



Mini-Circuits®

CERAMIC

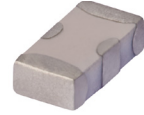
## High Pass Filter

HFCN-1600D+

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 | 20   | —    |       |
| Pass Band | Insertion Loss  | 1650-5000 | 2.0  | —    | dB    |
|           |                 | 1950-4000 | —    | 1.3  |       |
|           | VSWR            | 1700-4000 | 1.5  | —    | :1    |

<sup>1</sup>. DC Resistance to ground is 100 Mohms min.<sup>2</sup>. Measured on Mini-Circuits Characterization Test Board TB-270.

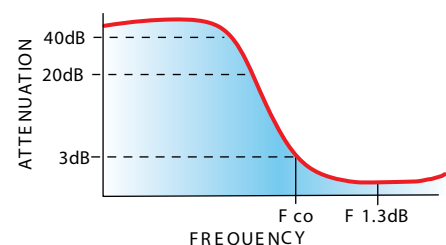
## MAXIMUM RATINGS

| 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 |
| Max. DC Voltage at pins 1&3 | 25 VDC           |

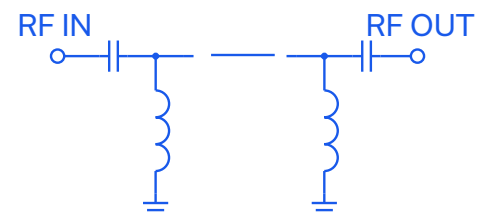
<sup>3</sup>. Derate linearly to 3W at 100°C ambient.

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

## TYPICAL FREQUENCY RESPONSE



## FUNCTIONAL SCHEMATIC



REV. C  
ECO-011980  
HFCN-1600D+  
AD/CP/AM  
220221





Mini-Circuits®

CERAMIC

## High Pass Filter

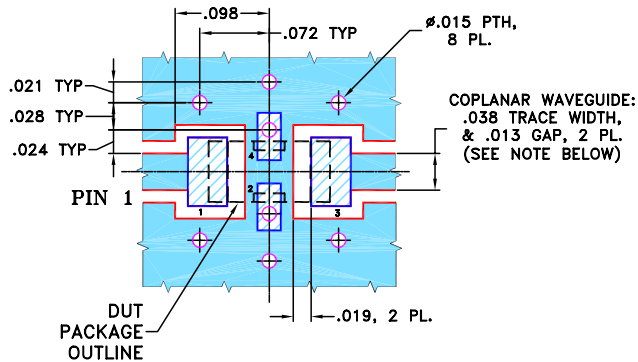
HFCN-1600D+

## 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)



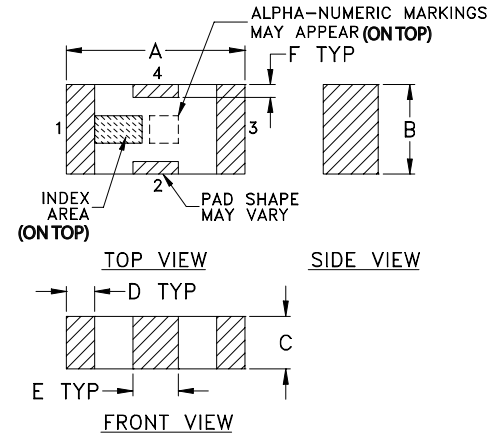
**NOTES:** 1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH THICKNESS .020"  $\pm$  .0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.

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

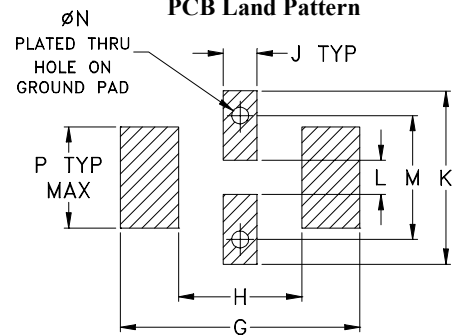
 DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

## OUTLINE DRAWING



## PCB Land Pattern



Suggested Layout,  
Tolerance to be within  $\pm 0.002$

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 &amp; REEL INFORMATION: F71



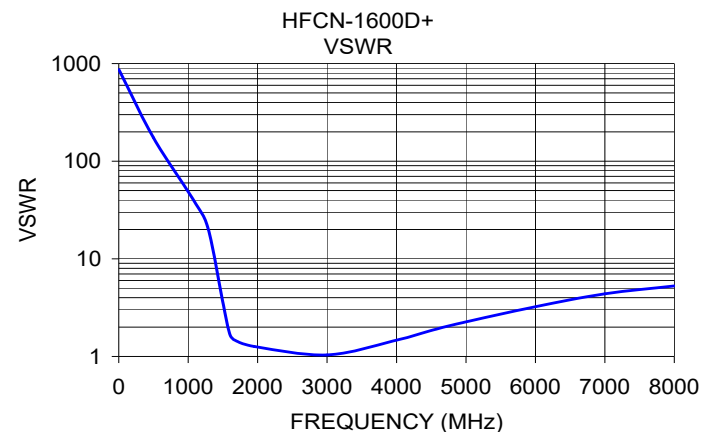
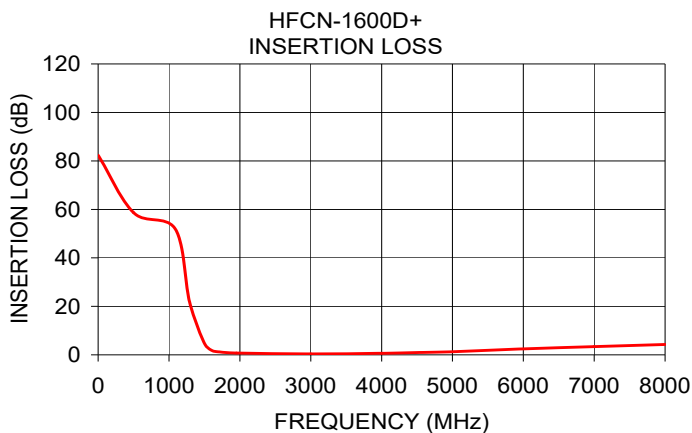
CERAMIC

# High Pass Filter

**HFCN-1600D+**

## 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

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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)

