



CERAMIC

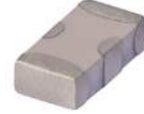
High Pass Filter

HFCN-650D+

50Ω 710 to 2490 MHz

THE BIG DEAL

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



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^{1,2} AT 25°C

| Parameter | Frequency (MHz) | Min. | Typ. | Max. | Units | |
|-----------|-----------------|----------|------|------|-------|----|
| Stop Band | Rejection Loss | 390 | 40 | — | — | dB |
| | | 480 | 20 | — | — | |
| | Freq. Cut-Off | 650 | — | 3.0 | — | dB |
| | VSWR | 390-480 | — | 20 | — | :1 |
| Pass Band | Insertion Loss | 710-2490 | — | 2.0 | — | dB |
| | | 850-2000 | — | — | 1.3 | dB |
| | VSWR | 760-1700 | — | 1.5 | — | :1 |

1. DC Resistance to ground is 100 Mohms min..

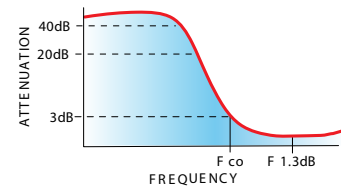
2. Measured on Mini-Circuits Characterization Test Board TB-270.

MAXIMUM RATINGS

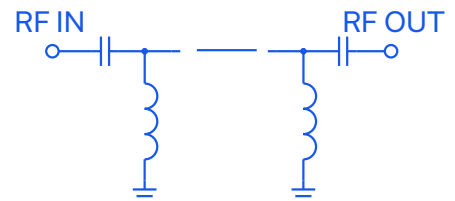
| Parameter | Ratings |
|-----------------------------|-----------------|
| Operating temperature | -55°C to +100°C |
| Storage temperature | -55°C to +100°C |
| RF Power Input ³ | 7W max.at 25°C |
| Max. DC Voltage at pins 1&3 | 25 VDC |

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





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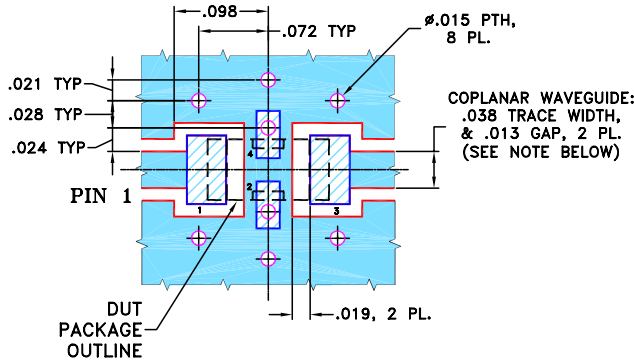
HFCN-650D+

PIN CONNECTIONS

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

PRODUCT MARKING: N/A

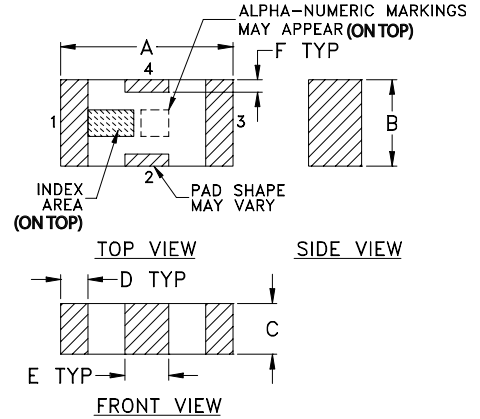
DEMO BOARD MCL P/N: TB-270
SUGGESTED PCB LAYOUT (PL-137)



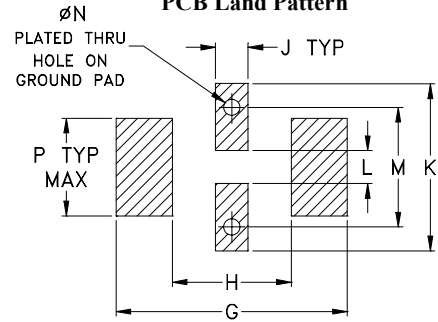
- NOTES:**
1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH THICKNESS .020" ± .0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
 2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- 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



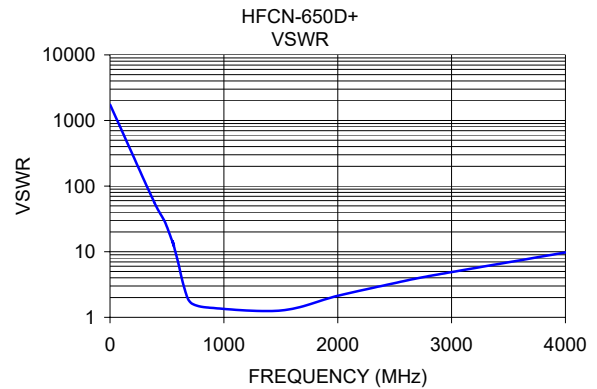
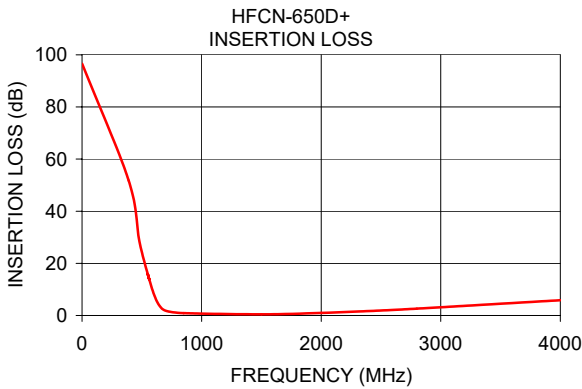
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TYPICAL PERFORMANCE DATA AT 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR :1 |
|-----------------|---------------------|---------|
| 1.00 | 96.55 | 1737.18 |
| 390.00 | 51.73 | 56.04 |
| 480.00 | 28.47 | 28.96 |
| 560.00 | 14.13 | 12.44 |
| 550.00 | 15.77 | 14.26 |
| 600.00 | 8.26 | 6.63 |
| 650.00 | 3.61 | 2.89 |
| 710.00 | 1.66 | 1.66 |
| 850.00 | 0.90 | 1.42 |
| 1500.00 | 0.44 | 1.27 |
| 2000.00 | 0.99 | 2.13 |
| 2490.00 | 1.89 | 3.29 |
| 2800.00 | 2.61 | 4.25 |
| 4000.00 | 5.86 | 9.74 |



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

