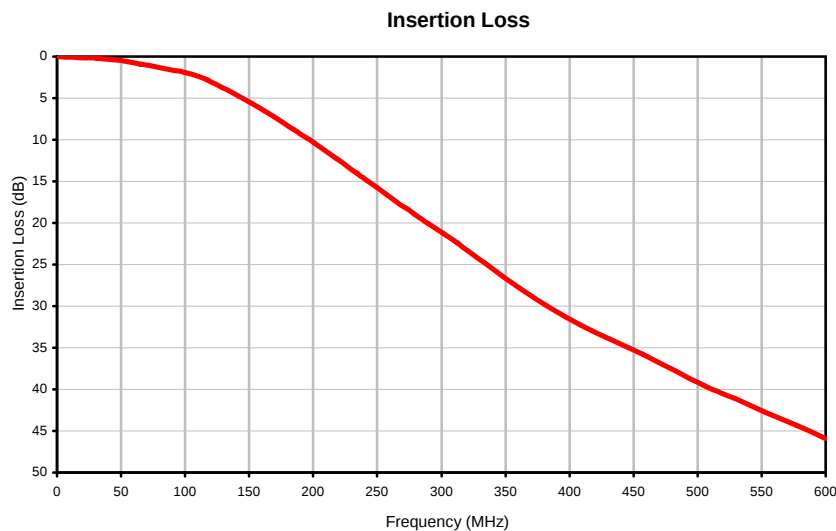
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# Coaxial Low Pass Filter (Flat Time Delay)

BBLP-117+

## Typical Performance Curves



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REV. X1  
BBLP-117+  
060724  
Page 1 of 1

### Outline Dimensions



| CASE #. | A  | B              | C  | D               | E  | WT GRAMS |
|---------|----|----------------|----|-----------------|----|----------|
| FF55    | -- | .57<br>(14.47) | -- | 2.59<br>(65.79) | -- | 40.0     |

Dimensions are in inches (mm). Tolerances: 2Pl. +.03/-.04; 3Pl. ± .015

#### Note:

- Case material: Stainless steel.



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

| Specification              | Test/Inspection Condition                                                              | Reference/Spec                       |
|----------------------------|----------------------------------------------------------------------------------------|--------------------------------------|
| Operating Temperature      | -55° to 100°C<br>Ambient Environment                                                   | Individual Model Data Sheet          |
| Storage Temperature        | -55° to 100° C<br>Ambient Environment                                                  | Individual Model Data Sheet          |
| Barometric Pressure        | 100,000 Feet                                                                           | MIL-STD-202, Method 105, Condition D |
| Humidity                   | 90% RH, 65°C<br>Units may require bake-out after humidity to restore full performance. | MIL-STD-202, Method 103              |
| Thermal Shock              | -65° to 125°C, 5 cycles                                                                | MIL-STD-202, Method 107, Condition B |
| Vibration (High Frequency) | 20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)    | MIL-STD-202, Method 204, Condition D |
| Mechanical Shock           | 100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)                          | MIL-STD-202, Method 213, Condition I |