



**THE DATASHEET OF  
HFCN-4600+**





CERAMIC

# High Pass Filter

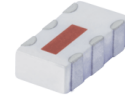
## HFCN-4600+

Mini-Circuits

50Ω 5000 to 11000 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<sup>1,2</sup> AT 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Stop Band	Rejection Loss	3700	30	—	dB
		3800	20	—	
	Freq. Cut-Off	4600	—	3.0	dB
	VSWR	3700-3800	—	20	:1
Pass Band	Insertion Loss	5000-11000	—	2.0	dB
		5200-10500	—	1.5	dB
	VSWR	4720-11000	—	1.5	:1

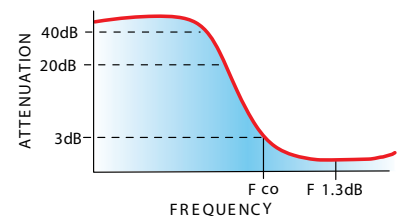
1. In Application where DC voltage is present at either input or output ports, coupling capacitors are required.
2. Measured on Mini-Circuits Characterization Test Board TB-285.

### MAXIMUM RATINGS

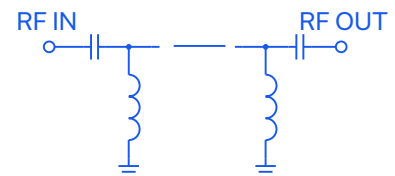
Parameter	Ratings
Operating temperature	-55°C to 100°C
Storage temperature	-55°C to 100°C
RF Power Input <sup>3</sup>	7 W max. at 25°C

3. Passband rating, derate linearly to 3.5W at 100°C ambient. Permanent damage may occur if any of these limits are exceeded.

### TYPICAL FREQUENCY RESPONSE



### FUNCTIONAL SCHEMATIC



REV. G  
 ECO-012163  
 HFCN-4600+  
 RAV/CP/AM  
 220303



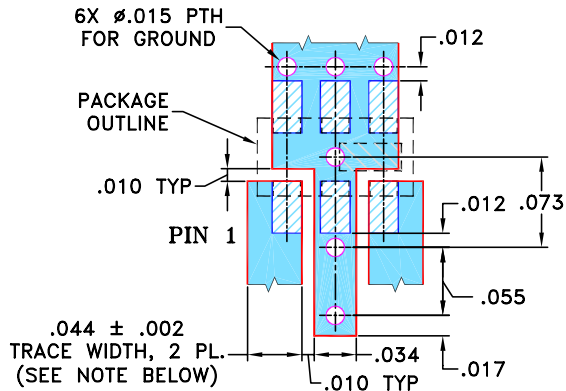


### PIN CONNECTIONS

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)

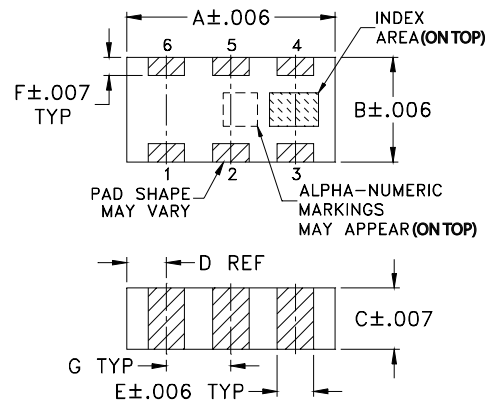


**NOTE:** 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350 WITH DIELECTRIC THICKNESS:  $.020 \pm .0015$ ; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

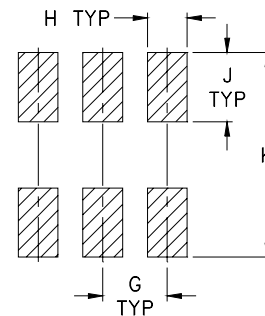
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- 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



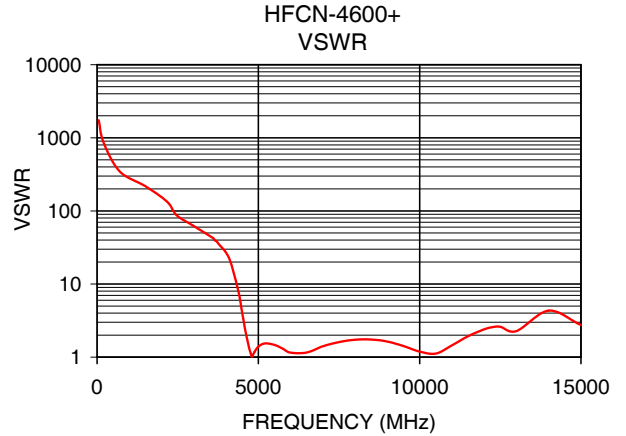
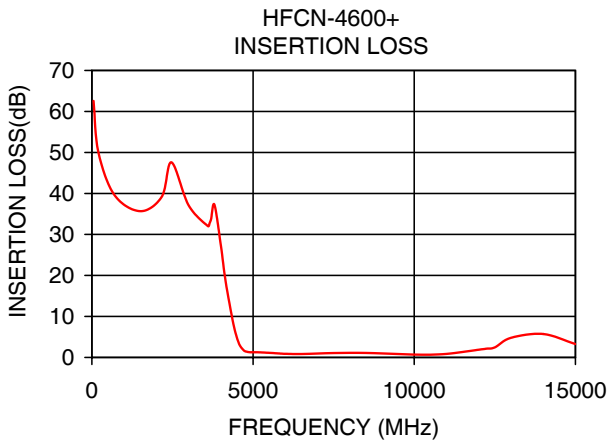
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# High Pass Filter

## HFCN-4600+

### TYPICAL PERFORMANCE DATA AT 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
50	62.56	1737.18
1500	35.68	217.15
2470	47.59	86.86
3700	33.77	38.61
3800	37.24	34.07
4150	18.50	19.32
4380	8.52	7.90
4500	4.77	3.97
4600	2.78	2.25
4720	1.66	1.31
5000	1.27	1.39
5200	1.25	1.54
8000	1.11	1.73
10500	0.66	1.12
11000	0.85	1.45
14000	5.72	4.32
15000	3.27	2.75



#### 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)



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