

# Surface Mount High Pass Filter

## SCHF-31+

50Ω 31 to 1500 MHz

### The Big Deal

- Low insertion loss
- High rejection
- Small size, 0.75 x 0.38 x 0.28"



CASE STYLE: YY161

### Product Overview

SCHF-31+ is a 50Ω high pass filter fabricated using SMT technology. This high pass filter covers from 31-1500 MHz. This filter is built with high Q capacitors and wire wound inductors for superior performance. It has repeatable performance across lots and consistent performance across temperature. The unit comes housed in a miniature plastic package measuring just 0.75 x 0.38 x 0.28", ideal for dense circuit board layouts.

### Key Features

Feature	Advantages
Low insertion loss	Can be used in high performance applications.
Good rejection	This enables the filter to attenuate spurious signals and reject harmonics for broad frequency band.
Small size, 0.75" x 0.38" x 0.28"	Accommodates tight space requirements for dense PCB layouts.

#### 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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50Ω 31 to 1500 MHz

## SCHF-31+



CASE STYLE: YY161

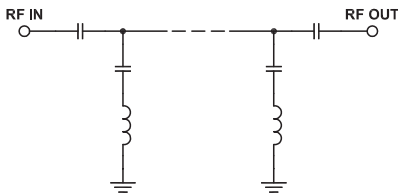
### Features

- Low Insertion loss
- High Rejection
- Small size, 0.75 x 0.38 x 0.28"

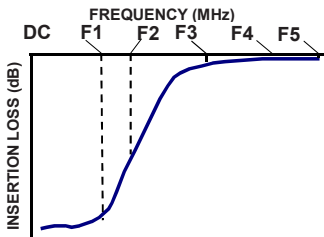
### Applications

- SATCOM
- Broadband fiber networks
- CATV
- Radio communications
- Receivers / transformer

### Functional Schematic



### Typical Frequency Response



**+RoHS Compliant**  
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

### Electrical Specifications at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Stop Band	Rejection Loss	DC-F1	DC-20.5	40	50	-	dB
		F1-F2	20.5-23.5	20	26	-	dB
	VSWR	DC-F1	DC-23.5	-	20	-	:1
Pass Band	Insertion Loss	F3-F4	31-1000	-	0.5	1.0	dB
		F4-F5	1000-1500	-	0.9	1.5	dB
	VSWR	F3-F5	31-1500	-	1.3	-	:1

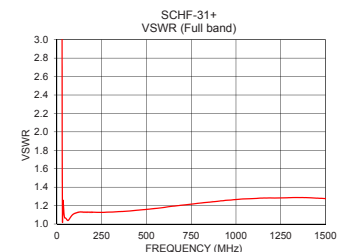
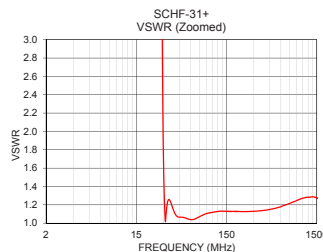
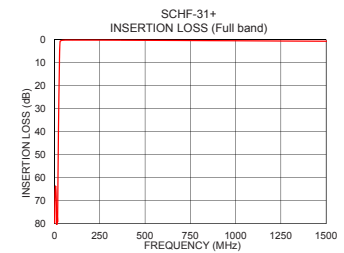
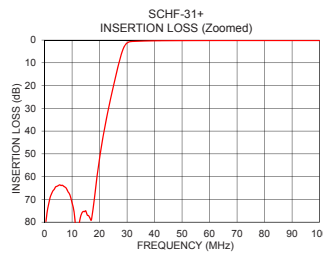
### Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	5W Max. @ 25°C

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

### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
1.0	75.00	1527.77
5.0	63.94	2310.54
20.5	48.01	140.05
23.0	31.52	84.16
23.5	28.62	74.50
24.0	25.82	64.53
25.0	20.41	46.43
27.0	10.26	15.44
28.0	5.89	7.03
28.5	4.14	4.66
29.0	2.79	3.16
30.0	1.25	1.69
31.0	0.74	1.13
35.0	0.47	1.25
50.0	0.23	1.06
250.0	0.21	1.13
500.0	0.29	1.16
1000.0	0.48	1.27
1250.0	0.60	1.28
1500.0	0.69	1.28



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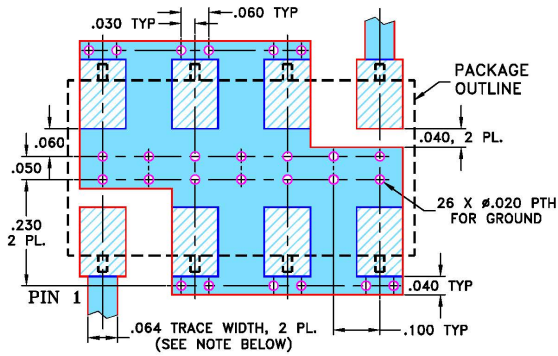


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## Pad Connections

INPUT	1
OUTPUT	8
GROUND	2, 3, 4, 5, 6, 7

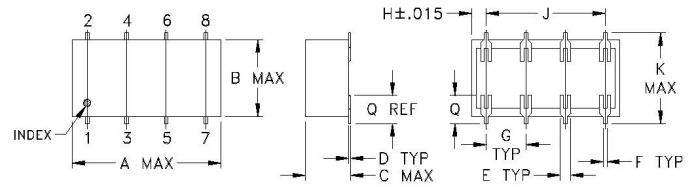
**Demo Board MCL P/N: TB-187+**  
**Suggested PCB Layout (PL-049)**



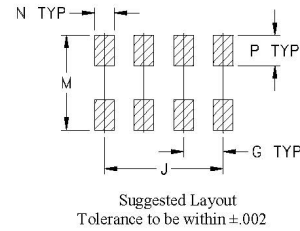
- NOTES:**
- TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS  $.030'' \pm .002''$ ; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
  - BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

## Outline Drawing



### PCB Land Pattern



### Outline Dimensions (inch)

A	B	C	D	E	F	G	H
.750	.380	.280	.101	.050	.020	.200	.075
19.05	9.65	7.11	0.25	1.27	0.51	5.08	1.91
J	K	M	N	P	Q	Wt.	
.600	.450	.470	.100	.150	.148	grams	
15.24	11.43	11.94	2.54	3.81	3.76	1.6	

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