# Surface Mount **High Pass Filter**

SCHF-27+

 $50\Omega$ 27 to 1000 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-27+ is a  $50\Omega$  high pass filter fabricated using SMT technology. This SMT model offers lower insertion loss, good return loss, higher stopband rejection and a wider passband 27 to 1000 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.   |

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# High Pass Filter

 $50\Omega$ 27 to 1000 MHz



CASE STYLE: YY161

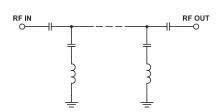
## **Features**

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

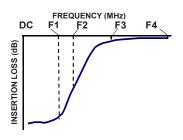
### **Applications**

- HF/VHF
- Labe use
- 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

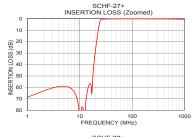
| Pa        | rameter        | F#    | Frequency (MHz) Min. |    | Тур. | Max. | Unit |
|-----------|----------------|-------|----------------------|----|------|------|------|
|           | Deigntion Loop | DC-F1 | DC-17                | 40 | 52   | -    | dB   |
| Stop Band | Rejection Loss | F1-F2 | 17-19                | 20 | 32   | -    | dB   |
|           | VSWR           | DC-F1 | DC-19                | -  | 18   | -    | :1   |
| Pass Band | Insertion Loss | F3-F4 | 27-1000              | -  | 0.6  | 1.0  | dB   |
| rass band | VSWR           | F3-F4 | 27-1000              | -  | 1.2  | -    | :1   |

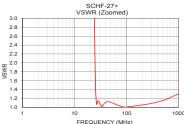
| Maximum Ratings       |                |  |  |
|-----------------------|----------------|--|--|
| Operating Temperature | -40°C to 85°C  |  |  |
| Storage Temperature   | -55°C to 100°C |  |  |
| RF Power Input        | 5W Max. @ 25°C |  |  |

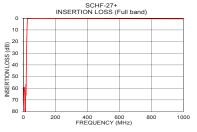
Permanent damage may occur if any of these limits are exceeded.

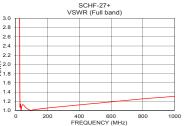
### Typical Performance Data at 25°C

| Frequency<br>(MHz) | Insertion Loss<br>(dB) | VSWR<br>(:1) |
|--------------------|------------------------|--------------|
| 1.0                | 68.60                  | 5012.20      |
| 5.0                | 58.97                  | 844.66       |
| 10.0               | 86.61                  | 290.32       |
| 15.0               | 57.95                  | 113.27       |
| 17.0               | 65.92                  | 80.70        |
| 19.0               | 35.82                  | 55.97        |
| 19.5               | 31.37                  | 50.35        |
| 20.0               | 27.32                  | 44.79        |
| 21.0               | 20.01                  | 32.84        |
| 22.0               | 13.40                  | 19.86        |
| 23.0               | 7.56                   | 9.15         |
| 24.0               | 3.31                   | 3.67         |
| 25.0               | 1.32                   | 1.77         |
| 26.0               | 0.72                   | 1.18         |
| 27.0               | 0.56                   | 1.07         |
| 50.0               | 0.22                   | 1.11         |
| 100.0              | 0.18                   | 1.01         |
| 250.0              | 0.22                   | 1.07         |
| 500.0              | 0.32                   | 1.15         |
| 1000.0             | 0.53                   | 1.31         |









Notes

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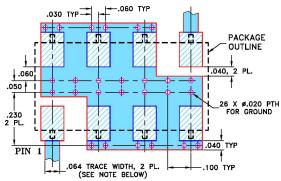
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SCHF-27+ **High Pass Filter** 

#### **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)



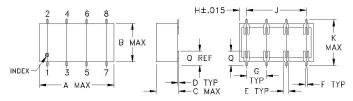
NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .030"  $\pm$  .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

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

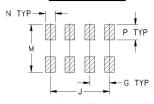
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

### **Outline Drawing**



#### PCB Land Pattern



Suggested Layout Tolerance to be within ±.002

#### Outline Dimensions (inch)

| Н     | G    | F    | Е    | D    | С     | В     | Α     |
|-------|------|------|------|------|-------|-------|-------|
| .075  | .200 | .020 | .050 | .010 | .280  | .380  | .750  |
| 1.91  | 5.08 | 0.51 | 1.27 | 0.25 | 7.11  | 9.65  | 19.05 |
| 14/1  |      | _    | _    |      |       | 14    |       |
| Wt.   |      | Q    | Р    | IN   | M     | K     | J     |
| grams |      | .148 | .150 | .100 | .470  | .450  | .600  |
| 1.6   |      | 3.76 | 3.81 | 2.54 | 11.94 | 11.43 | 15.24 |

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