



CERAMIC

# High Pass Filter

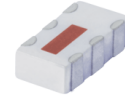
## HFCN-3800D+

Mini-Circuits

50Ω 4250 to 10000 MHz

### THE BIG DEAL

- Small size
- 5 sections
- Temperature stable
- Excellent power handling, 7W
- Hermetically sealed
- LTCC construction
- Low cost
- Protected by US Patent 7,760,485



Generic photo used for illustration purposes only

CASE STYLE: FV1206-1

**+RoHS Compliant**

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

### APPLICATIONS

- Sub-harmonic rejection
- Transmitters/receivers

### ELECTRICAL SPECIFICATIONS<sup>1,2</sup> AT 25°C

| Parameter | Frequency (MHz) | Min.       | Typ. | Max. | Units |
|-----------|-----------------|------------|------|------|-------|
| Stop Band | Rejection Loss  | 2500       | 30   | —    | dB    |
|           |                 | 3200       | 20   | —    |       |
|           | Freq. Cut-Off   | 3800       | —    | 3.0  | dB    |
|           | VSWR            | 2500-3200  | —    | 20   | :1    |
| Pass Band | Insertion Loss  | 4250-10000 | —    | 2.0  | dB    |
|           |                 | 4500-9000  | —    | 1.5  | dB    |
|           | VSWR            | 3950-10000 | —    | 1.5  | :1    |

1. DC Resistance to ground is 100 Mohms min.

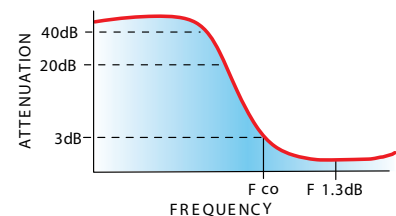
2. Measured on Mini-Circuits Characterization Test Board TB-285.

### MAXIMUM RATINGS

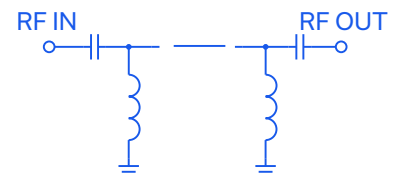
| Parameter                   | Ratings         |
|-----------------------------|-----------------|
| Operating temperature       | -55°C to +100°C |
| Storage temperature         | -55°C to +100°C |
| RF Power Input <sup>3</sup> | 7W max.at 25°C  |
| Max. DC Voltage at pins 1&3 | 25 VDC          |

3. Passband rating, derate linearly to 3W at 100°C ambient. Permanent damage may occur if any of these limits are exceeded.

### TYPICAL FREQUENCY RESPONSE



### FUNCTIONAL SCHEMATIC



REV. E  
ECO-012367  
HFCN-3800D+  
RAV/CP/AM  
220308





### PIN CONNECTIONS

|        |         |
|--------|---------|
| RF IN  | 1       |
| RF OUT | 3       |
| GROUND | 2,4,5,6 |

PRODUCT MARKING: N/A

DEMO BOARD MCL P/N: TB-285  
SUGGESTED PCB LAYOUT (PL-158)

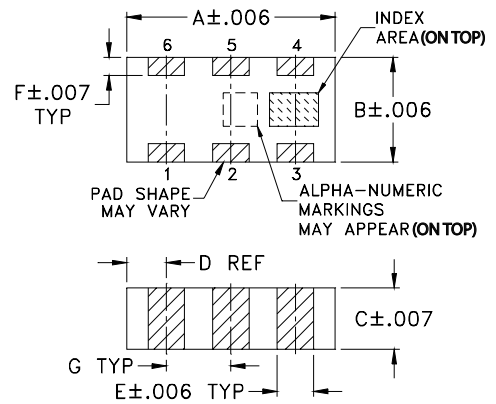


**NOTE:** 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350 WITH DIELECTRIC THICKNESS:  $.020 \pm .0015$ ; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

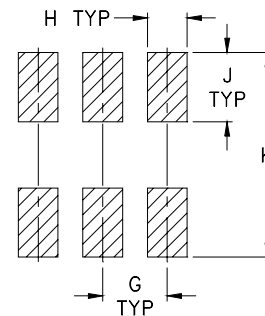
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT
- DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

### OUTLINE DRAWING



### PCB Land Pattern



Suggested Layout,  
Tolerance to be within  $\pm .002$

### OUTLINE DIMENSIONS (Inches mm)

|      |      |      |      |      |       |
|------|------|------|------|------|-------|
| A    | B    | C    | D    | E    | F     |
| .126 | .063 | .035 | .024 | .022 | .011  |
| 3.20 | 1.60 | 0.89 | 0.61 | 0.56 | 0.28  |
| G    | H    | J    | K    |      | wt    |
| .039 | .024 | .042 | .123 |      | grams |
| 0.99 | 0.61 | 1.07 | 3.12 |      | .020  |

### TAPE & REEL INFORMATION: F75



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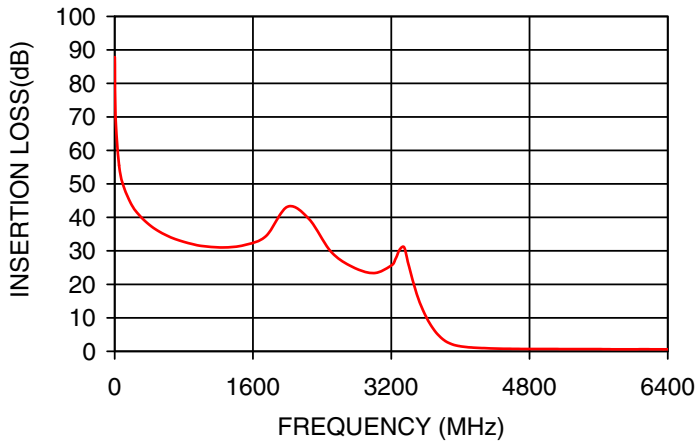
# High Pass Filter

## HFCN-3800D+

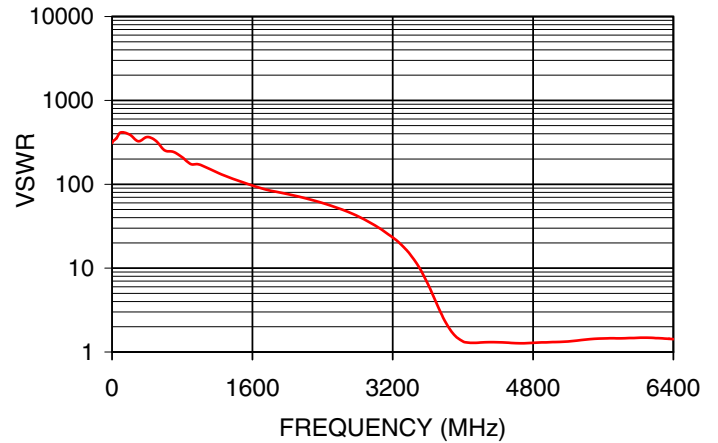
### TYPICAL PERFORMANCE DATA AT 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 50.00           | 55.55               | 352.78    |
| 500.00          | 36.00               | 329.74    |
| 1500.00         | 31.71               | 104.95    |
| 3200.00         | 25.64               | 23.24     |
| 3400.00         | 25.91               | 14.49     |
| 3500.00         | 16.74               | 10.30     |
| 3800.00         | 3.55                | 2.30      |
| 4000.00         | 1.50                | 1.34      |
| 4250.00         | 0.97                | 1.31      |
| 4500.00         | 0.78                | 1.29      |
| 5000.00         | 0.70                | 1.31      |
| 5500.00         | 0.66                | 1.44      |
| 6000.00         | 0.61                | 1.48      |
| 6400.00         | 0.59                | 1.42      |

INSERTION LOSS



VSWR



#### 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.
- 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](http://www.minicircuits.com/MCLStore/terms.jsp)

