



CERAMIC

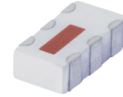
# High Pass Filter

## HFCN-3100+

50Ω 3400 to 9900 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 |
|           |                 | 2450       | 20   | —    | —     |    |
|           | Freq. Cut-Off   | 3100       | —    | 3.0  | —     | dB |
|           | VSWR            | 2450-2500  | —    | 20   | —     | :1 |
| Pass Band | Insertion Loss  | 3400-9900  | —    | —    | 2.0   | dB |
|           |                 | 3500-9500  | —    | —    | 1.5   | dB |
|           | VSWR            | 3100-10500 | —    | 1.5  | —     | :1 |

1. In Application where DC voltage is present at either input or output ports, coupling capacitors are required. Alternatively, Mini-Circuits' "D" suffix version of this model will provide >100 MOhm isolation to ground.

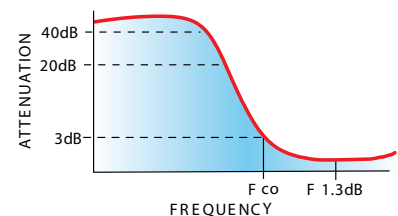
2. Measured on Mini-Circuits Characterization Test Board TB-285.

### MAXIMUM RATINGS

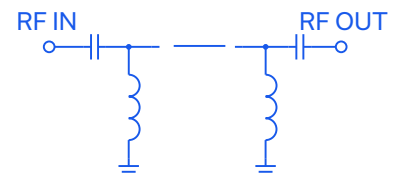
| Parameter                   | Ratings          |
|-----------------------------|------------------|
| Operating temperature       | -55°C to 100°C   |
| Storage temperature         | -55°C to 100°C   |
| RF Power Input <sup>3</sup> | 7 W max. at 25°C |

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. F  
ECO-012367  
HFCN-3100+  
RAV/CP/AM  
220308



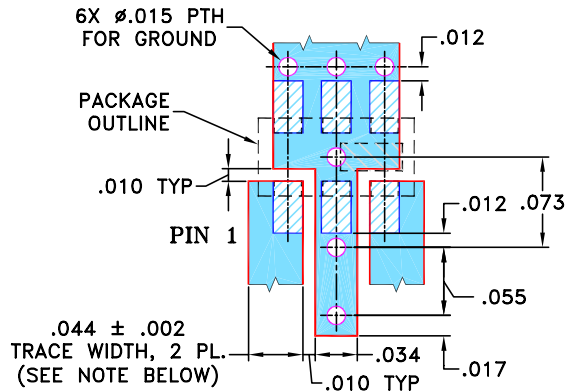


### PIN CONNECTIONS

|        |         |
|--------|---------|
| 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.

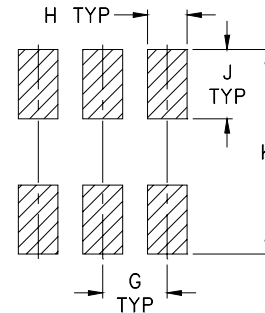
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- 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



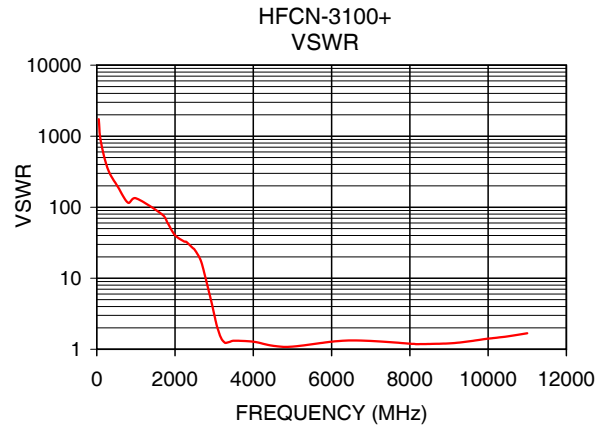
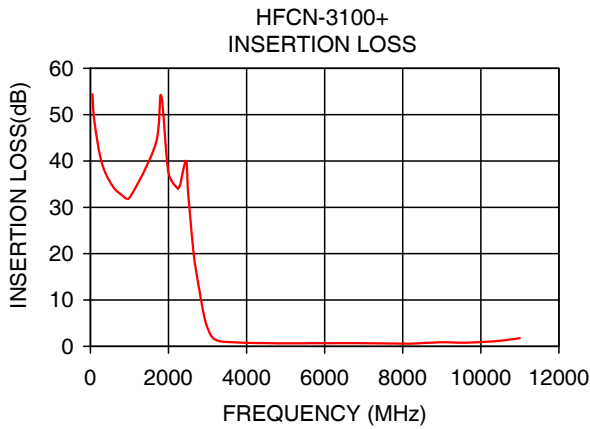
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# High Pass Filter

## HFCN-3100+

### TYPICAL PERFORMANCE DATA AT 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 50              | 54.41               | 1737.18   |
| 800             | 32.66               | 115.81    |
| 1810            | 54.18               | 59.91     |
| 2450            | 40.03               | 26.74     |
| 2500            | 33.38               | 25.19     |
| 2700            | 16.65               | 15.00     |
| 2920            | 6.20                | 4.89      |
| 3100            | 2.22                | 1.87      |
| 3400            | 1.01                | 1.27      |
| 3500            | 0.94                | 1.32      |
| 5000            | 0.66                | 1.09      |
| 7000            | 0.68                | 1.31      |
| 9000            | 0.88                | 1.21      |
| 9500            | 0.78                | 1.29      |
| 9900            | 0.88                | 1.39      |
| 10500           | 1.21                | 1.52      |
| 11000           | 1.76                | 1.68      |



#### 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)

