

# Surface Mount Bandpass Filter

## CBP-1280F+

50Ω      1160 to 1400 MHz



Generic photo used for illustration purposes only  
CASE STYLE: KV1710

### The Big Deal

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

### Product Overview

CBP-1280F+ 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, defence systems and radio astronomy.

### Key Features

| Feature             | Advantages   |
|---------------------|--|
| High Q              | The CBP-1280F+ 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-1280F+ 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](http://www.minicircuits.com/MCLStore/terms.jsp)



# Surface Mount Bandpass Filter

## CBP-1280F+

50Ω 1160 to 1400 MHz



Generic photo used for illustration purposes only  
CASE STYLE: KV1710

### Features

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

### Applications

- L-band application
- Aviation/Aeronautical
- Defence systems
- Radio astronomy

### Electrical Specifications at 25°C

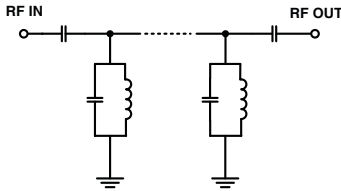
| Parameter        | F#               | Frequency (MHz) | Min.      | Typ. | Max. | Unit |    |
|------------------|------------------|-----------------|-----------|------|------|------|----|
| Pass Band        | Center Frequency | -               | -         | 1280 | -    | MHz  |    |
|                  | Insertion Loss   | F1-F2           | 1160-1400 | -    | 1.0  | 2.0  | dB |
|                  | VSWR             | F1-F2           | 1160-1400 | -    | 1.5  | 1.9  | :1 |
| Stop Band, Lower | Insertion Loss   | DC-F3           | DC-1000   | 20   | 30   | -    | dB |
|                  | VSWR             | DC-F3           | DC-1000   | -    | 20   | -    | :1 |
| Stop Band, Upper | Insertion Loss   | F4-F5           | 1570-2100 | 20   | 30   | -    | dB |
|                  | VSWR             | F4-F5           | 1570-2100 | -    | 20   | -    | :1 |

### Maximum Ratings

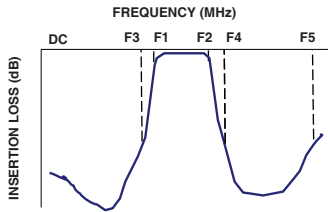
|                       |                |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C  |
| Storage Temperature   | -55°C to 100°C |
| RF Power Input        | 1 W max.       |

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

### Functional Schematic



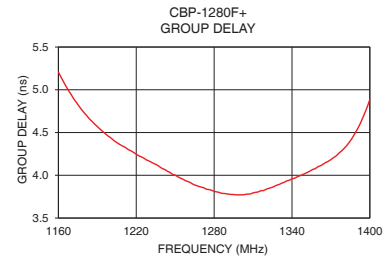
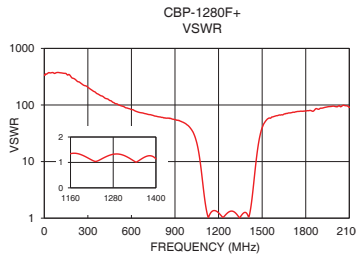
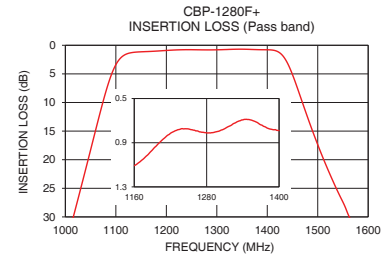
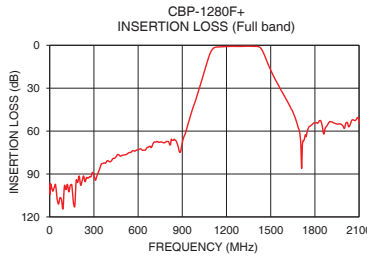
### Typical Frequency Response



### Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) | Frequency (MHz) | Group Delay (nsec) |
|-----------------|---------------------|-----------|-----------------|--------------------|
| 1               | 96.75               | 340.69    | 1160            | 5.21               |
| 100             | 98.16               | 374.91    | 1170            | 4.94               |
| 500             | 76.83               | 104.83    | 1180            | 4.73               |
| 1000            | 35.23               | 40.81     | 1190            | 4.57               |
| 1015            | 30.23               | 36.27     | 1200            | 4.44               |
| 1045            | 20.00               | 23.79     | 1210            | 4.34               |
| 1055            | 16.53               | 18.82     | 1220            | 4.25               |
| 1080            | 8.16                | 7.28      | 1230            | 4.17               |
| 1100            | 3.39                | 2.66      | 1240            | 4.08               |
| 1160            | 1.11                | 1.34      | 1250            | 4.00               |
| 1280            | 0.81                | 1.32      | 1260            | 3.93               |
| 1400            | 0.79                | 1.14      | 1270            | 3.86               |
| 1440            | 3.12                | 3.72      | 1280            | 3.81               |
| 1480            | 12.62               | 24.83     | 1290            | 3.78               |
| 1510            | 19.60               | 45.76     | 1300            | 3.77               |
| 1560            | 29.53               | 58.87     | 1320            | 3.84               |
| 1570            | 31.31               | 61.35     | 1340            | 3.96               |
| 1500            | 17.38               | 39.61     | 1360            | 4.10               |
| 2000            | 58.12               | 94.37     | 1380            | 4.31               |
| 2100            | 52.14               | 90.80     | 1400            | 4.89               |

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



### Notes

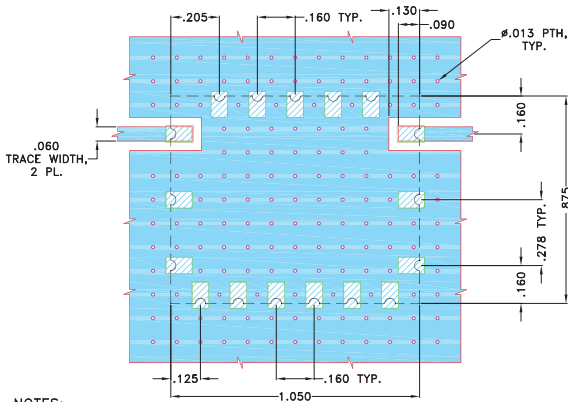
- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- 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](http://www.minicircuits.com/MCLStore/terms.jsp)



## 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)**

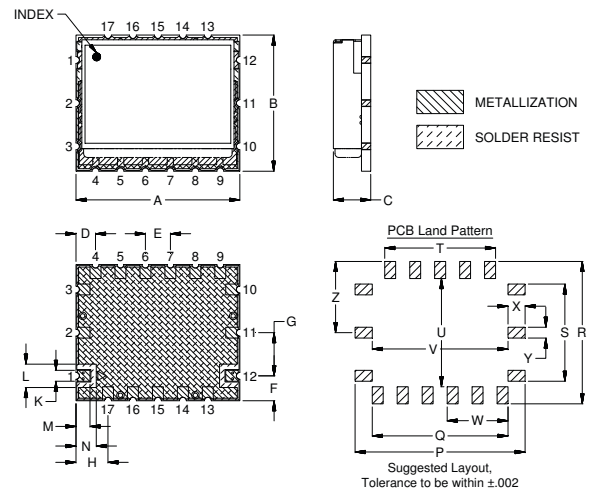


**NOTES:**

- 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   |      |

*Note: Please refer to case style drawing for details*

**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-Circuit's 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-Circuit's website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)

