

Surface Mount Bandpass Filter

CBP-1630F+

50Ω 1500 to 1760 MHz

The Big Deal

- High Q
- Good selectivity
- Low VSWR
- Small shielded package



CASE STYLE: KV1710

Product Overview

CBP-1630F+ is a coaxial-ceramic-resonator based bandpass filter in a shielded package fabricated using SMT technology. This filter has low insertion loss with high rejection and low VSWR for use in L-band application, Aviation / Aeronautical, Maritime, Mobile satellite and radio astronomy.

Key Features

| Feature | Advantages |
|---------------------|--|
| High Q | The CBP-1630F+ filter incorporates High-Q ceramic resonators that enables low insertion loss. |
| Good selectivity | This filter designed with six pole. So this providing good selectivity in the stopband performance. |
| Low VSWR | This filter maintains typical VSWR over a passband frequency range. |
| Rugged construction | The CBP-1630F+ has been qualified over wide range of thermal, mechanical and environmental conditions including withstanding the stress of extensive solder reflow cycles. |

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.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



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Features

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Applications

- L-band application
- Aviation/Aeronautical
- Maritime
- Radio astronomy
- Mobile satellite

Electrical Specifications at 25°C

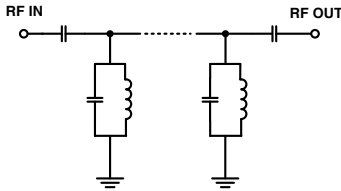
| Parameter | F# | Frequency (MHz) | Min. | Typ. | Max. | Unit | |
|------------------|------------------|-----------------|-----------|------|------|------|----|
| Pass Band | Center Frequency | - | - | 1630 | - | MHz | |
| | Insertion Loss | F1-F2 | 1500-1760 | - | 1.0 | 2.2 | dB |
| | VSWR | F1-F2 | 1500-1760 | - | 1.5 | 2.1 | :1 |
| Stop Band, Lower | Insertion Loss | DC-F3 | DC-1320 | 20 | 30 | - | dB |
| | VSWR | DC-F3 | DC-1320 | - | 20 | - | :1 |
| Stop Band, Upper | Insertion Loss | F4-F5 | 1960-2600 | 20 | 30 | - | dB |
| | VSWR | F4-F5 | 1960-2600 | - | 20 | - | :1 |

Maximum Ratings

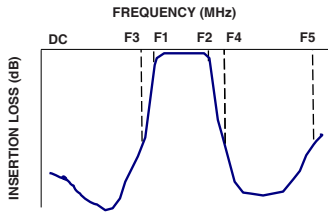
| | |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| RF Power Input | 1 W max. |

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

Functional Schematic



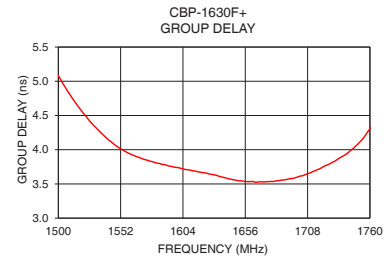
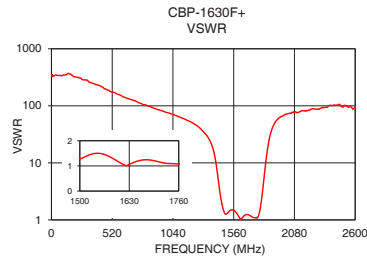
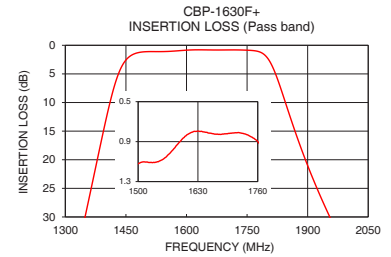
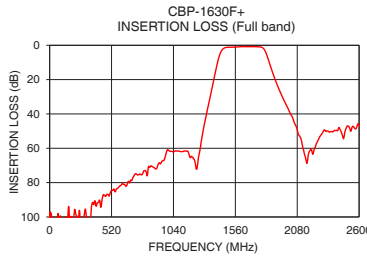
Typical Frequency Response



Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) | Frequency (MHz) | Group Delay (nsec) |
|-----------------|---------------------|-----------|-----------------|--------------------|
| 1 | 106.98 | 351.51 | 1500 | 5.08 |
| 100 | 106.33 | 347.45 | 1514 | 4.69 |
| 500 | 87.87 | 181.11 | 1528 | 4.38 |
| 1000 | 61.30 | 75.35 | 1542 | 4.14 |
| 1320 | 39.21 | 31.83 | 1556 | 3.97 |
| 1350 | 29.58 | 25.93 | 1570 | 3.87 |
| 1380 | 19.67 | 18.49 | 1584 | 3.80 |
| 1400 | 13.16 | 12.50 | 1598 | 3.74 |
| 1420 | 7.46 | 6.71 | 1612 | 3.69 |
| 1440 | 3.65 | 3.26 | 1626 | 3.64 |
| 1500 | 1.12 | 1.27 | 1630 | 3.63 |
| 1630 | 0.79 | 1.06 | 1654 | 3.54 |
| 1760 | 0.90 | 1.08 | 1668 | 3.53 |
| 1808 | 3.05 | 3.30 | 1682 | 3.55 |
| 1850 | 11.10 | 17.62 | 1696 | 3.58 |
| 1895 | 20.12 | 42.83 | 1710 | 3.66 |
| 1955 | 30.04 | 62.13 | 1724 | 3.77 |
| 1960 | 30.79 | 63.34 | 1738 | 3.91 |
| 2300 | 50.01 | 90.14 | 1752 | 4.12 |
| 2600 | 46.38 | 93.19 | 1760 | 4.31 |

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



Notes

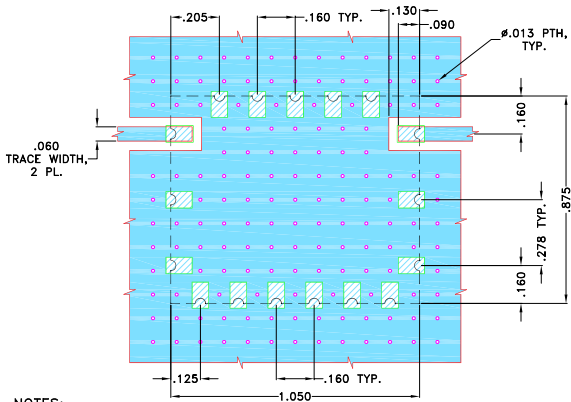
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Pad Connections

| | |
|--------|--------------------------------------|
| INPUT | 1 |
| OUTPUT | 12 |
| GROUND | 2,3,4,5,6,7,8,9,10,11,13,14,15,16,17 |

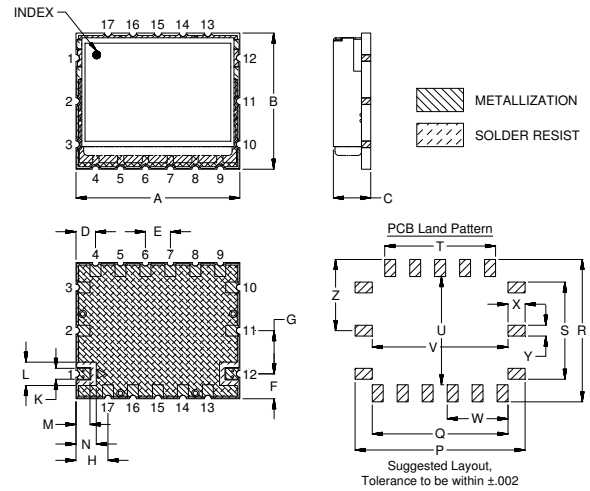
Demo Board MCL P/N: TB-693+
Suggested PCB Layout (PL-378)



- NOTES:
- TRACE WIDTH IS SHOWN FOR OAK (OAK-602) WITH DIELECTRIC THICKNESS .022"±.0015". 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

Outline Drawing



Outline Dimensions (inch / mm)

| | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|------|------|------|-------|-------|------|
| A | B | C | D | E | F | G | H | J | K | L | M | N |
| 1.050 | .875 | .239 | .125 | .160 | .160 | .278 | .205 | .160 | .070 | .150 | .090 | .130 |
| 26.67 | 22.23 | 6.07 | 3.18 | 4.06 | 4.06 | 7.06 | 5.21 | 4.06 | 1.78 | 3.81 | 2.29 | 3.30 |
| P | Q | R | S | T | U | V | W | X | Y | Z | Wt. | |
| 1.090 | .870 | .915 | .625 | .710 | .695 | .870 | .390 | .110 | .070 | .458 | grams | |
| 27.69 | 22.10 | 23.24 | 15.88 | 18.03 | 17.65 | 22.10 | 9.91 | 2.79 | 1.78 | 11.63 | 8.5 | |

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