Coaxial

# Bandpass Filter

## BBP-10.7+

50Ω Elliptic Response 9.5 to 11.5 MHz



Generic photo used for illustration purposes only

CASE STYLE: FF55

| Connectors | Model |
|---|---|
| BNC | BBP-10.7+ |

### Maximum Ratings

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

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

### Features

- low insertion loss, 1.5 dB max.
- good selectivity, 1.76 typ. 20 dB/3dB BW ratio
- rugged shielded case

### Applications

- high rejection applications
- image rejection
- IF signal processing

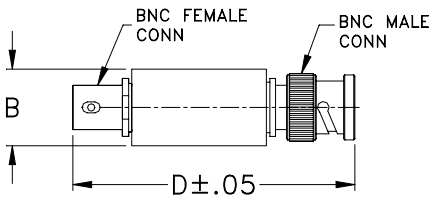
***+RoHS Compliant***

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

### Bandpass Filter Electrical Specifications

| CENTER FREQ. (MHz) | PASSBAND (MHz) I.L. 1.5 dB Max. | 3dB BANDWIDTH (MHz) Typ. | STOPBANDS (I. loss > 20 dB) at MHz | STOPBANDS (I. loss > 35 dB) at MHz | VSWR (:1) Passband Max. | VSWR (:1) Stopband Typ. |
|---|---|---|---|---|---|---|
| 10.7 | 9.5-11.5 | 8.9-12.7 | 7.5 & 15 | 0.6 & 50-1000 | 1.7 | 16 |

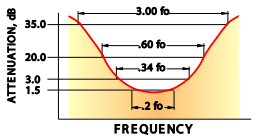
### Outline Drawing



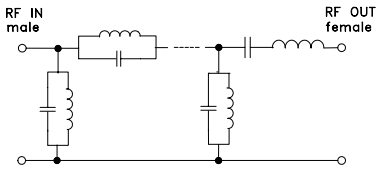

### Outline Dimensions (inch/mm)

| B | D | wt |
|---|---|---|
| .57 | 2.59 | grams |
| 14.47 | 65.79 | 40.0 |

### typical frequency response



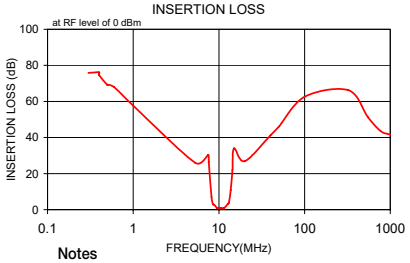

### electrical schematic



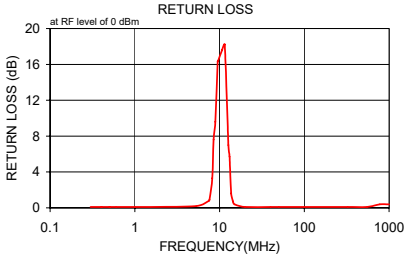

### Typical Performance Data

| Frequency (MHz) | Insertion Loss (dB) x̄ | Insertion Loss (dB) σ | Return Loss (dB) | Frequency (MHz) | Group Delay (nsec) |
|---|---|---|---|---|---|
| 0.3 | 75.80 | 2.6 | 0.1 | 0.7 | 32.371 |
| 0.4 | 76.10 | 4.5 | 0.1 | 3.0 | 12.114 |
| 0.4 | 74.62 | 4.4 | 0.1 | 5.2 | 24.403 |
| 0.5 | 69.06 | 2.7 | 0.1 | 7.5 | 215.923 |
| 0.5 | 69.33 | 1.0 | 0.1 | 7.9 | 159.468 |
| 0.6 | 67.91 | 1.5 | 0.1 | 8.0 | 91.912 |
| 1.0 | 57.74 | 0.3 | 0.1 | 8.5 | 212.732 |
| 5.3 | 25.94 | 0.6 | 0.2 | 8.9 | 237.192 |
| 7.5 | 30.37 | 2.8 | 0.8 | 9.1 | 235.123 |
| 7.6 | 26.43 | 4.9 | 0.9 | 9.4 | 213.803 |
| 8.2 | 7.00 | 1.5 | 3.3 | 9.6 | 197.449 |
| 8.5 | 3.15 | 0.8 | 7.6 | 9.8 | 180.177 |
| 8.9 | 2.45 | 0.7 | 9.6 | 10.2 | 153.153 |
| 9.5 | 0.99 | 0.1 | 16.3 | 10.4 | 145.221 |
| 9.6 | 0.97 | 0.1 | 16.4 | 10.6 | 140.803 |
| 10.7 | 0.86 | 0.1 | 17.6 | 10.9 | 138.559 |
| 11.5 | 0.92 | 0.1 | 18.2 | 11.3 | 141.337 |
| 12.7 | 3.16 | 0.8 | 7.0 | 11.5 | 145.896 |
| 13.1 | 3.82 | 1.0 | 5.7 | 12.5 | 165.780 |
| 13.7 | 10.81 | 2.5 | 1.6 | 12.8 | 163.590 |
| 14.4 | 22.10 | 4.6 | 0.7 | 13.3 | 145.784 |
| 15.0 | 33.97 | 4.4 | 0.4 | 13.6 | 127.403 |
| 20.0 | 26.84 | 0.5 | 0.1 | 14.1 | 36.953 |
| 40.0 | 41.22 | 0.5 | 0.1 | 15.0 | 85.658 |
| 50.0 | 46.00 | 0.7 | 0.1 | 16.0 | 118.360 |
| 100.0 | 62.57 | 1.7 | 0.1 | 27.1 | 4.513 |
| 325.0 | 66.25 | 3.8 | 0.1 | 39.0 | 2.558 |
| 550.0 | 51.22 | 1.1 | 0.1 | 48.7 | 2.259 |
| 775.0 | 43.48 | 1.5 | 0.4 | 49.7 | 2.045 |
| 1000.0 | 41.66 | 1.9 | 0.4 | 50.7 | 2.283 |

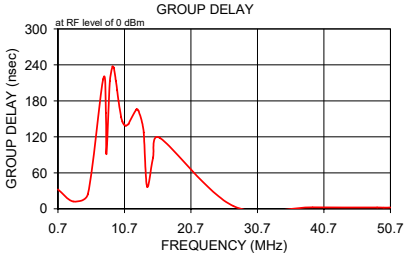
INSERTION LOSS




RETURN LOSS




GROUP DELAY




**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.
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# Coaxial Band Pass Filter (Elliptic Response) BBP-10.7+

*Typical Performance Data*

| FREQUENCY (MHz) | INSERTION LOSS (dB) | RETURN LOSS (dB) |
|---|---|---|
| 0.30 | 78.60 | 0.00 |
| 0.35 | 76.81 | 0.00 |
| 0.40 | 74.11 | 0.00 |
| 0.45 | 72.16 | 0.00 |
| 0.50 | 70.66 | 0.00 |
| 0.55 | 70.07 | 0.00 |
| 0.60 | 68.32 | 0.00 |
| 0.65 | 66.79 | 0.00 |
| 0.70 | 65.39 | 0.00 |
| 0.75 | 63.82 | 0.00 |
| 0.80 | 62.84 | 0.00 |
| 0.90 | 60.96 | 0.00 |
| 1.00 | 59.20 | 0.00 |
| 1.10 | 57.32 | 0.00 |
| 1.20 | 55.54 | 0.00 |
| 1.30 | 55.01 | 0.00 |
| 1.40 | 53.21 | 0.00 |
| 1.50 | 51.91 | 0.00 |
| 1.60 | 50.68 | 0.00 |
| 1.70 | 49.60 | 0.00 |
| 1.80 | 48.55 | 0.01 |
| 1.90 | 47.61 | 0.01 |
| 2.00 | 46.62 | 0.00 |
| 5.30 | 27.28 | 0.06 |
| 7.50 | 31.35 | 0.45 |
| 7.60 | 24.93 | 0.53 |
| 8.20 | 6.26 | 2.87 |
| 8.50 | 2.40 | 7.72 |
| 8.90 | 0.98 | 18.45 |
| 9.50 | 0.68 | 21.46 |
| 9.60 | 0.66 | 21.40 |
| 10.70 | 0.58 | 23.38 |
| 11.50 | 0.62 | 26.68 |
| 12.70 | 1.43 | 11.75 |
| 13.10 | 3.33 | 5.29 |
| 13.70 | 10.20 | 1.39 |
| 14.40 | 23.48 | 0.51 |
| 15.00 | 36.66 | 0.35 |
| 20.00 | 26.98 | 0.11 |
| 30.00 | 35.78 | 0.05 |
| 40.00 | 41.83 | 0.04 |
| 50.00 | 46.53 | 0.03 |
| 100.00 | 64.50 | 0.04 |
| 200.00 | 59.74 | 0.05 |
| 300.00 | 82.39 | 0.06 |
| 400.00 | 87.91 | 0.08 |
| 500.00 | 85.55 | 0.15 |
| 550.00 | 77.19 | 0.29 |
| 600.00 | 58.12 | 1.06 |
| 700.00 | 48.60 | 0.65 |
| 775.00 | 46.64 | 0.53 |
| 800.00 | 45.47 | 0.62 |
| 900.00 | 39.15 | 3.07 |
| 1000.00 | 44.34 | 1.53 |

| FREQUENCY (MHz) | GROUP DELAY (nsec) |
|---|---|
| 9.00 | 237.19 |
| 9.10 | 218.76 |
| 9.20 | 203.61 |
| 9.30 | 191.17 |
| 9.40 | 180.95 |
| 9.45 | 176.50 |
| 9.50 | 172.47 |
| 9.55 | 168.80 |
| 9.60 | 165.46 |
| 9.65 | 162.33 |
| 9.70 | 159.51 |
| 9.75 | 156.91 |
| 9.80 | 154.52 |
| 9.85 | 152.31 |
| 9.90 | 150.29 |
| 9.95 | 148.39 |
| 10.00 | 146.68 |
| 10.05 | 145.05 |
| 10.10 | 143.61 |
| 10.15 | 142.24 |
| 10.20 | 141.00 |
| 10.25 | 139.86 |
| 10.30 | 138.80 |
| 10.35 | 137.88 |
| 10.40 | 137.05 |
| 10.45 | 136.30 |
| 10.50 | 135.64 |
| 10.55 | 135.05 |
| 10.60 | 134.54 |
| 10.65 | 134.12 |
| 10.70 | 133.78 |
| 10.75 | 133.53 |
| 10.80 | 133.32 |
| 10.85 | 133.20 |
| 10.90 | 133.15 |
| 10.95 | 133.14 |
| 11.00 | 133.25 |
| 11.05 | 133.44 |
| 11.10 | 133.68 |
| 11.15 | 133.98 |
| 11.20 | 134.40 |
| 11.25 | 134.87 |
| 11.30 | 135.44 |
| 11.35 | 136.11 |
| 11.40 | 136.89 |
| 11.45 | 137.73 |
| 11.50 | 138.69 |
| 11.55 | 139.79 |
| 11.60 | 141.01 |
| 11.65 | 142.33 |
| 11.70 | 143.84 |
| 11.80 | 147.24 |
| 11.90 | 151.41 |
| 12.00 | 156.37 |

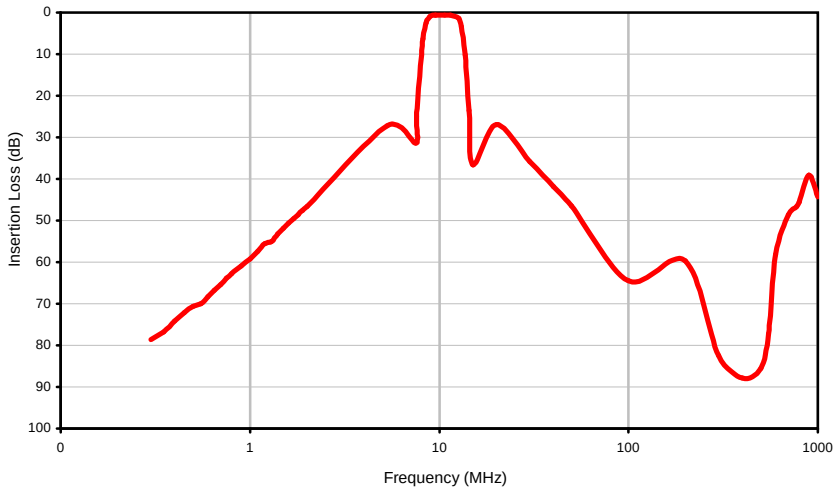


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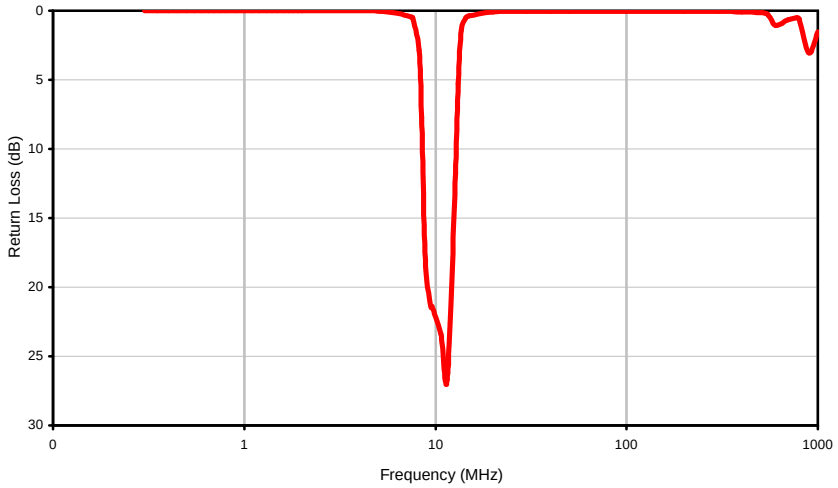
# Coaxial Band Pass Filter (Elliptic Response) BBP-10.7+

## *Typical Performance Curves*

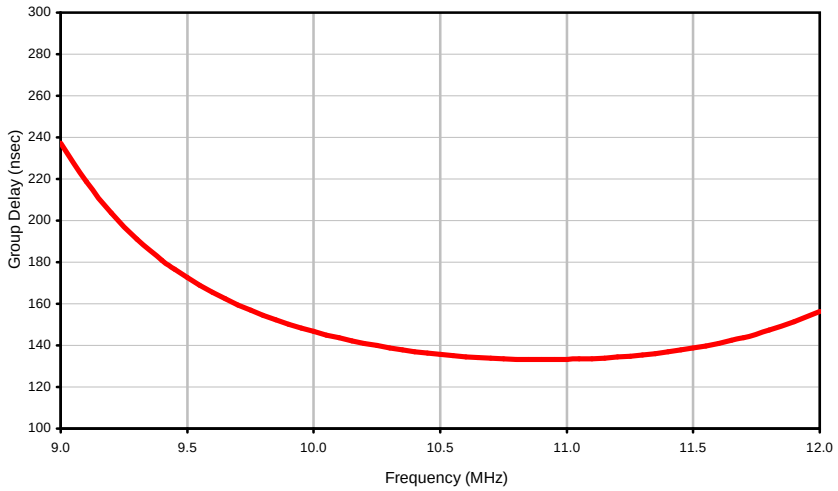
**Insertion Loss**




**Return Loss**




**Group Delay**





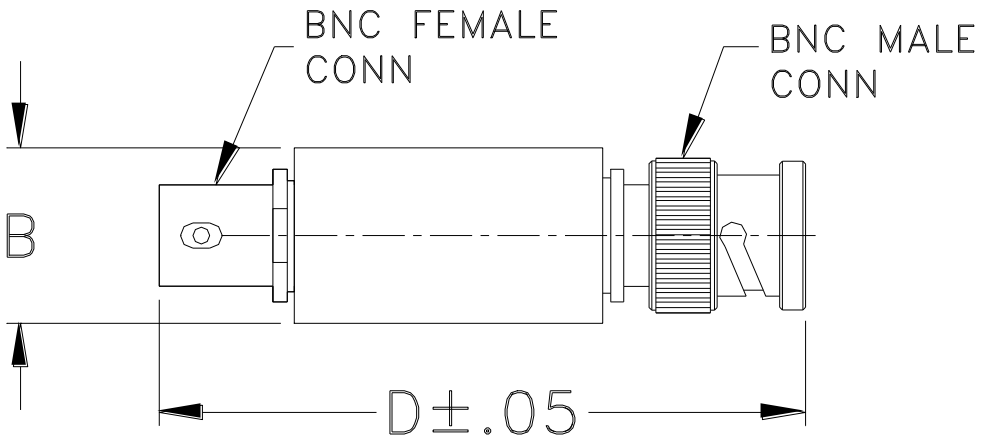


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# Case Style FF

**FF55**

## Outline Dimensions




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

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

**Note:**

1. Case material: Stainless steel.


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# Environmental Specifications ENV28

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 |


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