# LTCC High Pass Filter HFCN-1080+

50Ω 1140 to 4240 MHz

## The Big Deal

- Small size 3.2mm x 1.6mm
- Pass band (1140-4240 MHz)
- Low Insertion Loss (2.0 dB typical)
- Sharp rejection peaks close to stop band

CASE STYLE: FV1206

## Product Overview

The HFCN-1080+ LTCC High Pass Filter is constructed with 12 layers in order to achieve a miniature size and high repeatability of performance. Wrap-around terminations minimize variations in performance due to parasitics. Covering 1140-4240 MHz, these units offer low insertion loss and good rejection.

## Key Features

| Feature | Advantages |
|---|---|
| Small Size (3.20mm x1.6 mm) | Allows for high layout density of circuit boards, while minimizing affects of parasitics. |
| Rejection peaks at harmonic frequencies | Provides good rejection of signals at harmonic frequencies, for improved system performance. |
| Wrap around termination | Provides excellent solderability and easy visual inspection capability. |
| LTCC construction | Provides a rugged package that is well suited for tough environments including high humidity and high temperature extremes. |

*Ceramic*

# High Pass Filter

## HFCN-1080+

50Ω 1140 to 4240 MHz

CASE STYLE: FV1206
PRICE: $1.99 ea. QTY (20)

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

*Available Tape and Reel at no extra cost*

| Reel Size | Devices/Reel |
|---|---|
| 7" | 20, 50, 100, 200, 500,1000, 3000 |

### Maximum Ratings

| | |
|---|---|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature | -55°C to 100°C |
| RF Power Input* | 7W max. at 25°C |

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

### Pin Connections

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

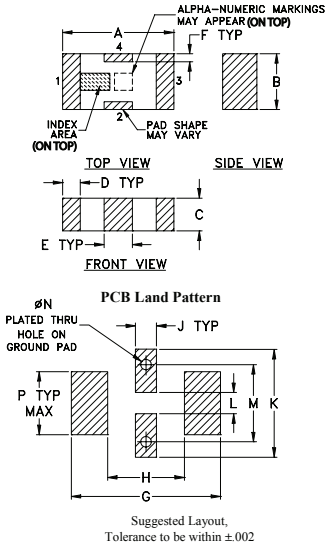
### Features

- low cost
- small size
- 7 sections
- temperature stable
- dc block in/out, breakdown voltage, 1kV typ.
- excellent power handling, 7W
- hermetically sealed

### Applications

- sub-harmonic rejection
- transmitters/receivers
- lab use

### Outline Drawing



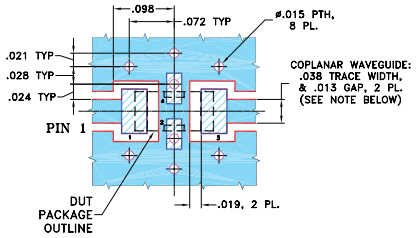

Suggested Layout,
Tolerance to be within ±.002

### Outline Dimensions (inch / 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 |

### *Demo Board MCL P/N: TB-270*
### *Suggested PCB Layout (PL-137)*



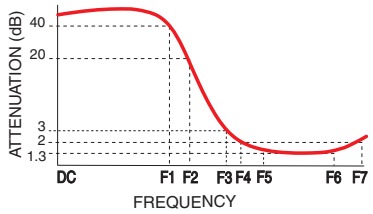

NOTES: 1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH THICKNESS .020" ± .0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

### Electrical Specifications[1,2] at 25°C

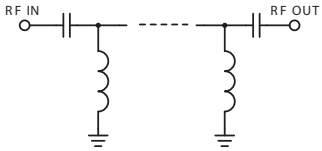
| Parameter | | F# | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| Stop Band | Rejection Loss | DC-F1 | DC-600 | 40 | — | — | dB |
| | | F1-F2 | DC-700 | 20 | — | — | dB |
| | Freq. Cut-Off | F3 | 1080 | — | 3.0 | — | dB |
| | VSWR | DC-F2 | DC-780 | — | 20 | — | :1 |
| Pass Band | Insertion Loss | F4-F7 | 1140-4240 | — | — | 2.0 | dB |
| | | F5-F6 | 1250-3730 | — | — | 1.4 | dB |
| | VSWR | F4-F7 | 1140-4240 | — | 2.0 | — | :1 |

*(1) In Application where DC voltage is present at either input or output ports, coupling capacitors are required.*
*(2) Measured on Mini-Circuits Characterization Test Board TB-270.*

### Typical Frequency Response

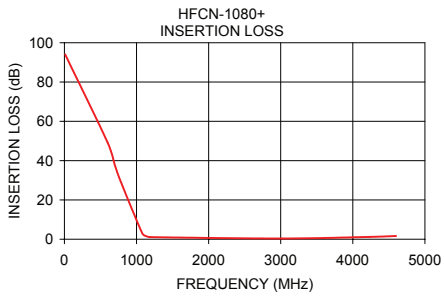


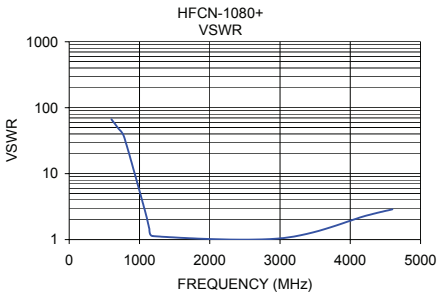

### Electrical Schematic




### Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|---|---|---|
| 10.0 | 94.10 | 0.00 |
| 600.0 | 49.17 | 66.82 |
| 700.0 | 37.65 | 48.26 |
| 780.0 | 29.42 | 36.20 |
| 1080.0 | 3.02 | 2.68 |
| 1140.0 | 1.49 | 1.46 |
| 1190.0 | 1.08 | 1.13 |
| 3010.0 | 0.35 | 1.05 |
| 4240.0 | 1.18 | 2.33 |
| 4600.0 | 1.64 | 2.88 |




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

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