



CERAMIC

# High Pass Filter

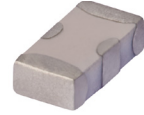
## HFCN-1600+

Mini-Circuits

50Ω 1650 to 5000 MHz

### THE BIG DEAL

- Small size
- 7 sections
- Temperature stable
- Excellent power handling, 7W
- Hermetically sealed
- LTCC construction
- Low cost



Generic photo used for illustration purposes only

CASE STYLE: FV1206

### +RoHS Compliant

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

### APPLICATIONS

- Sub-harmonic rejection
- Transmitters/receivers
- Lab use

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

| Parameter | Frequency (MHz) | Min.      | Typ.      | Max. | Units |
|-----------|-----------------|-----------|-----------|------|-------|
| Stop Band | Rejection Loss  | 1090      | 40        | —    | dB    |
|           |                 | 1290      | 20        | —    |       |
|           | Freq. Cut-Off   | 1600      | —         | 3.0  | dB    |
|           |                 | VSWR      | 1090-1290 | —    |       |
| Pass Band | Insertion Loss  | 1650-5000 | —         | 2.0  | dB    |
|           |                 | 1950-4000 | —         | 1.3  |       |
|           | VSWR            | 1700-4000 | —         | 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.

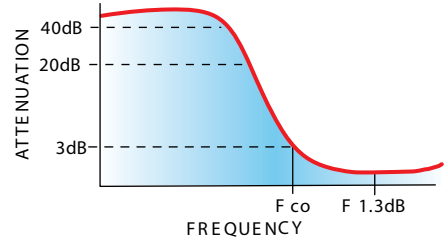
2. Measured on Mini-Circuits Characterization Test Board TB-270.

### MAXIMUM RATINGS

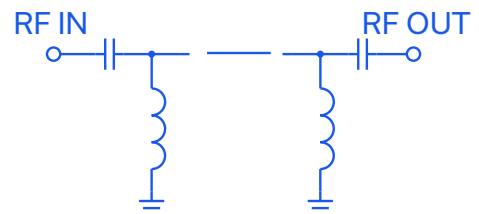
| Parameter                   | Ratings          |
|-----------------------------|------------------|
| Operating temperature       | -55°C to 100°C   |
| Storage temperature         | -55°C to 100°C   |
| RF Power Input <sup>3</sup> | 7 W max. at 25°C |

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. L  
ECO-011980  
HFCN-1600+  
RVN/AD/CP/AM  
220221



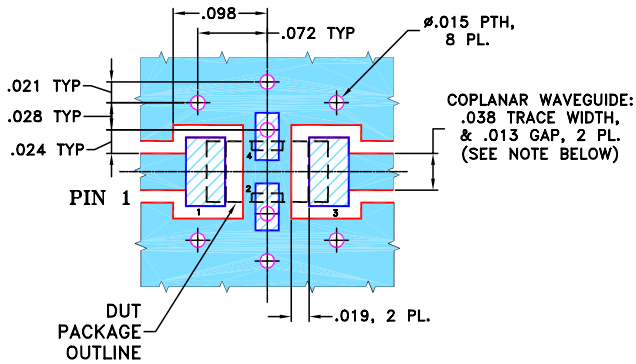


### PIN CONNECTIONS

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

PRODUCT MARKING: N/A

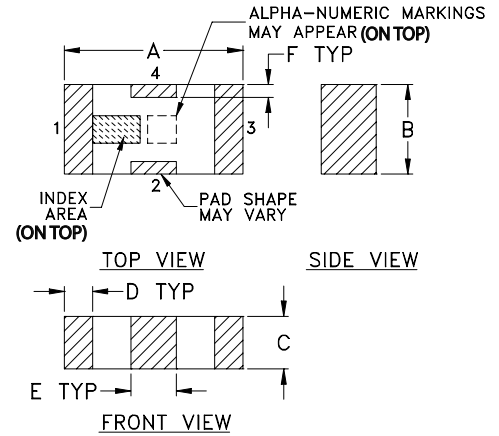
DEMO BOARD MCL P/N: TB-270  
SUGGESTED PCB LAYOUT (PL-137)



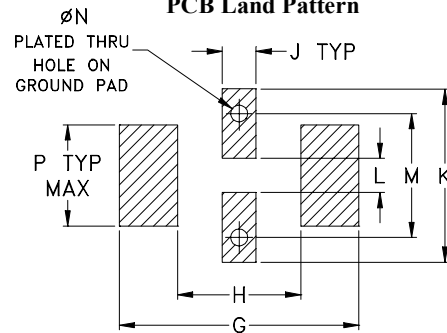
- NOTES:**
1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH THICKNESS .020" ± .0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
  2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

### OUTLINE DRAWING



### PCB Land Pattern



Suggested Layout,  
Tolerance to be within ±.002

### OUTLINE DIMENSIONS (Inches mm)

| A    | B    | C    | D    | E    | F    | G    |
|------|------|------|------|------|------|------|
| .126 | .063 | .037 | .020 | .032 | .009 | .169 |
| 3.20 | 1.60 | 0.94 | 0.51 | 0.81 | 0.23 | 4.29 |

| H    | J    | K    | L    | M    | N    | P    | wt    |
|------|------|------|------|------|------|------|-------|
| .087 | .024 | .122 | .024 | .087 | .012 | .071 | grams |
| 2.21 | 0.61 | 3.10 | 0.61 | 2.21 | 0.30 | 1.80 | .020  |

### TAPE & REEL INFORMATION: F71



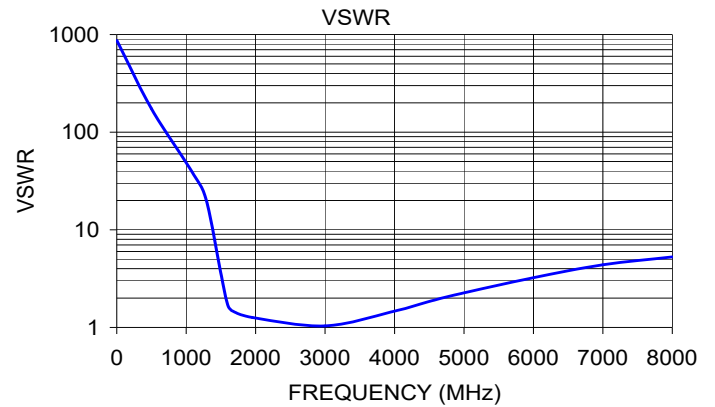
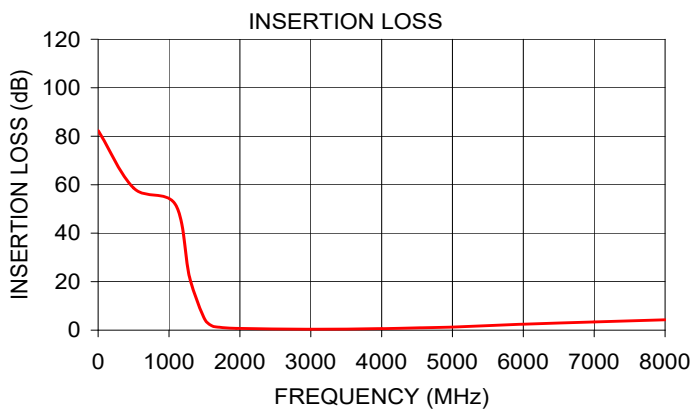
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## HFCN-1600+

### TYPICAL PERFORMANCE DATA AT 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 1.00            | 82.28               | 868.59    |
| 500.00          | 58.67               | 173.72    |
| 1090.00         | 51.85               | 38.61     |
| 1290.00         | 21.92               | 19.98     |
| 1500.00         | 4.72                | 3.58      |
| 1600.00         | 1.87                | 1.68      |
| 1700.00         | 1.22                | 1.43      |
| 1950.00         | 0.72                | 1.27      |
| 3000.00         | 0.40                | 1.04      |
| 4000.00         | 0.62                | 1.47      |
| 4540.00         | 0.97                | 1.88      |
| 5000.00         | 1.30                | 2.26      |
| 6000.00         | 2.45                | 3.24      |
| 7000.00         | 3.41                | 4.39      |
| 8000.00         | 4.26                | 5.28      |



#### 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)

