Ceramic

High Pass Filter

HFCN-672+

50Ω 6700 to 13000 MHz

CASE STYLE: FV1206-1

The Big Deal

- Rugged ceramic construction
- 7W Power Handling
- Tiny size (0.12 x 0.06 X .04”)
- Temperature stable from -55 to +100°C

Product Overview

The HFCN-672+ is an LTCC high pass filter with a wide passband from the 6700 to 13000 MHz. This model provides 2.0 dB passband insertion loss and 27 dB stopband rejection, and is capable of handling up to 7W RF input power. Utilizing LTCC multi-layer construction, the filter achieves excellent repeatability of performance and comes in a tiny 1206 ceramic package with wraparound terminations, minimizing performance variations due to parasitics and saving space in dense PCB layouts. The unit has an operating temperature range from -55 to +100°C, and its rugged, ceramic construction provides makes it an excellent candidate for harsh operating environments..

Key Features

Feature	Advantages
LTCC Construction	Provides repeatable performance in a rugged, ceramic package well suited for tough environments such as high humidity and temperature extremes.
Tiny size (0.12 x 0.06 x .04”)	Saves space in dense circuit board layouts and minimizes the effects of parasitics.
Wrap-around terminations	Provides excellent solderability and easy visual inspection
Wide operating temperature range, -55 to +100°C	Enables reliable performance in extreme environments

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+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

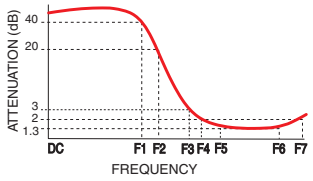
Features

- Low cost
- Small size
- Temperature stable
- Excellent power handling, 7W
- Hermetically sealed
- LTCC construction
- Protected by US Patent 7,760,485

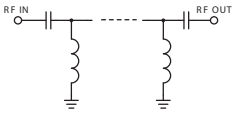
Applications

- Point-to-point radio
- Sub-harmonic rejection
- Transmitters / receivers

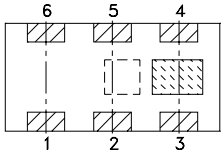
Specification Definition



Functional Schematic



Top View



Pad Connections

Input	1
Output	3
Ground	2,4,5,6

Electrical Specifications[1,2] at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Stop Band	Rejection Loss	DC-F1	DC-4435	27	32	—	dB
		F1-F2	4435-5500	16	27	—	dB
	Freq. Cut-Off[3]	F3	6275	—	3.0	—	dB
	VSWR	DC-F2	DC-5500	—	30	—	:1
Pass Band	Insertion Loss	F4-F7	6700-13000	—	2.0	4.0	dB
		F5-F6	6900-12770	—	2.0	3.5	dB
	VSWR	F4-F7	6700-13000	—	1.9	—	: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-285.
(3) Referenced to mid-band insertion loss, 0.5 dB typ.

Maximum Ratings

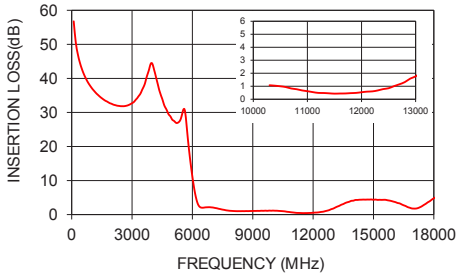
Operating Temperature	-55°C to +100°C
Storage Temperature	-55°C to +100°C
RF Power Input*	7W at 25°C

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

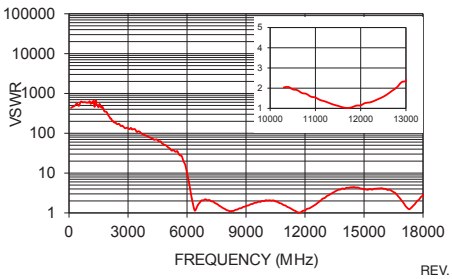
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
100	56.76	435.00
500	42.89	487.79
1000	37.15	591.02
2700	31.94	156.03
3000	32.72	134.81
4400	35.68	69.56
5500	29.76	35.88
6000	11.10	10.02
6700	2.14	1.97
7550	1.41	1.65
9100	1.07	1.53
9700	1.11	1.89
11500	0.43	1.13
13000	1.76	2.36
15000	4.35	3.90
16500	2.73	3.34
17000	1.77	1.81
17100	1.77	1.52

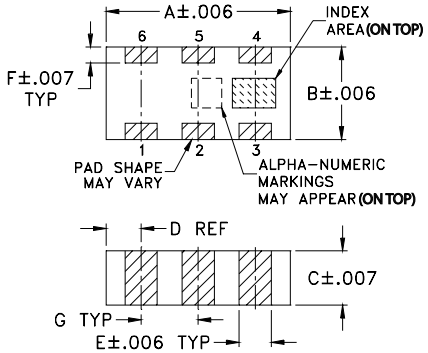
HFCN-672+
INSERTION LOSS



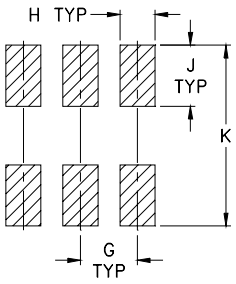
HFCN-672+
VSWR



Outline Drawing

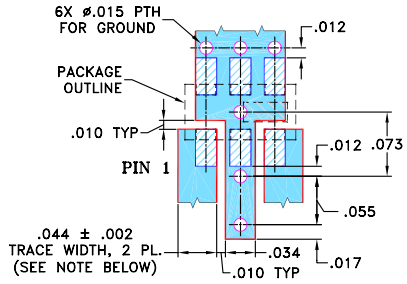


PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

Demo Board MCL P/N: TB-285
Suggested PCB Layout (PL-158)



NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS: .020 ± .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

Pad Connections

Input	1
Output	3
Ground	2,4,5,6

Product Marking: FG

Outline Dimensions (inch / 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

Additional 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