

Bandpass Filter

BPF-B503+

50Ω 495 to 510 MHz

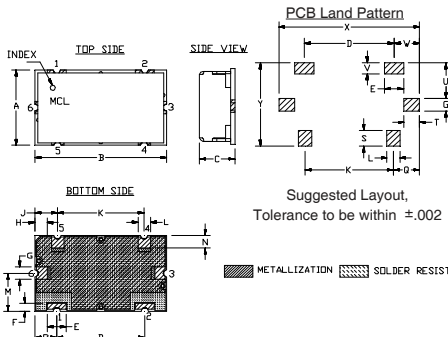
Maximum Ratings

| | |
|---|----------------|
| 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 | 2 |
| GROUND | 3, 4, 5, 6 |

Outline Drawing

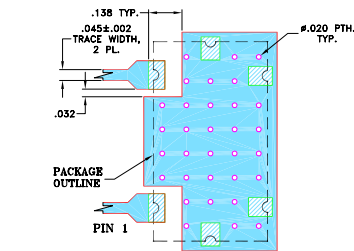


Outline Dimensions (inch/mm)

| | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| A | B | C | D | E | F | G | H | J | K | L | M |
| .472" | .826" | .220" | .551" | .118" | .047" | .078" | .076" | .142" | .543" | .078" | .236" |
| 11.99 | 20.98 | 5.59 | 14.00 | 3.00 | 1.19 | 1.98 | 1.92 | 3.61 | 13.79 | 1.98 | 5.99 |
| N | P | Q | S | T | U | V | W | X | Y | wt | |
| .079" | .138" | .162" | .098" | .096" | .217" | .067" | .157" | .866" | .512" | grams | |
| 2.01 | 3.51 | 4.11 | 2.49 | 2.44 | 5.51 | 1.70 | 3.99 | 22.00 | 13.00 | 6.0 | |

Note: Please refer to case style drawing for details

Demo Board MCL P/N: TB-400+ Suggested PCB Layout (PL-247)



- NOTES:
- 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 SOLDERMASK

Features

- Linear Phase, up to ± 2 deg Typ @ Fc ± 15 MHz
- High Rejection
- Shielded case
- Aqueous washable

Applications

- Test Setup
- Harmonic Rejection
- Transmitters / Receivers



Generic photo used for illustration purposes only
CASE STYLE: HZ1198

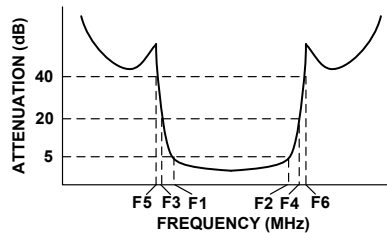
+RoHS Compliant

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

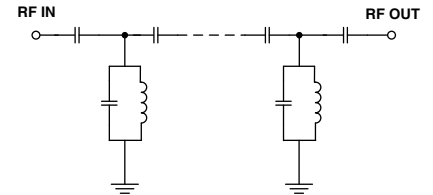
Bandpass Filter Electrical Specifications (T_{AMB} = 25°C)

| CENTER FREQ. (MHz) | PASSBAND (MHz) (Loss < 5dB) | STOPBANDS (MHz) | | | | MAXIMUM DEVIATION FROM LINEAR PHASE (deg.) | VSWR (:1) | | |
|--------------------|-----------------------------|-----------------|-----|-------------|------------|--|-----------|------|----------|
| | | Loss > 20dB | | Loss > 40dB | | | Passband | | Stopband |
| Fc | F1 - F2 | F3 | F4 | F5 | F6 | Fc ± 15 MHz | Typ. | Max. | Typ. |
| 503 | 495 - 510 | 440 | 565 | 400 | 610 - 2600 | ± 5 | 1.5 | 2.0 | 30 |

Typical Frequency Response

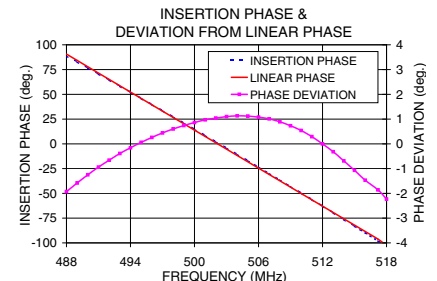
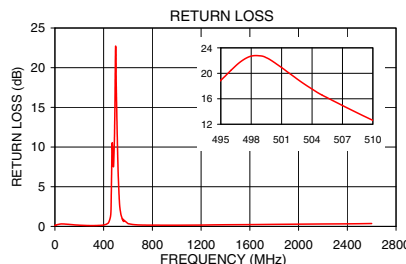
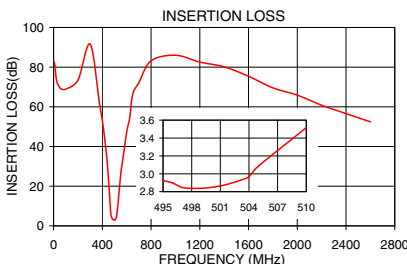


Functional Schematic



Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | | Return Loss (dB) | Frequency (MHz) | Deviation from Linear Phase (deg.) |
|-----------------|---------------------|----------|------------------|-----------------|------------------------------------|
| | \bar{x} | σ | | | |
| 0.5 | 83.02 | 0.71 | 0.11 | 488.0 | -1.93 |
| 400.0 | 53.02 | 0.41 | 0.18 | 489.0 | -1.58 |
| 440.0 | 31.89 | 0.57 | 0.47 | 490.0 | -1.25 |
| 455.0 | 19.85 | 0.75 | 1.14 | 492.0 | -0.66 |
| 465.0 | 10.30 | 0.61 | 6.26 | 494.0 | -0.16 |
| 470.0 | 5.76 | 0.40 | 10.55 | 496.0 | 0.26 |
| 495.0 | 2.92 | 0.04 | 18.91 | 498.0 | 0.60 |
| 499.0 | 2.84 | 0.04 | 22.72 | 500.0 | 0.86 |
| 503.0 | 2.92 | 0.07 | 18.57 | 501.0 | 0.97 |
| 505.0 | 3.09 | 0.12 | 16.57 | 502.0 | 1.04 |
| 510.0 | 3.52 | 0.23 | 12.61 | 504.0 | 1.13 |
| 520.0 | 6.12 | 0.66 | 6.27 | 506.0 | 1.08 |
| 530.0 | 11.91 | 0.89 | 2.92 | 507.0 | 1.01 |
| 550.0 | 25.33 | 0.67 | 1.09 | 509.0 | 0.73 |
| 565.0 | 32.43 | 0.57 | 0.62 | 510.0 | 0.54 |
| 610.0 | 50.26 | 0.40 | 0.32 | 512.0 | 0.00 |
| 1600.0 | 75.43 | 0.49 | 0.23 | 514.0 | -0.69 |
| 2600.0 | 52.44 | 0.19 | 0.36 | 518.0 | -2.23 |



Notes

- 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.
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