

HFCN-1000AT+

THE BIG DEAL

- Low cost
- Small size
- 7 sections
- Temperature stable
- DC block in/out, breakdown voltage, 1kV typ.
- · Excellent power handling, 7W
- · Hermetically sealed
- · AEC-Q200 qualified component family



Generic photo used for illustration purposes only

CASE STYLE: FV1206

+RoHS CompliantThe +Suffix identifies RoHS Compliance.
See our website for methodologies and qualifications

APPLICATIONS

Automotive

PRODUCT OVERVIEW

The HFCN-1000AT+ 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 1080-4000 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.

REV. OR NPO-005300 HFCN-1000AT+ MCL NY 250606



CERAMIC High Pass Filter

HFCN-1000AT+

ELECTRICAL SPECIFICATIONS 1,2 AT +25°C

Parameter		F#	Frequency (MHz)	Min.	Тур.	Max.	Units
Stop Band	Dejection Loss	DC-F1	DC-570	40	_	_	dB
	Rejection Loss	F1-F2	DC-740	20	_	_	иь
	Freq. Cut-Off	F3	1000	_	3.0	_	dB
	VSWR	DC-F2	DC-740	_	20	_	:1
	Insertion Loss	F4-F7	1080-4000	_	_	2.0	dB
Pass Band	insertion Loss	F5-F6	1150-3700	_	_	1.4	dB
	VSWR	F4-F7	1080-4000	_	1.5	_	:1

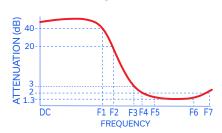
In Application where DC voltage is present at either input or output ports, coupling capacitors are required.
 Measured on Mini-Circuits Characterization Test Board TB-270 using HFCN-1000+.

ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-40°C to +105°C
Storage Temperature	-40°C to +105°C
RF Power Input ³	7W max. at +25°C

3. Passband rating, derate linearly to 3W at +105°C ambient. Permanent damage may occur if any of these limits are exceeded.

TYPICAL FREQUENCY RESPONSE



FUNCTIONAL SCHEMATIC



High Pass Filter

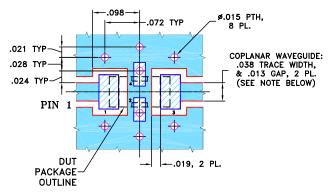
HFCN-1000AT+

PIN CONNECTIONS

RF IN	1
RF OUT	3
GROUND	2,4

PRODUCT MARKING: A5

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.

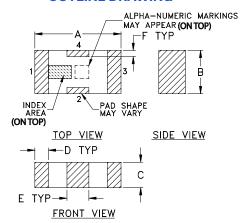
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

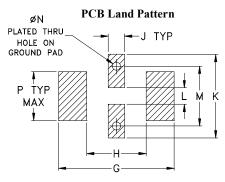
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DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

OUTLINE DRAWING





Suggested Layout, Tolerance to be within ±.002

OUTLINE DIMENSIONS (Inches)

	G	F	Е	D	С	В	Α
	.169	.009	.032	.020	.037	.063	.126
	4.29	0.23	0.81	0.51	0.94	1.60	3.20
wt	Р	N	M	L	K	J	Н
wt grams		N .012		.024	.122	J .024	H .087
	.071	.012	.087	.024		.024	

TAPE & REEL INFORMATION: F71



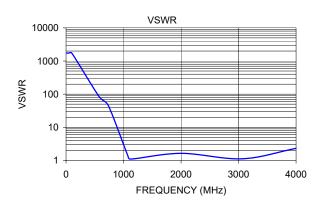
High Pass Filter

HFCN-1000AT+

TYPICAL PERFORMANCE DATA AT +25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10.0	89.53	1737.18
50.0	77.22	1737.18
100.0	71.42	1737.18
570.0	50.83	86.86
740.0	30.15	43.44
1070.0	1.65	1.45
1120.0	1.14	1.10
2000.0	0.62	1.64
3060.0	0.33	1.12
4000.0	1.12	2.32





NOTE:

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.

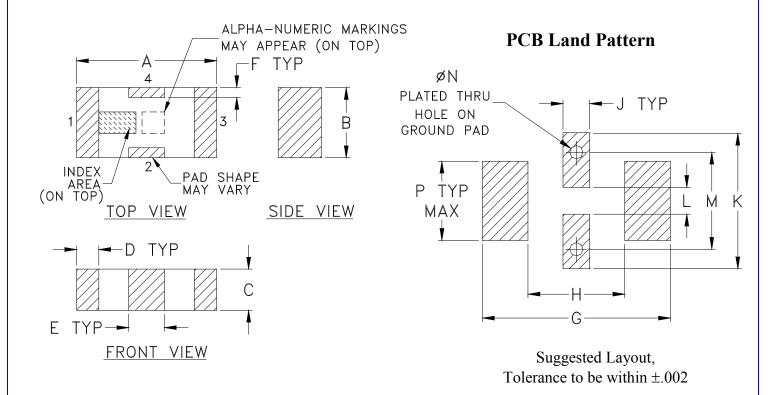
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/terms/viewterm.html

Case Style



FV1206

Outline Dimensions



CASE #	A	В	С	D	Е	F	G	Н	J	K	L	M	N	P	WT. GRAM
FV1206	.126 (3.20)	.063 (1.60)	.037 (0.94)	.020 (0.51)	.032 (0.81)	.009 (0.23)	.169 (4.29)	.087 (2.21)	.024 (0.61)	.122 (3.10)	.024 (0.61)	.087 (2.21)	.012 (0.30)	.071 (1.80)	.020

Dimensions are in inches (mm). Tolerances: 2 Pl. ± .01; 3 Pl. ± .005

Notes:

- 1. Open style, ceramic base.
- 2. Termination finish: as shown below or indicated on Data Sheet.

Tin plate over Nickel plate. All models, (+) suffix. For RoHS Case Styles:

For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.





P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

RF/IF MICROWAVE COMPONENTS

Tape & Reel Packaging TR-F71

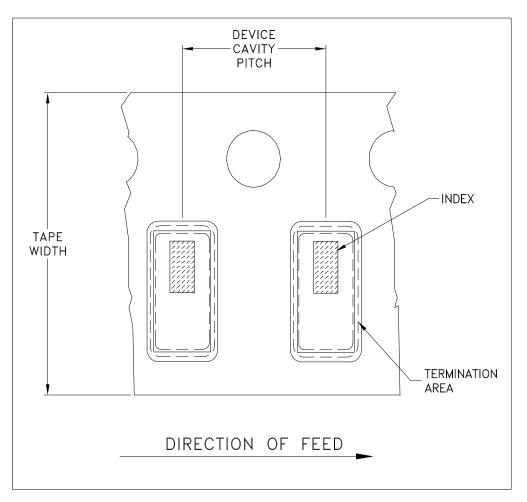


ILLUSTRATION 1

Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices p	er Reel
				20
			Small	50
			quantity	100
8	4	7	standards	200
			(see note)	500
				1000
			Standard	3000

Note: Please Consult individual model data sheet to determine device per reel availability.

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf





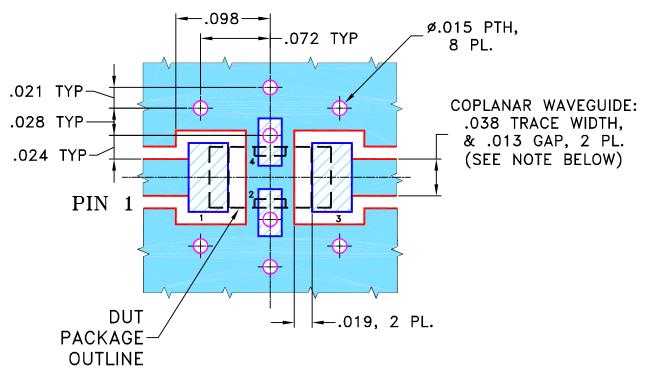
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THIRD ANGLE PROJECTION

		REVISIONS			
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M88634	NEW RELEASE	08/28/03	GF	ABD
A	M102713	ADDED "WITH SMOBC"	01/17/06	MMG	IL

SUGGESTED MOUNTING CONFIGURATION FOR FV1206 CASE STYLE, "nx" PIN CONNECTION



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DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

UNLESS OTHERWISE SPECIFIED		INITIALS	DATE				. ~	•	• 4 (R)					
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TOLERANCES ON: 2 PL DECIMALS ±	CHECKED	AV	08/28/03	Mini-Circuits® 13 Neptune Ave Brooklyn NY 11					NI IIA	230				
3 PL DECIMALS ± .005	APPROVED	ABD	08/28/03											
ANGLES ± FRACTIONS ±				bracket PL, nx, FV1206, LFCN/HFCN, TB-						B-2	70			
∏ Mini-	-Circuits ®],	,			,		.,				
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