

Coaxial Bandpass Filter

BBP-35B+

50Ω 24 to 46 MHz



The Big Deal

- Very good rejection
- Very low insertion loss, 0.5 dB typ.
- Good VSWR (1.2:1 typical)
- Sharp roll-off
- Connectorized package

Generic photo used for illustration purposes only
CASE STYLE: FF55

Product Overview

BBP-35B+ is a 50Ω bandpass filter in a connectorized package. The bandpass filter covers from 24 to 46 MHz, offering low insertion loss and good matching within the passband. It uses miniature high Q capacitors and wire welded inductors for high reliability. It has repeatable performance across production lots and consistent performance across temperature.

Key Features

| Feature | Advantages |
|--|--|
| Sharp roll off | Sharp roll off due to elliptic response |
| Good VSWR, 1.2:1 typical over passband | This provides well matched input and output ports. |
| Connectorized package | Connectorized package is easy to interface with other devices and well suited for test setups. |

Notes

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B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' 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



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Bandpass Filter

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| Connectors | Model |
|------------|----------|
| BNC | BBP-35B+ |

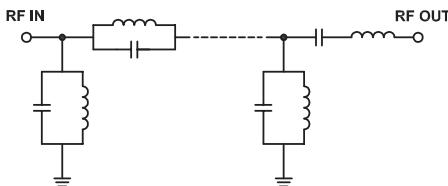
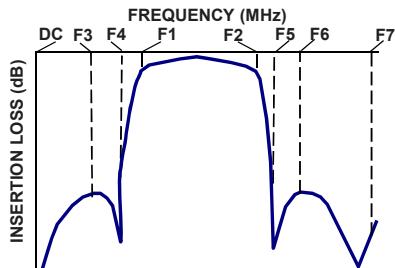
Features

- Very low insertion loss, 0.5 dB typ.
- Good VSWR, 1.2:1 typical in passband
- Sharp roll off due to elliptic response

Applications

- Transmitters / Receivers- IF stage
- Harmonic rejection
- Test equipment
- Military communication

| Electrical Specifications at 25°C | | | | | | | |
|-----------------------------------|----------------|-------|-----------------|------|------|------|------|
| | Parameter | F# | Frequency (MHz) | Min. | Typ. | Max. | Unit |
| Pass Band | Insertion Loss | F1-F2 | 24 - 46 | - | 0.5 | 1.0 | dB |
| | VSWR | F1-F2 | 24 - 46 | - | 1.2 | 1.5 | :1 |
| Stop Band, Lower | Insertion Loss | DC-F3 | DC - 5 | 35 | 44 | - | dB |
| | VSWR | F3-F4 | 5 - 16 | 20 | 29 | - | dB |
| | | DC-F4 | DC - 16 | - | 25 | - | :1 |
| Stop Band, Upper | Insertion Loss | F5-F6 | 73 - 81 | 20 | 27 | - | dB |
| | VSWR | F6-F7 | 81 - 1000 | 35 | 39 | - | dB |
| | | F5-F7 | 73 - 1000 | - | 20 | - | :1 |

Functional Schematic**Typical Frequency Response****+RoHS Compliant**

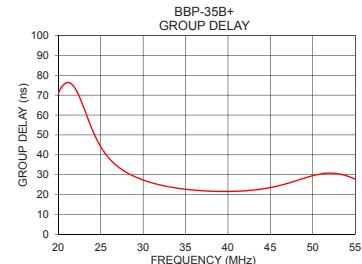
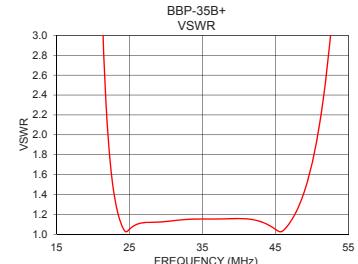
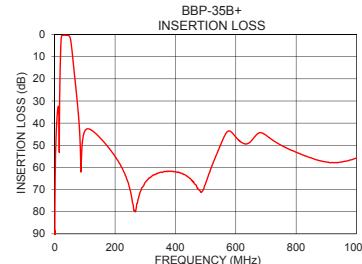
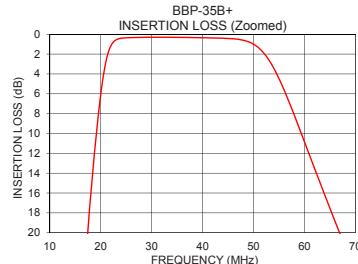
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

| Maximum Ratings | |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| RF Power Input | 0.5 W max. |

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

Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) | Frequency (MHz) | Group Delay (ns) |
|-----------------|---------------------|-----------|-----------------|------------------|
| 1 | 71.98 | 173.53 | 24 | 52.73 |
| 5 | 44.44 | 365.70 | 25 | 44.06 |
| 8 | 36.76 | 177.97 | 26 | 38.15 |
| 10 | 33.67 | 143.50 | 27 | 34.14 |
| 16 | 33.00 | 78.51 | 28 | 31.26 |
| 20 | 6.04 | 9.11 | 29 | 29.07 |
| 21 | 2.78 | 3.91 | 30 | 27.37 |
| 24 | 0.40 | 1.08 | 31 | 25.98 |
| 28 | 0.31 | 1.12 | 32 | 24.86 |
| 35 | 0.32 | 1.15 | 33 | 23.98 |
| 46 | 0.46 | 1.03 | 34 | 23.25 |
| 54 | 3.46 | 4.41 | 35 | 22.70 |
| 67 | 20.17 | 49.98 | 36 | 22.26 |
| 73 | 28.01 | 67.62 | 37 | 21.94 |
| 81 | 40.54 | 77.74 | 38 | 21.73 |
| 100 | 43.51 | 80.76 | 39 | 21.63 |
| 200 | 55.03 | 58.14 | 40 | 21.61 |
| 300 | 66.79 | 49.42 | 41 | 21.70 |
| 500 | 67.25 | 42.70 | 43 | 22.28 |
| 1000 | 55.74 | 46.27 | 46 | 24.48 |

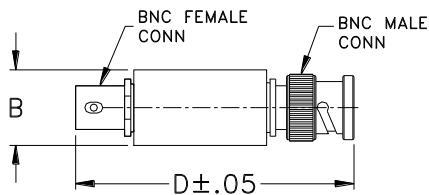
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Coaxial Connections

| | |
|----------|------------|
| PORt - 1 | BNC-Male |
| PORt - 2 | BNC-Female |

Outline Drawing**Outline Dimensions (inch)**

| A | B | C | D | E | Wt. |
|----|-------------|----|-------------|----|-------|
| -- | 0.57 | -- | 2.59 | -- | grams |
| -- | 14.47 | -- | 65.79 | -- | 40 |

Note: Please refer to case style drawing for details

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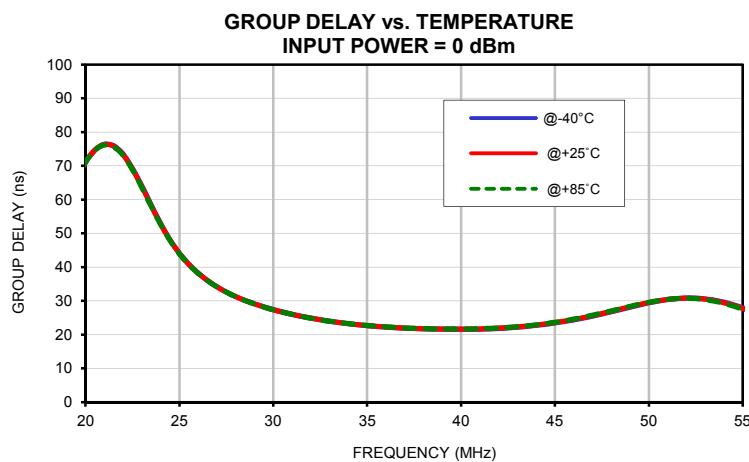
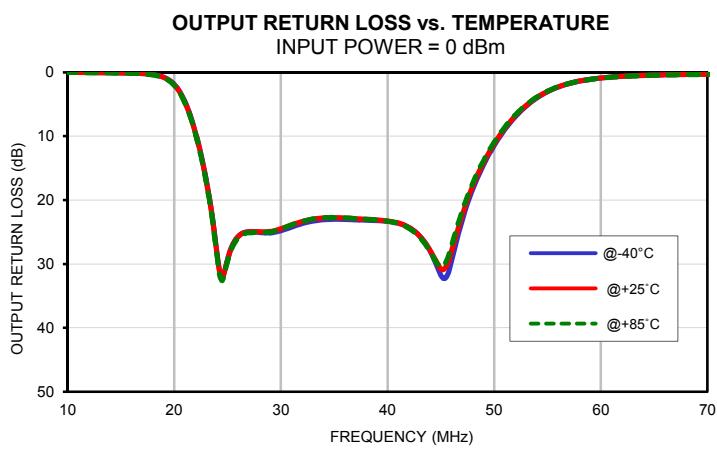
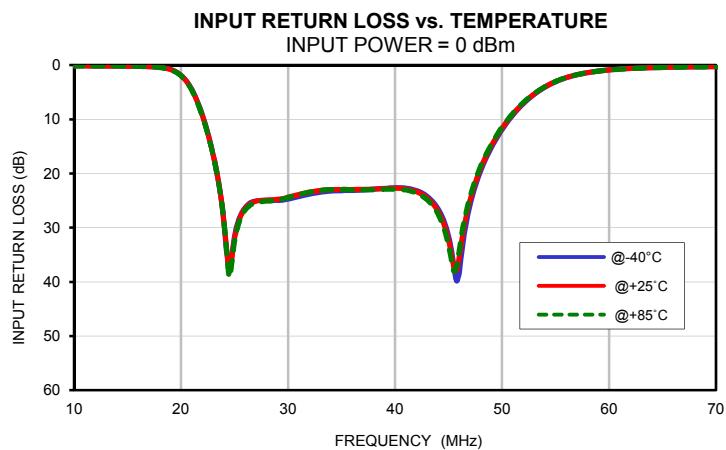
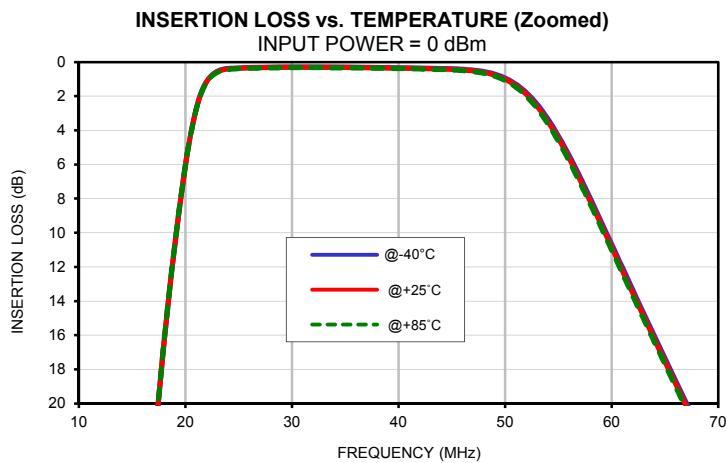
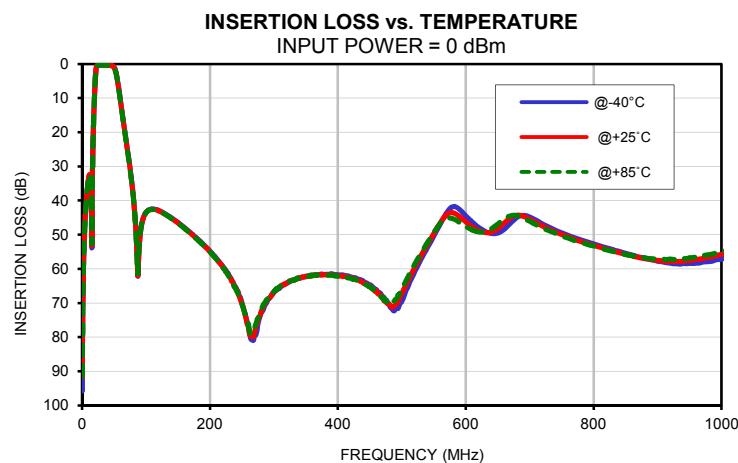
Typical Performance Data

| FREQ. (MHz) | GROUP DELAY | | |
|----------------|-------------|--------|--------|
| | (nsec) | | |
| | @-40°C | @+25°C | @+85°C |
| 24.00 | 52.90 | 52.73 | 52.57 |
| 24.25 | 50.42 | 50.27 | 50.13 |
| 24.50 | 48.12 | 48.01 | 47.87 |
| 24.75 | 46.03 | 45.93 | 45.83 |
| 25.00 | 44.14 | 44.06 | 43.96 |
| 25.25 | 42.43 | 42.36 | 42.28 |
| 25.50 | 40.87 | 40.81 | 40.75 |
| 25.75 | 39.47 | 39.41 | 39.36 |
| 26.00 | 38.19 | 38.15 | 38.10 |
| 26.25 | 37.04 | 37.01 | 36.97 |
| 26.50 | 35.99 | 35.96 | 35.93 |
| 26.75 | 35.04 | 35.02 | 34.99 |
| 27.00 | 34.16 | 34.14 | 34.12 |
| 27.25 | 33.35 | 33.34 | 33.32 |
| 27.50 | 32.60 | 32.60 | 32.58 |
| 27.75 | 31.90 | 31.89 | 31.88 |
| 28.00 | 31.26 | 31.26 | 31.25 |
| 28.25 | 30.67 | 30.66 | 30.66 |
| 28.50 | 30.11 | 30.10 | 30.09 |
| 28.75 | 29.58 | 29.58 | 29.57 |
| 29.00 | 29.08 | 29.07 | 29.07 |
| 29.25 | 28.61 | 28.61 | 28.60 |
| 29.50 | 28.18 | 28.19 | 28.18 |
| 29.75 | 27.75 | 27.75 | 27.75 |
| 30.00 | 27.37 | 27.37 | 27.37 |
| 30.25 | 27.00 | 27.00 | 26.99 |
| 30.50 | 26.64 | 26.63 | 26.64 |
| 30.75 | 26.30 | 26.31 | 26.30 |
| 31.00 | 25.98 | 25.98 | 25.99 |
| 31.50 | 25.39 | 25.40 | 25.40 |
| 32.00 | 24.86 | 24.86 | 24.86 |
| 32.50 | 24.37 | 24.39 | 24.40 |
| 33.00 | 23.96 | 23.98 | 23.99 |
| 33.50 | 23.58 | 23.60 | 23.61 |
| 34.00 | 23.24 | 23.25 | 23.26 |
| 34.50 | 22.93 | 22.95 | 22.97 |
| 35.00 | 22.66 | 22.70 | 22.71 |
| 35.50 | 22.45 | 22.47 | 22.49 |
| 36.00 | 22.23 | 22.26 | 22.29 |
| 36.50 | 22.06 | 22.09 | 22.12 |
| 37.00 | 21.90 | 21.94 | 21.97 |
| 37.50 | 21.79 | 21.83 | 21.85 |
| 38.00 | 21.69 | 21.73 | 21.76 |
| 40.00 | 21.54 | 21.61 | 21.65 |
| 40.50 | 21.57 | 21.63 | 21.68 |
| 41.00 | 21.62 | 21.70 | 21.76 |
| 41.50 | 21.71 | 21.79 | 21.85 |
| 42.00 | 21.85 | 21.92 | 21.99 |
| 42.50 | 22.00 | 22.08 | 22.15 |
| 45.00 | 23.43 | 23.55 | 23.65 |
| 46.00 | 24.35 | 24.48 | 24.60 |

Coaxial Band Pass Filter

BBP-35B+

Typical Performance Curves

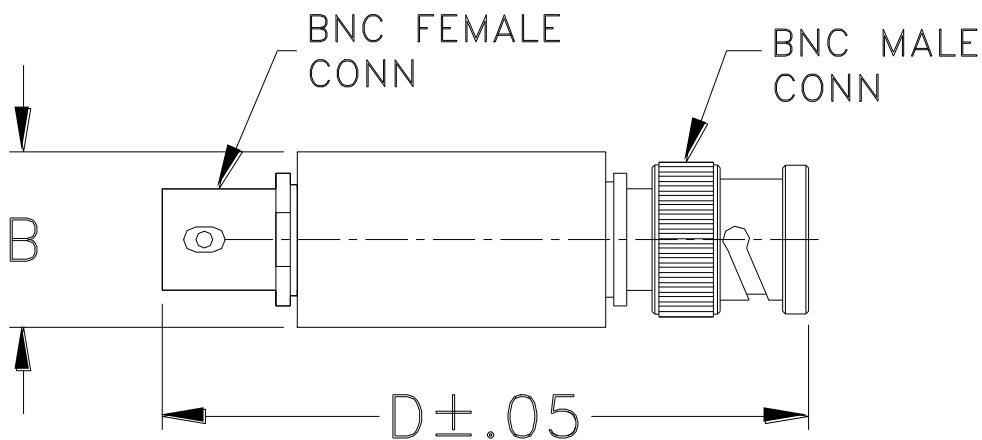


Case Style

FF

FF55

Outline Dimensions



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

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

Note:

1. Case material: Stainless steel.

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| Specification | Test/Inspection Condition | Reference/Spec |
|-----------------------|---------------------------------------|--|
| Operating Temperature | -40° to 85° C Ambient Environment | Individual Model Data Sheet |
| Storage Temperature | -55° to 100° C Ambient Environment | Individual Model Data Sheet |
| Thermal Shock | -55° to 100°C, 100 cycles | MIL-STD-202, Method 107, Condition A-3, except +100°C |