*Surface Mount*

# Bandpass Filter

## CBP-1490A+

50Ω 1465 to 1515 MHz

## The Big Deal

- High selectivity
- Good Return loss
- Miniature shielded package

CASE STYLE: KV1514

## Product Overview

CBP-1490A+ is a ceramic-coaxial-resonator based bandpass filter in a shielded package fabricated using SMT technology. This filter offers outstanding close in rejection and power handling for use in aeronautical, test and measurement applications.

## Key Features

| Feature | Advantages |
|---|---|
| High Selectivity | The CBP-1490A+ filter incorporates High-Q ceramic resonators that enables sharp rejection near passband. |
| Low Passband VSWR | This filter maintains typical VSWR over a passband frequency range making this filter easier to integrate into receiver and transmitter RF chains with less concerns for in band frequency ripple. |
| Rugged construction | The CBP-1490A+ has been qualified over wide range of thermal, mechanical and environmental conditions including withstanding the stress of extensive solder reflow cycles. |

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CASE STYLE: KV1514

### Features

- High selectivity
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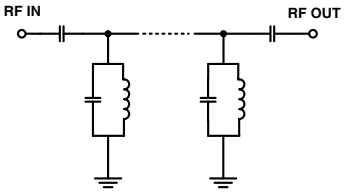
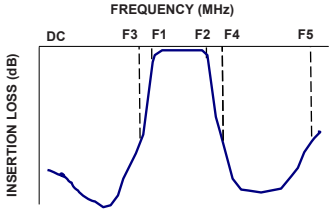
### Applications

- Aeronautical
- Digital audio broadcasting
- Test and measurement

### Functional Schematic




### Typical Frequency Response




***+RoHS Compliant***

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

### Electrical Specifications at 25°C

| Parameter | | F# | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| Pass Band | Center Frequency | - | - | - | 1490 | - | MHz |
| | Insertion Loss | F1-F2 | 1465-1515 | - | 3.0 | 4.5 | dB |
| | VSWR | F1-F2 | 1465-1515 | - | 1.3 | 2.3 | :1 |
| Stop Band, Lower | Insertion Loss | DC-F3 | DC-1430 | 20.0 | 30.0 | - | dB |
| | VSWR | DC-F3 | DC-1430 | - | 20.0 | - | :1 |
| Stop Band, Upper | Insertion Loss | F4-F5 | 1550-3300 | 20.0 | 29.5 | - | dB |
| | VSWR | F4-F5 | 1550-3300 | - | 20.0 | - | :1 |

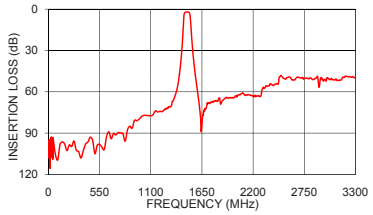
| Maximum Ratings | |
|---|---|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| RF Power Input | 4 W max. |

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

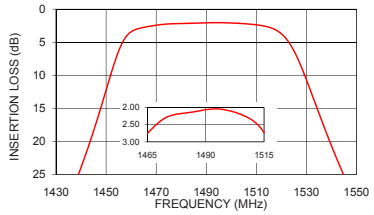
### Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) | Frequency (MHz) | Group Delay (nsec) |
|---|---|---|---|---|
| 1 | 107.36 | 356.22 | 1465 | 23.75 |
| 50 | 93.32 | 405.86 | 1468 | 21.52 |
| 350 | 108.05 | 474.84 | 1470 | 20.51 |
| 750 | 89.67 | 298.94 | 1473 | 19.45 |
| 1100 | 77.42 | 168.32 | 1475 | 18.89 |
| 1430 | 33.06 | 24.76 | 1477 | 18.40 |
| 1433 | 30.54 | 22.25 | 1480 | 17.77 |
| 1443 | 20.72 | 13.12 | 1483 | 17.32 |
| 1460 | 3.42 | 1.16 | 1485 | 17.12 |
| 1465 | 2.76 | 1.30 | 1487 | 17.01 |
| 1490 | 2.06 | 1.22 | 1490 | 16.97 |
| 1515 | 2.73 | 1.36 | 1492 | 17.00 |
| 1518 | 3.20 | 1.51 | 1495 | 17.10 |
| 1540 | 20.69 | 15.42 | 1498 | 17.27 |
| 1550 | 29.34 | 26.88 | 1500 | 17.43 |
| 1551 | 30.12 | 28.00 | 1502 | 17.64 |
| 1555 | 33.12 | 32.77 | 1505 | 18.11 |
| 2000 | 64.03 | 100.47 | 1508 | 18.83 |
| 2800 | 50.60 | 56.83 | 1510 | 19.48 |
| 3300 | 49.31 | 32.57 | 1515 | 21.75 |

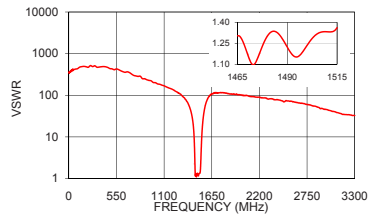
CBP-1490A+
INSERTION LOSS (Full band)



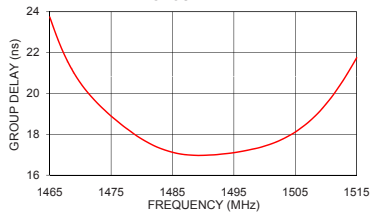

CBP-1490A+
INSERTION LOSS (Pass band)




CBP-1490A+
VSWR




CBP-1490A+
GROUP DELAY



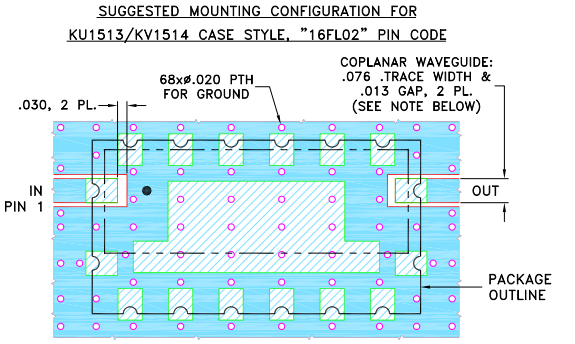

Notes

**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

## Pad Connections

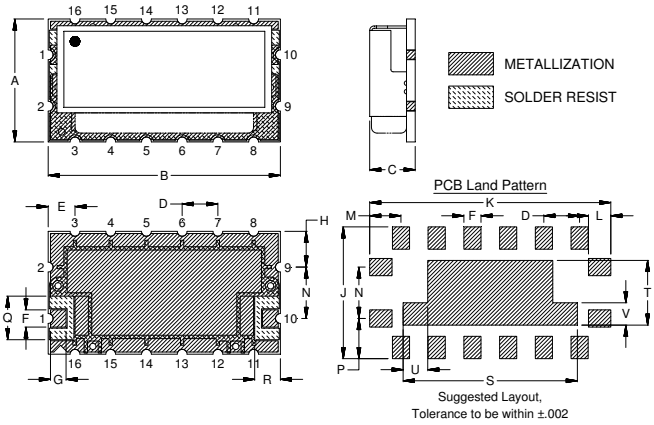
| | |
|---|---|
| INPUT | 1 |
| OUTPUT | 10 |
| GROUND | 2,3,4,5,6,7,8,9,11,12,13,14,15,16 |

***Demo Board MCL P/N: TB-578+***
***Suggested PCB Layout (PL-331)***




NOTE: 1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .060"±.004"; 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.
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

## Outline Drawing




## Outline Dimensions ( inch / mm )

| A | B | C | D | E | F | G | H | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|
| **.550** | **1.040** | **.225** | **.160** | **.120** | **.077** | **.070** | **.160** | **.590** | **1.080** | **.100** |
| 13.97 | 26.24 | 5.72 | 4.06 | 3.05 | 1.96 | 1.78 | 4.06 | 14.99 | 27.43 | 2.54 |

| M | N | P | Q | R | S | T | U | V | | Wt. |
|---|---|---|---|---|---|---|---|---|---|---|
| **.140** | **.230** | **.180** | **.195** | **.115** | **.780** | **.290** | **.110** | **.100** | | grams |
| 3.56 | 5.84 | 4.57 | 4.95 | 2.92 | 19.81 | 7.37 | 2.79 | 2.54 | | 4.8 |