

# Surface Mount Low Pass Filter

50Ω DC to 4.7 MHz

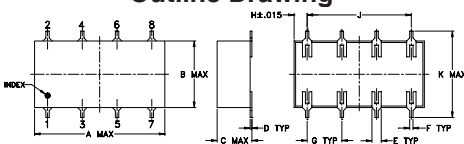
## Maximum Ratings

|                                                                 |                |
|-----------------------------------------------------------------|----------------|
| 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. |                |

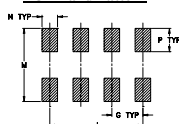
## Pin Connections

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

## Outline Drawing



### PCB Land Pattern

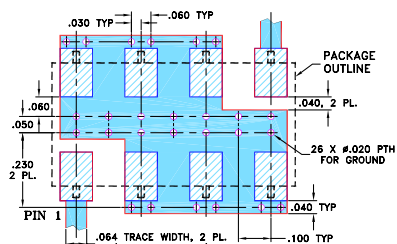


Suggested Layout,  
Tolerance to be within ±0.02

## Outline Dimensions (inch)

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

## Features

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

## Applications

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



CASE STYLE: YY161

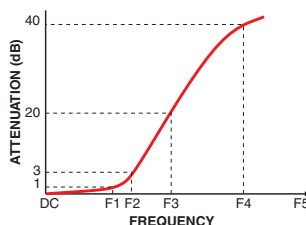
### +RoHS Compliant

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

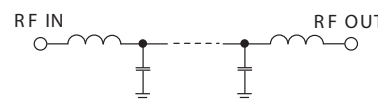
## Low Pass Filter Electrical Specifications

| PASSBAND (MHz) | fco, (MHz) Nom. | STOPBAND (MHz)                | VSWR (:1)                     |
|----------------|-----------------|-------------------------------|-------------------------------|
| (loss < 1 dB)  | (loss 3 dB)     | (loss > 20 dB) (loss > 40 dB) | Pass band Typ. Stop band Typ. |
| DC-4.7         | 5.6             | 6.6-7.4 7.4-600               | 1.25 18                       |

## typical frequency response



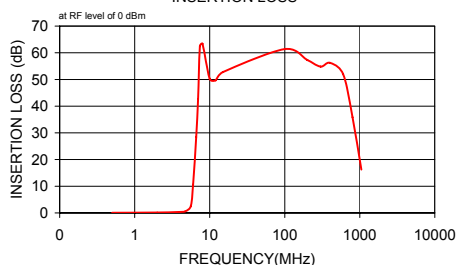
## Electrical Schematic



## Typical Performance Data

| Frequency (MHz) | Insertion Loss (dB) |          | Return Loss (dB) |
|-----------------|---------------------|----------|------------------|
|                 | $\bar{x}$           | $\sigma$ |                  |
| 0.50            | 0.07                | 0.00     | 26.88            |
| 2.00            | 0.16                | 0.01     | 23.15            |
| 4.00            | 0.38                | 0.01     | 22.89            |
| 4.70            | 0.57                | 0.02     | 27.17            |
| 5.60            | 2.54                | 0.37     | 9.80             |
| 6.00            | 10.57               | 1.11     | 1.63             |
| 6.60            | 28.45               | 1.46     | 0.38             |
| 7.00            | 42.69               | 2.38     | 0.26             |
| 7.40            | 62.47               | 2.58     | 0.20             |
| 8.00            | 63.37               | 3.10     | 0.14             |
| 10.00           | 50.20               | 0.51     | 0.08             |
| 12.00           | 49.67               | 0.33     | 0.10             |
| 15.00           | 52.78               | 0.29     | 0.06             |
| 100.00          | 61.38               | 0.45     | 0.12             |
| 200.00          | 57.29               | 0.68     | 0.17             |
| 300.00          | 54.82               | 0.58     | 0.19             |
| 400.00          | 56.25               | 0.90     | 0.21             |
| 600.00          | 52.00               | 0.91     | 0.25             |
| 800.00          | 35.84               | 0.62     | 0.31             |
| 1050.00         | 16.25               | 0.74     | 0.84             |

## SCLF-4.7 INSERTION LOSS



## SCLF-4.7 RETURN LOSS

