

# Bandpass Filter

## SMT

BFCN-ED13661/10

**Important Note**

This model has been designed, built and tested in our engineering department. Performance data represents model capability.  
At present it is a non-catalog model. On request, we can supply a final specification sheet, part number and price/delivery information.

Please click "Back", and then click "Contact Us" for Applications support.

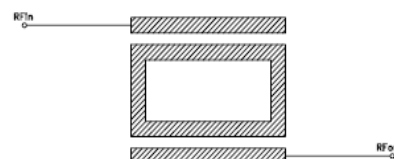


CASE STYLE : FV1206-4

| ELECTRICAL SPECIFICATIONS 50Ω @ +25°C |                  |       |                 |      |      |      |       |
|---------------------------------------|------------------|-------|-----------------|------|------|------|-------|
| Parameters                            |                  | F#    | Frequency (MHz) | Min. | Typ. | Max. | Units |
| Pass Band                             | Center Frequency |       |                 |      | 8350 |      | MHz   |
|                                       | Insertion Loss   | F1-F2 | 8250-8450       |      | 1.8  | 3.5  | dB    |
|                                       | VSWR             | F1-F2 | 8250-8450       |      | 1.4  |      | :1    |
| Stop Band, Lower                      | Insertion Loss   | DC-F5 | DC-7200         | 15   | 20   |      | dB    |
|                                       |                  | F5-F3 | 7200-7400       |      | 25   |      | dB    |
|                                       | VSWR             | DC-F3 | DC-7400         |      | 30   |      | :1    |
| Stop Band, Upper                      | Insertion Loss   | F4-F6 | 9600-9700       |      | 25   |      | dB    |
|                                       |                  | F6-F7 | 9700-15000      | 15   | 20   |      | dB    |
|                                       | VSWR             | F4-F7 | 9600-15000      |      | 30   |      | :1    |

| MAXIMUM RATINGS       |                |
|-----------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature   | -55°C to 100°C |
| RF Power Input*       | 2W max. @ 25°C |

\*Passband rating, derate linearly to 0.5W at 100°C ambient

**Functional Schematic**

| PIN CONNECTIONS |     |
|-----------------|-----|
| RF IN           | 1   |
| RF OUT          | 3   |
| GROUND          | 2,4 |

# Ceramic Bandpass Filter

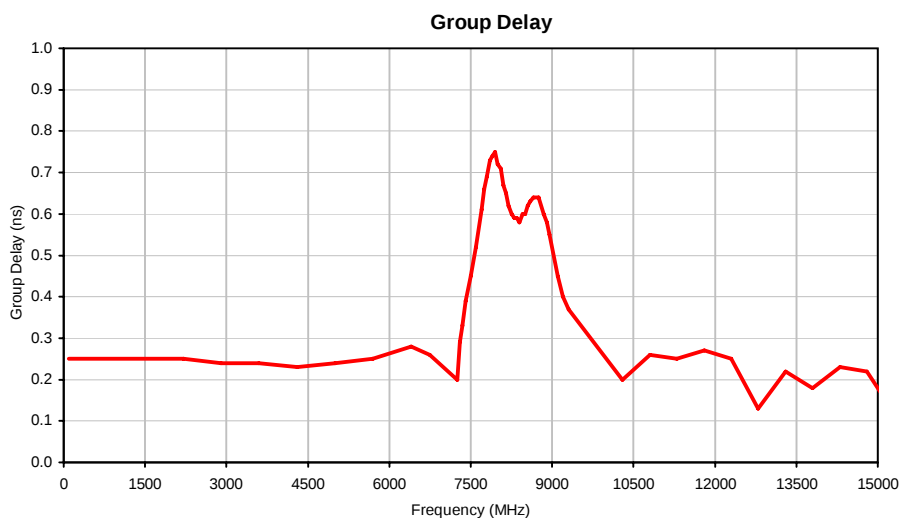
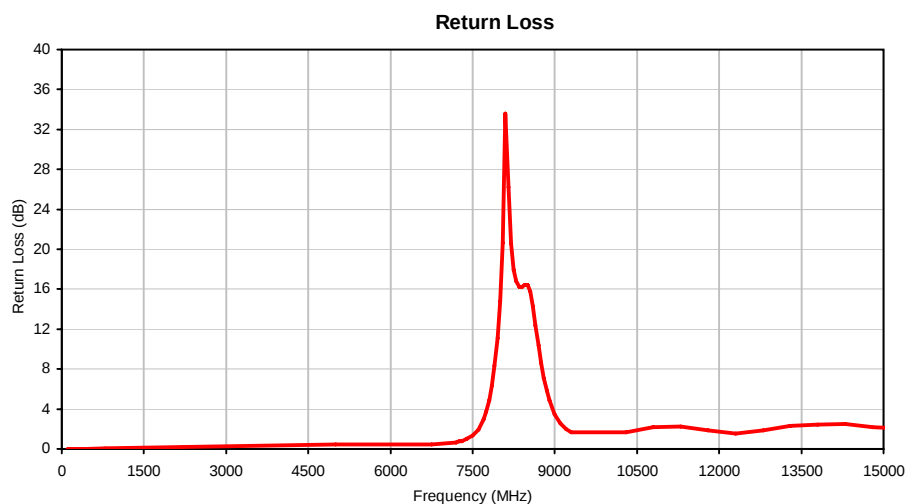
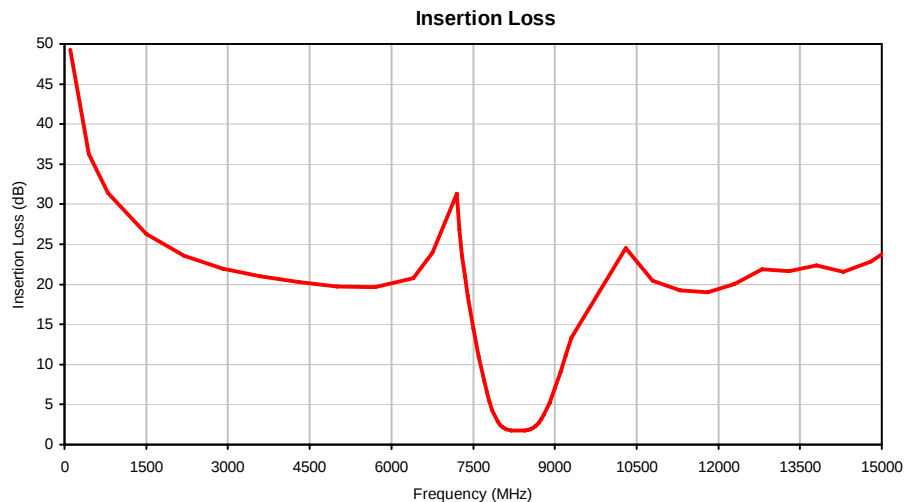
BFCN-ED13661/10

## Typical Performance Data

| FREQUENCY | INSERTION LOSS | RETURN LOSS | FREQUENCY | GROUP DELAY |
|-----------|----------------|-------------|-----------|-------------|
| (MHz)     | (dB)           | (dB)        | (MHz)     | (ns)        |
| 100.0     | 49.29          | 0.01        | 100.0     | 0.25        |
| 450.0     | 36.29          | 0.03        | 450.0     | 0.25        |
| 800.0     | 31.37          | 0.06        | 800.0     | 0.25        |
| 1500.0    | 26.27          | 0.14        | 1500.0    | 0.25        |
| 2200.0    | 23.55          | 0.22        | 2200.0    | 0.25        |
| 2900.0    | 21.98          | 0.28        | 2900.0    | 0.24        |
| 3600.0    | 21.00          | 0.33        | 3600.0    | 0.24        |
| 4300.0    | 20.28          | 0.41        | 4300.0    | 0.23        |
| 5000.0    | 19.72          | 0.47        | 5000.0    | 0.24        |
| 5700.0    | 19.67          | 0.46        | 5700.0    | 0.25        |
| 6400.0    | 20.74          | 0.42        | 6400.0    | 0.28        |
| 6750.0    | 23.97          | 0.46        | 6750.0    | 0.26        |
| 7200.0    | 31.32          | 0.67        | 7250.0    | 0.20        |
| 7250.0    | 26.87          | 0.74        | 7300.0    | 0.29        |
| 7300.0    | 23.58          | 0.80        | 7350.0    | 0.33        |
| 7350.0    | 20.89          | 0.89        | 7400.0    | 0.39        |
| 7400.0    | 18.52          | 1.01        | 7500.0    | 0.45        |
| 7500.0    | 14.49          | 1.34        | 7600.0    | 0.52        |
| 7600.0    | 10.99          | 1.91        | 7700.0    | 0.61        |
| 7700.0    | 7.92           | 2.95        | 7750.0    | 0.66        |
| 7750.0    | 6.57           | 3.74        | 7800.0    | 0.69        |
| 7800.0    | 5.37           | 4.87        | 7850.0    | 0.73        |
| 7850.0    | 4.33           | 6.35        | 7900.0    | 0.74        |
| 7900.0    | 3.51           | 8.35        | 7950.0    | 0.75        |
| 7950.0    | 2.87           | 11.06       | 8000.0    | 0.72        |
| 8000.0    | 2.42           | 14.83       | 8050.0    | 0.71        |
| 8050.0    | 2.12           | 20.66       | 8100.0    | 0.67        |
| 8100.0    | 1.95           | 33.62       | 8150.0    | 0.65        |
| 8150.0    | 1.83           | 26.20       | 8200.0    | 0.62        |
| 8200.0    | 1.78           | 20.60       | 8250.0    | 0.60        |
| 8250.0    | 1.75           | 17.97       | 8300.0    | 0.59        |
| 8300.0    | 1.74           | 16.79       | 8350.0    | 0.59        |
| 8350.0    | 1.74           | 16.22       | 8400.0    | 0.58        |
| 8400.0    | 1.75           | 16.20       | 8450.0    | 0.60        |
| 8450.0    | 1.78           | 16.39       | 8500.0    | 0.60        |
| 8500.0    | 1.84           | 16.42       | 8550.0    | 0.62        |
| 8550.0    | 1.94           | 15.80       | 8600.0    | 0.63        |
| 8600.0    | 2.10           | 14.28       | 8650.0    | 0.64        |
| 8650.0    | 2.34           | 12.38       | 8700.0    | 0.64        |
| 8700.0    | 2.71           | 10.38       | 8750.0    | 0.64        |
| 8750.0    | 3.16           | 8.60        | 8800.0    | 0.62        |
| 8800.0    | 3.74           | 7.11        | 8850.0    | 0.6         |
| 8850.0    | 4.43           | 5.86        | 8900.0    | 0.58        |
| 8900.0    | 5.22           | 4.87        | 8950.0    | 0.55        |
| 9000.0    | 7.02           | 3.47        | 9000.0    | 0.52        |
| 9100.0    | 9.02           | 2.57        | 9100.0    | 0.45        |
| 9200.0    | 11.13          | 2.00        | 9200.0    | 0.4         |
| 9300.0    | 13.31          | 1.64        | 9300.0    | 0.37        |
| 10300.0   | 24.53          | 1.69        | 10300.0   | 0.2         |
| 10800.0   | 20.46          | 2.20        | 10800.0   | 0.26        |
| 11300.0   | 19.25          | 2.23        | 11300.0   | 0.25        |
| 11800.0   | 18.99          | 1.89        | 11800.0   | 0.27        |
| 12300.0   | 20.01          | 1.56        | 12300.0   | 0.25        |
| 12800.0   | 21.90          | 1.83        | 12800.0   | 0.13        |
| 13300.0   | 21.68          | 2.28        | 13300.0   | 0.22        |
| 13800.0   | 22.37          | 2.43        | 13800.0   | 0.18        |
| 14300.0   | 21.55          | 2.47        | 14300.0   | 0.23        |
| 14800.0   | 22.81          | 2.21        | 14800.0   | 0.22        |
| 15050.0   | 23.94          | 2.12        | 15050.0   | 0.17        |

# Ceramic Bandpass Filter BFCN-ED13661/10

## Typical Performance Curves



Sheet 4 of 8

## DEVICE ORIENTATION IN T&R

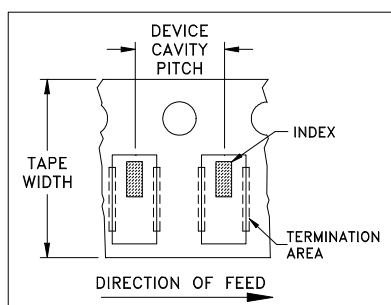


ILLUSTRATION 1



ILLUSTRATION 2



ILLUSTRATION 3

### Applicable Case Styles

FV1206-1  
FV1206-3

### Applicable Case Styles

FV1206-4  
FV1206-5  
FV1206-6  
FV1206-7  
FV1206-9

### Applicable Case Styles

FV1206-11  
FV1206-12  
GE0805C-18  
NL1008C-6  
NL1008C-7  
NL1008C-9  
NL1008C-10  
NL1008C-12

| Tape Width, mm | Device Cavity Pitch, mm | Reel Size, inches | Devices per Reel                    |      |
|----------------|-------------------------|-------------------|-------------------------------------|------|
| 8              | 4                       | 7                 | Small quantity standards (see note) | 20   |
|                |                         |                   |                                     | 50   |
|                |                         |                   |                                     | 100  |
|                |                         |                   |                                     | 200  |
|                |                         |                   |                                     | 500  |
|                |                         |                   |                                     | 1000 |
|                |                         |                   | Standard                            | 3000 |

Note: Please consult individual model data sheet to determine device per reel availability.

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: [www.minicircuits.com/pages/pdfs/tape.pdf](http://www.minicircuits.com/pages/pdfs/tape.pdf)

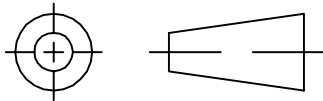


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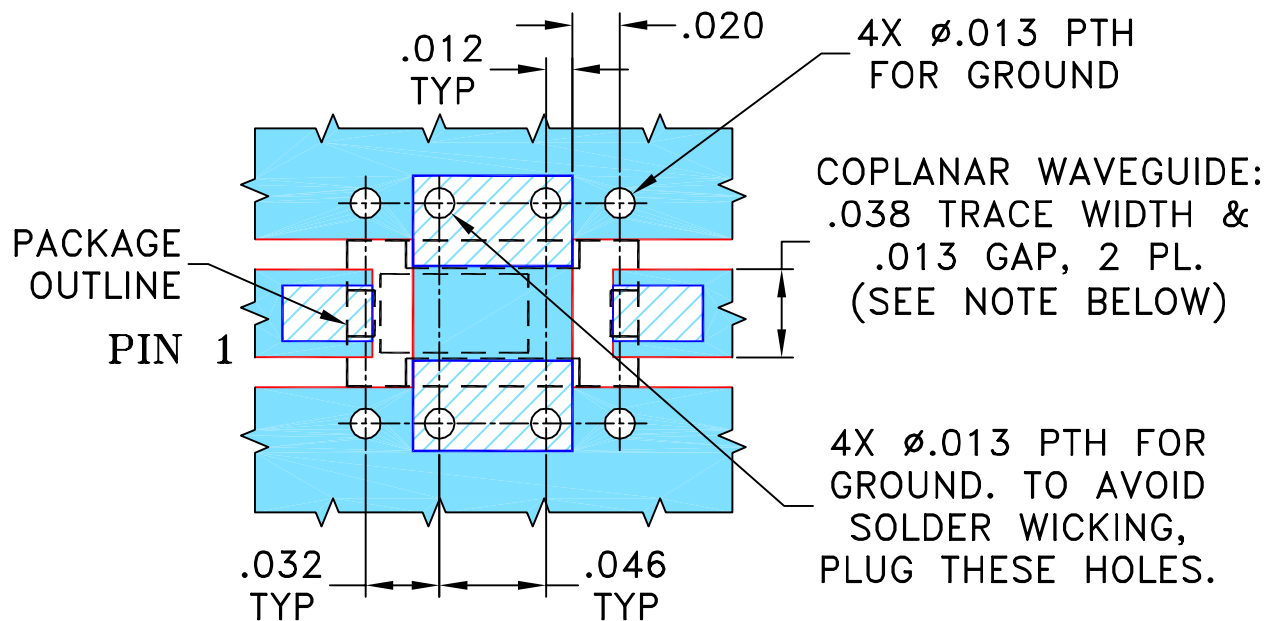
## THIRD ANGLE PROJECTION



## REVISIONS

| REV | ECN No. | DESCRIPTION | DATE     | DR | AUTH |
|-----|---------|-------------|----------|----|------|
| OR  | M123589 | NEW RELEASE | 01/15/09 | AV | ABD  |
|     |         |             |          |    |      |
|     |         |             |          |    |      |

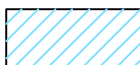
**SUGGESTED MOUNTING CONFIGURATION**  
**FOR FV1206-4 CASE STYLE, "04FL01" PIN CODE**



- NOTE:** 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .020"  $\pm$  .0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. 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 SOLDER MASK

UNLESS OTHERWISE SPECIFIED

INITIALS

DATE

DIMENSIONS ARE IN INCHES

TOLERANCES ON:

2 PL DECIMALS  $\pm$ 3 PL DECIMALS  $\pm$  .005ANGLES  $\pm$ FRACTIONS  $\pm$ 

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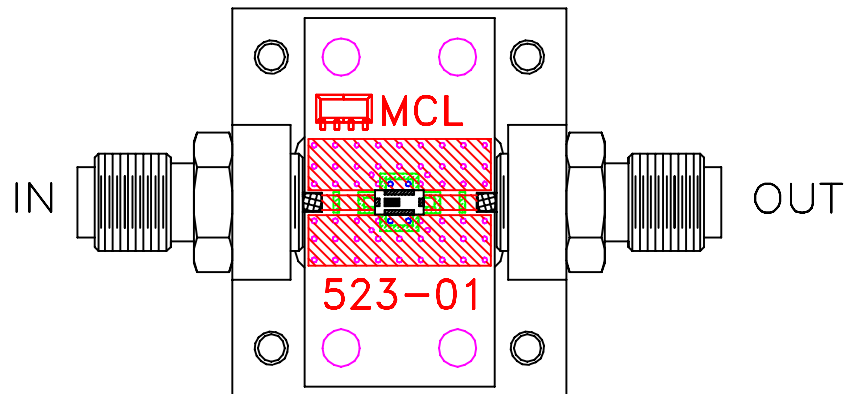
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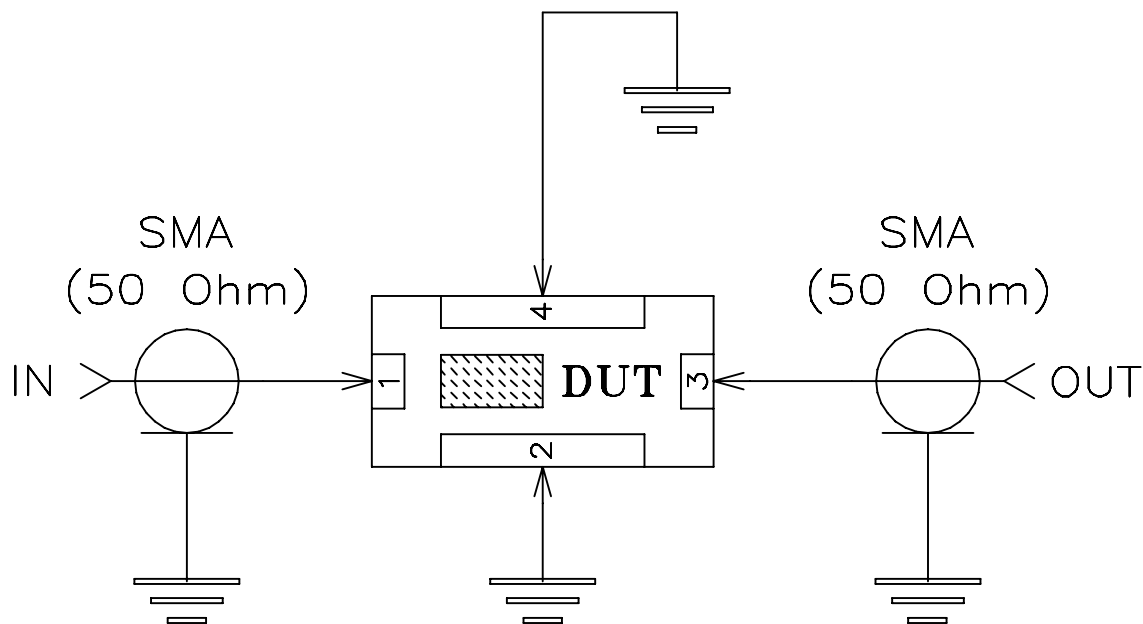
SHEET:

1 OF 1

# Evaluation Board and Circuit



**TB-518+**



Schematic Diagram

## Notes:

1. 50 Ohm SMA Female connectors.
2. PCB Material: R04350 or equivalent,  
Dielectric Constant=3.5, Thickness=.020 inch.

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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                                                                          |
| Humidity                   | 90 to 95% RH, 240 hours, 50°C                                                       | MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours |
| Solder Reflow Heat         | Sn-Pb Eutetic Process: 225°C peak<br>Pb-Free Process 245° - 250°C peak              | J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1                                                        |
| Solderability              | 10X Magnification                                                                   | J-STD-002, Para 4.2.5, Test S, 95% Coverage                                                          |
| 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           | 50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes                   | MIL-STD-202, Method 213, Condition A                                                                 |