



CERAMIC

High Pass Filter

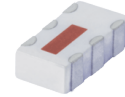
HFCN-8400D+

Mini-Circuits

50Ω 9000 to 13000 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^{1,2} AT 25°C

| Parameter | Frequency (MHz) | Min. | Typ. | Max. | Units |
|-----------|-----------------|------------|------|------|-------|
| Stop Band | Rejection Loss | 5700 | — | 30 | dB |
| | | 6000 | 20 | — | |
| | Freq. Cut-Off | 8400 | — | 3.0 | dB |
| | VSWR | 5700-6000 | — | 20 | :1 |
| Pass Band | Insertion Loss | 9000-13000 | — | 3.0 | dB |
| | | 9500-13000 | — | 2.5 | dB |
| | VSWR | 9000-13000 | — | 1.5 | :1 |

1. DC Resistance to ground is 100 Mohms min.

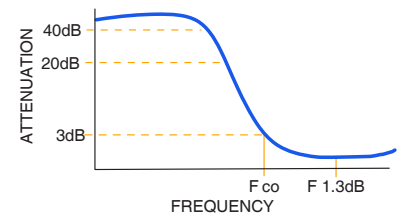
2. Measured on Mini-Circuits Characterization Test Board TB-285.

MAXIMUM RATINGS

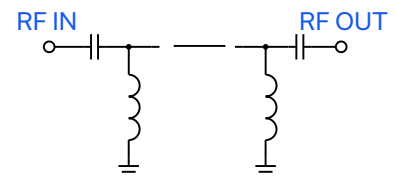
| Parameter | Ratings |
|-----------------------------|-----------------|
| Operating temperature | -55°C to +100°C |
| Storage temperature | -55°C to +100°C |
| RF Power Input ³ | 7W max.at 25°C |
| Max. DC Voltage at pins 1&3 | 25 VDC |

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. C
ECO-012367
HFCN-8400D+
RAV/CP/AM
230822





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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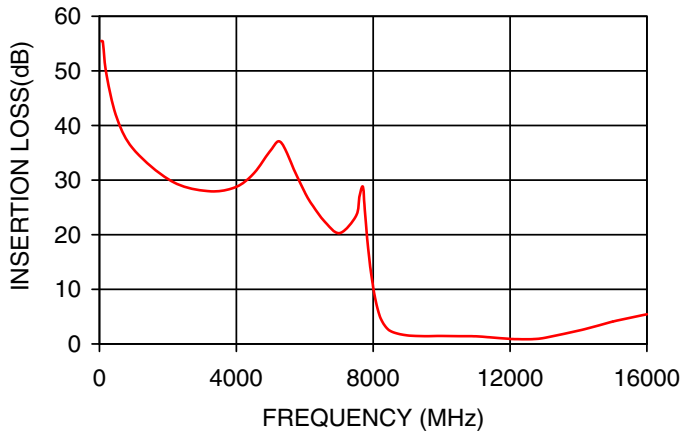
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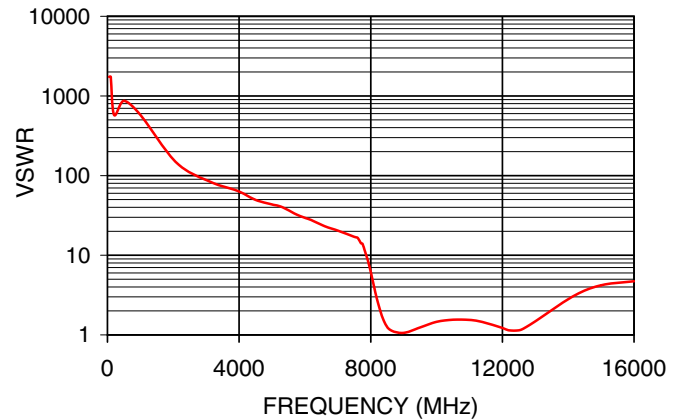
TYPICAL PERFORMANCE DATA AT 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 50 | 55.48 | 1737.18 |
| 500 | 41.57 | 868.59 |
| 4500 | 31.17 | 49.64 |
| 5700 | 36.69 | 31.60 |
| 6000 | 27.78 | 29.46 |
| 7500 | 23.46 | 17.05 |
| 8020 | 9.65 | 5.68 |
| 8400 | 2.88 | 1.50 |
| 8600 | 2.11 | 1.15 |
| 9000 | 1.57 | 1.06 |
| 9500 | 1.43 | 1.24 |
| 10000 | 1.47 | 1.46 |
| 12000 | 0.92 | 1.22 |
| 13000 | 1.10 | 1.48 |
| 16000 | 5.43 | 4.72 |

HFCN-8400D+
INSERTION LOSS



HFCN-8400D+
VSWR



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

