



CERAMIC

# High Pass Filter

## HFCN-440+

Mini-Circuits

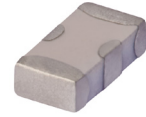
50Ω 500 to 2500 MHz

### THE BIG DEAL

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

### APPLICATIONS

- Sub-harmonic rejection
- Transmitters/receivers
- Military



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

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

| Parameter | Frequency (MHz) | Min.     | Typ. | Max. | Units |    |
|-----------|-----------------|----------|------|------|-------|----|
| Stop Band | Rejection Loss  | 230      | 40   | —    | —     | dB |
|           |                 | 350      | 20   | —    | —     |    |
|           | Freq. Cut-Off   | 440      | —    | 3.0  | —     | dB |
|           | VSWR            | 230-350  | —    | 20   | —     | :1 |
| Pass Band | Insertion Loss  | 500-2500 | —    | —    | 2.0   | dB |
|           |                 | 600-1700 | —    | —    | 1.3   | dB |
|           | VSWR            | 500-1700 | —    | 1.5  | —     | :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.

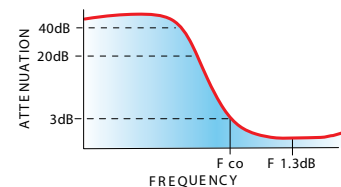
### MAXIMUM RATINGS

| 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  |

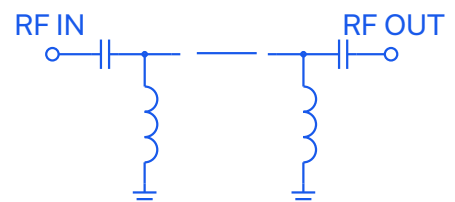
3. Passband rating, derate linearly to 3W at 100°C ambient.

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

### TYPICAL FREQUENCY RESPONSE



### FUNCTIONAL SCHEMATIC



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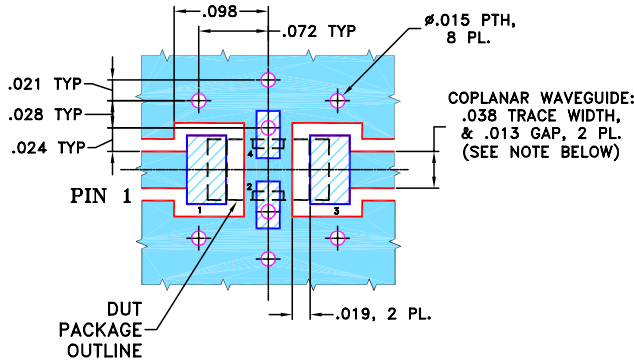


### PIN CONNECTIONS

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

PRODUCT MARKING: N/A

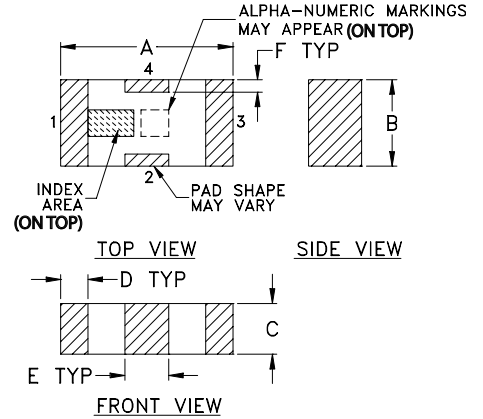
DEMO BOARD MCL P/N: TB-270  
SUGGESTED PCB LAYOUT (PL-137)



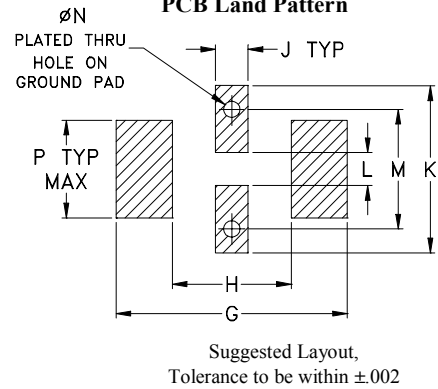
- NOTES:**
1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH THICKNESS .020" ± .0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
  2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

### OUTLINE DRAWING



### PCB Land Pattern



### 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



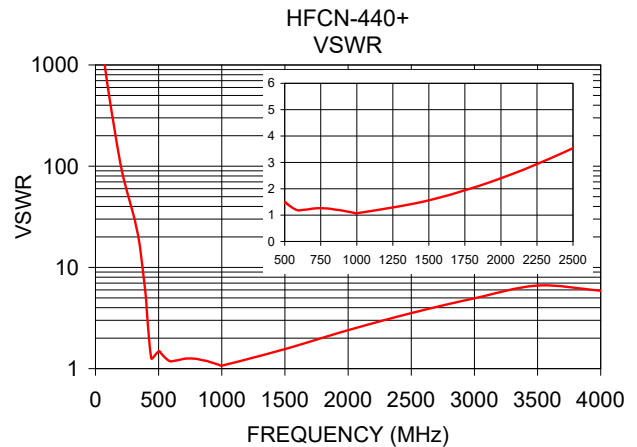
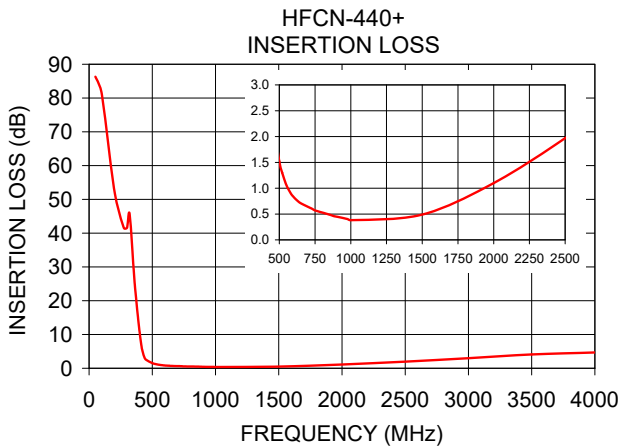
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# High Pass Filter

## HFCN-440+

### TYPICAL PERFORMANCE DATA AT 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR :1 |
|-----------------|---------------------|---------|
| 50              | 86.32               | 1737.18 |
| 100             | 81.31               | 579.06  |
| 230             | 46.84               | 75.53   |
| 350             | 30.62               | 16.72   |
| 385             | 15.56               | 7.73    |
| 410             | 7.73                | 3.29    |
| 440             | 3.08                | 1.29    |
| 450             | 2.53                | 1.26    |
| 500             | 1.52                | 1.48    |
| 510             | 1.40                | 1.45    |
| 600             | 0.83                | 1.18    |
| 800             | 0.53                | 1.25    |
| 1000            | 0.38                | 1.07    |
| 1500            | 0.49                | 1.56    |
| 1700            | 0.70                | 1.87    |
| 2500            | 1.97                | 3.54    |
| 4000            | 4.69                | 5.89    |



#### 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)

