

# Surface Mount Low Pass Filter

## SCLF-65+

50Ω DC to 65 MHz

### Maximum Ratings

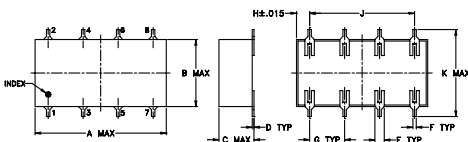
|                       |                |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C  |
| Storage Temperature   | -55°C to 100°C |
| RF Power Input        | 0.5W max.      |

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

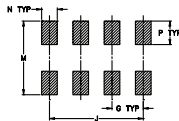
### Pin Connections

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

### Outline Drawing



#### PCB Land Pattern



Suggested Layout,  
Tolerance to be within ±0.02

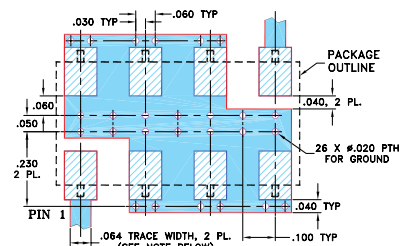
### Outline Dimensions (inch/mm)

| A     | B    | C    | D    | E    | F    | G    |
|-------|------|------|------|------|------|------|
| 0.75  | 0.38 | 0.28 | 0.01 | 0.05 | 0.02 | 0.2  |
| 19.05 | 9.65 | 7.11 | 0.25 | 1.27 | 0.51 | 5.08 |

| H     | J     | K     | M     | N    | P    | wt    |
|-------|-------|-------|-------|------|------|-------|
| 0.075 | 0.6   | 0.45  | 0.47  | 0.1  | 0.15 | grams |
| 1.91  | 15.24 | 11.43 | 11.94 | 2.54 | 3.81 | 1.60  |

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



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .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

#### 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.  
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### Features

- wide selection of cut-off frequencies
- excellent rejection
- custom models available

### Applications

- defense communications
- receivers/transmitters
- harmonic rejection of VCOs



Generic photo used for illustration purposes only  
CASE STYLE: YY161

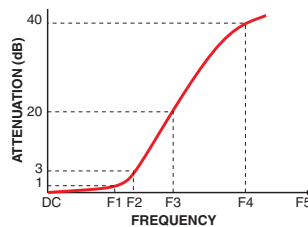
#### +RoHS Compliant

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

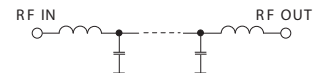
### Electrical Specifications

| Parameter | F#             | Frequency (MHz) | Min.   | Typ. | Max. | Unit |    |
|-----------|----------------|-----------------|--------|------|------|------|----|
| Pass Band | Insertion Loss | DC-F1           | DC-65  | —    | —    | 1.0  | dB |
|           | Freq. Cut-Off  | F2              | 71     | —    | 3.0  | —    | dB |
|           | VSWR           | DC-F1           | DC-65  | —    | 1.3  | —    | :1 |
| Stop Band | Rejection Loss | F3-F4           | 86-96  | 20   | —    | —    | dB |
|           |                | F4-F5           | 96-510 | 40   | —    | —    | dB |
|           | VSWR           | F3-F5           | 86-510 | —    | 18   | —    | :1 |

### Typical Frequency Response



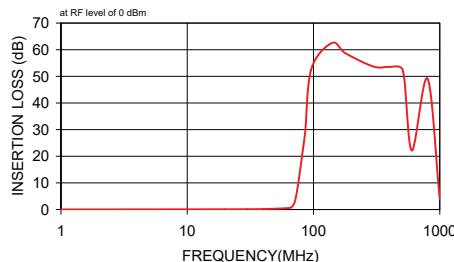
### Electrical Schematic



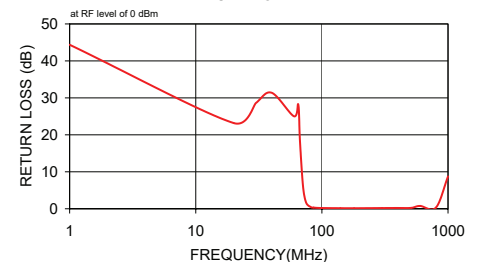
### Typical Performance Data

| Frequency (MHz) | Insertion Loss (dB) |          | Return Loss (dB) |
|-----------------|---------------------|----------|------------------|
|                 | $\bar{x}$           | $\sigma$ |                  |
| 1.00            | 0.03                | 0.00     | 44.37            |
| 20.00           | 0.10                | 0.00     | 23.19            |
| 30.00           | 0.12                | 0.01     | 28.62            |
| 40.00           | 0.17                | 0.00     | 31.38            |
| 60.00           | 0.45                | 0.01     | 25.03            |
| 65.00           | 0.65                | 0.02     | 28.17            |
| 67.00           | 0.88                | 0.05     | 18.31            |
| 71.00           | 2.86                | 0.26     | 5.83             |
| 75.00           | 8.55                | 0.56     | 1.65             |
| 82.00           | 21.71               | 0.71     | 0.44             |
| 86.00           | 29.33               | 0.78     | 0.32             |
| 96.00           | 52.71               | 2.06     | 0.21             |
| 140.00          | 62.52               | 1.00     | 0.16             |
| 180.00          | 58.61               | 0.65     | 0.15             |
| 300.00          | 53.64               | 0.36     | 0.20             |
| 400.00          | 53.53               | 0.32     | 0.21             |
| 510.00          | 52.19               | 0.80     | 0.24             |
| 600.00          | 22.14               | 0.44     | 0.76             |
| 800.00          | 49.13               | 0.65     | 0.28             |
| 1,000.00        | 3.96                | 0.08     | 8.74             |

#### INSERTION LOSS



#### RETURN LOSS



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