

# Surface Mount Bandpass Filter

50Ω 600 to 680 MHz

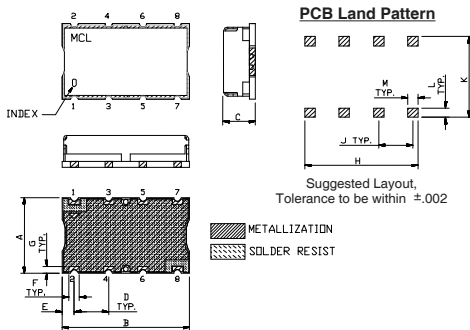
## Maximum Ratings

|                                                                 |                |
|-----------------------------------------------------------------|----------------|
| 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

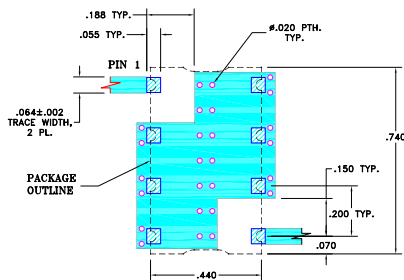


## Outline Dimensions (inch/mm)

|       |       |      |       |      |      |       |
|-------|-------|------|-------|------|------|-------|
| A     | B     | C    | D     | E    | F    |       |
| .44   | .74   | .27  | .200  | .07  | .060 |       |
| 11.18 | 18.80 | 6.86 | 5.08  | 1.78 | 1.52 |       |
| G     | H     | J    | K     | L    | M    | wt.   |
| .040  | .660  | .200 | .470  | .055 | .060 | grams |
| 1.02  | 16.76 | 5.08 | 11.94 | 1.40 | 1.52 | 3.0   |

Note: Please refer to case style drawing for details

## Demo Board MCL P/N: TB-368 Suggested PCB Layout (PL-230)



- NOTE:
- TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS: .025"±.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



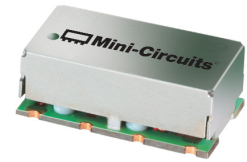
## Features

- linear phase, up to  $\pm 8$  deg typ @  $F_c \pm 45$  MHz
- high rejection
- shielded case
- aqueous washable

## Applications

- mobile TV
- receivers / transmitters
- harmonic rejection

SXBP-640+



Generic photo used for illustration purposes only

CASE STYLE: HF1139

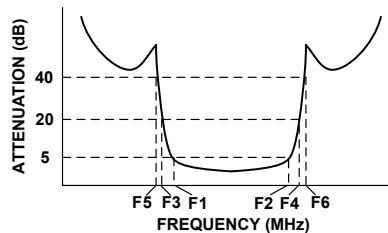
## +RoHS Compliant

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

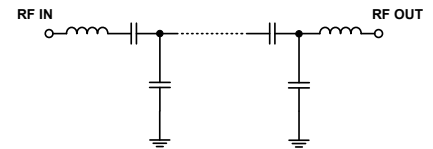
## Bandpass Filter Electrical Specifications ( $T_{AMB} = 25^\circ\text{C}$ )

| CENTER<br>FREQ.<br>(MHz) | PASSBAND<br>(MHz)<br>(Loss < 5dB) | STOPBANDS (MHz) |     |             |            | MAXIMUM DEVIATION<br>FROM LINEAR PHASE<br>(deg.) | VSWR (:1) |      |          |
|--------------------------|-----------------------------------|-----------------|-----|-------------|------------|--------------------------------------------------|-----------|------|----------|
|                          |                                   | Loss > 20dB     |     | Loss > 40dB |            |                                                  | Passband  |      | Stopband |
|                          |                                   | F3              | F4  | F5          | F6         |                                                  | Typ.      | Max. | Typ.     |
| Fc                       | F1 - F2                           |                 |     |             |            | Fc ± 45MHz                                       |           |      |          |
| 640                      | 600 - 680                         | 500             | 750 | 425         | 785 - 2400 | ± 16                                             | 1.4       | 2.1  | 20       |

## Typical Frequency Response



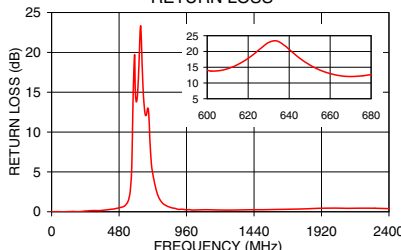
## Functional Schematic



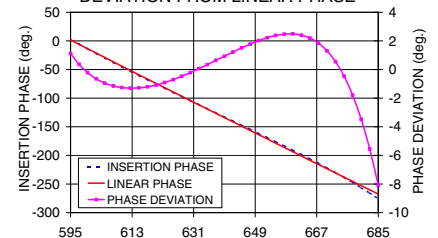
## Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) |          | Return Loss (dB) | Frequency (MHz) | Deviation from Linear Phase (deg.) |
|-----------------|---------------------|----------|------------------|-----------------|------------------------------------|
|                 | $\bar{x}$           | $\sigma$ |                  |                 |                                    |
| 1.0             | 94.11               | 3.80     | 0.01             | 595.0           | 1.11                               |
| 425.0           | 51.02               | 0.48     | 0.31             | 600.0           | -0.22                              |
| 500.0           | 33.93               | 0.56     | 0.58             | 605.0           | -0.95                              |
| 550.0           | 16.28               | 0.78     | 1.67             | 610.0           | -1.26                              |
| 570.0           | 7.30                | 0.67     | 5.59             | 620.0           | -1.08                              |
| 580.0           | 4.28                | 0.38     | 14.61            | 625.0           | -0.71                              |
| 600.0           | 2.61                | 0.15     | 14.05            | 630.0           | -0.22                              |
| 622.0           | 2.26                | 0.13     | 18.76            | 635.0           | 0.34                               |
| 640.0           | 2.31                | 0.13     | 20.65            | 640.0           | 0.93                               |
| 660.0           | 2.62                | 0.15     | 12.97            | 645.0           | 1.51                               |
| 680.0           | 2.94                | 0.12     | 12.68            | 650.0           | 2.02                               |
| 700.0           | 4.90                | 0.35     | 8.72             | 655.0           | 2.38                               |
| 710.0           | 8.58                | 0.60     | 6.00             | 660.0           | 2.49                               |
| 730.0           | 19.78               | 0.70     | 3.83             | 665.0           | 2.20                               |
| 750.0           | 31.44               | 0.74     | 2.38             | 670.0           | 1.31                               |
| 785.0           | 53.01               | 1.44     | 1.18             | 675.0           | -0.47                              |
| 1000.0          | 83.88               | 5.74     | 0.22             | 680.0           | -3.47                              |
| 2400.0          | 51.09               | 0.34     | 0.39             | 685.0           | -8.08                              |

## RETURN LOSS



## INSERTION PHASE & DEVIATION FROM LINEAR PHASE



## Notes

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