



CERAMIC

# High Pass Filter

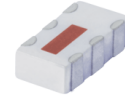
## HFCN-7971+

Mini-Circuits

50Ω 8560 to 12800 MHz

### THE BIG DEAL

- Small size
- Temperature stable
- Excellent power handling, 7W
- Hermetically sealed
- Low cost
- LTCC construction
- 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
- Point-to-point radio

### ELECTRICAL SPECIFICATIONS<sup>1,2</sup> AT 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Units	
Stop Band	Rejection Loss	DC-F1	DC-5500	25	30	—	dB
		F1-F2	5500-6945	17	22	—	
	Freq. Cut-Off	F3	8000	—	3.4	—	dB
	VSWR	DC-F2	DC-6945	—	40	—	:1
Pass Band	Insertion Loss	F4-F7	8560-12800	—	1.4	4.0	dB
		F5-F6	9975-12350	—	1.0	2.0	dB
	VSWR	F4-F7	8560-12800	—	1.7	—	: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+.

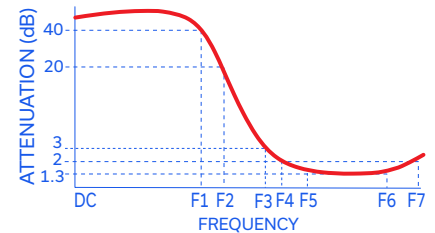
### MAXIMUM RATINGS

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

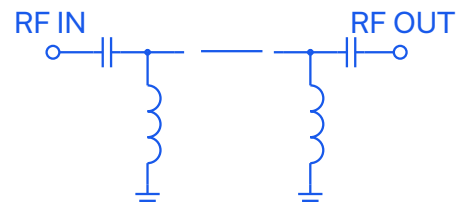
3. Passband rating, derate linearly to 3W at 100°C ambient.

Permanent damage may occur if any of these limits are exceeded.

### TYPICAL FREQUENCY RESPONSE



### FUNCTIONAL SCHEMATIC



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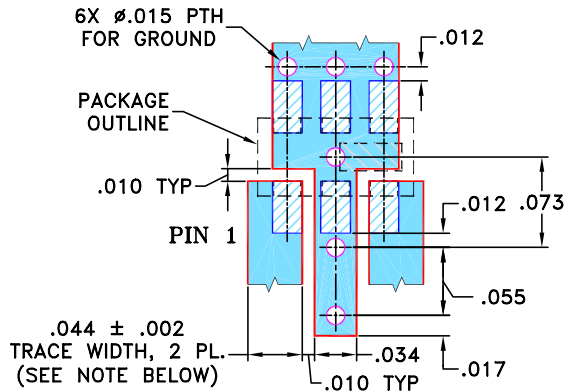
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### PIN CONNECTIONS

RF IN	1
RF OUT	3
GROUND	2,4,5,6

PRODUCT MARKING: FW

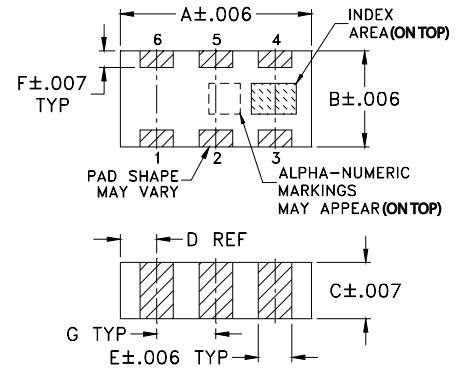
DEMO BOARD MCL P/N: TB-285+  
SUGGESTED PCB LAYOUT (PL-158)



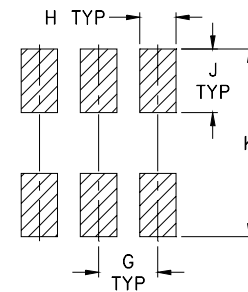
- NOTE:** 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS:  $.020 \pm .0015$ ; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- 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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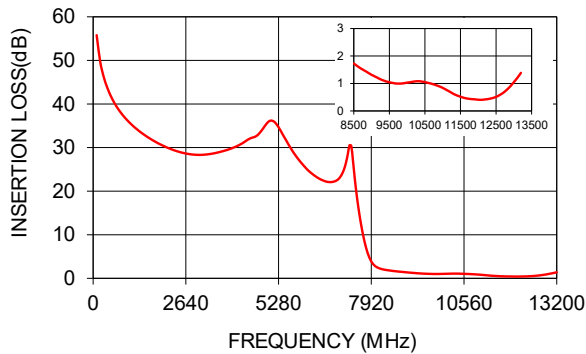
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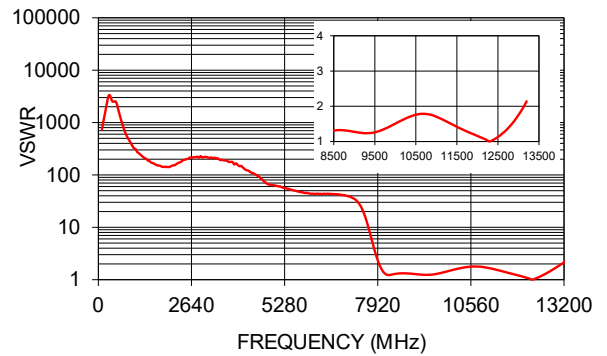
### TYPICAL PERFORMANCE DATA AT 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR :1
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-7971+  
INSERTION LOSS



HFCN-7971+  
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](http://www.minicircuits.com/MCLStore/terms.jsp)

