

# Surface Mount Bandpass Filter

## CBP-1490A+

50Ω 1465 to 1515 MHz

### The Big Deal

- High selectivity
- Good Return loss
- Miniature shielded package



Generic photo used for illustration purposes only  
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.

#### 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-1490A+

50Ω 1465 to 1515 MHz



Generic photo used for illustration purposes only  
CASE STYLE: KV1514

### Features

- High selectivity
- Good return loss
- Miniature shielded package

### Applications

- Aeronautical
- Digital audio broadcasting
- Test and measurement

### 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	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

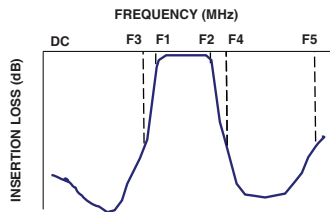
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	4 W max.

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

### Functional Schematic



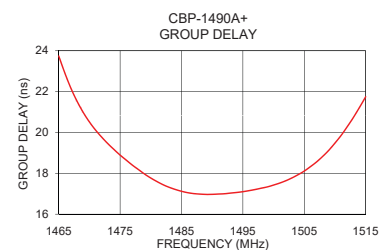
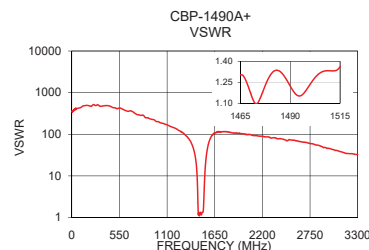
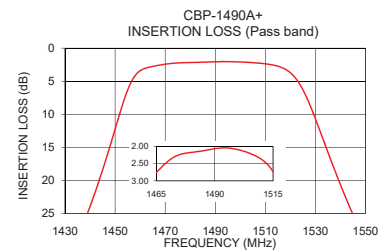
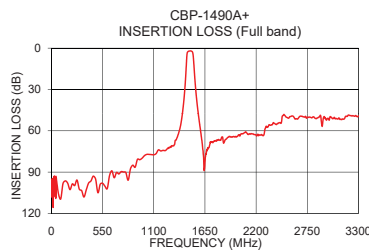
### Typical Frequency Response



### 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

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



#### Notes

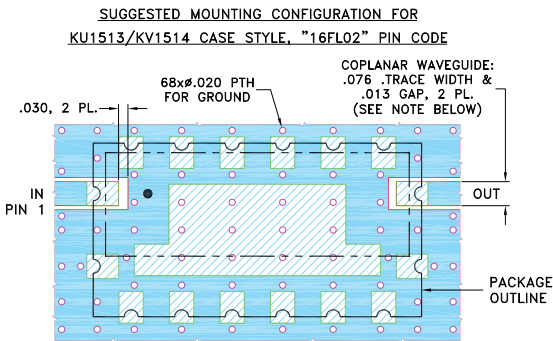
- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' 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

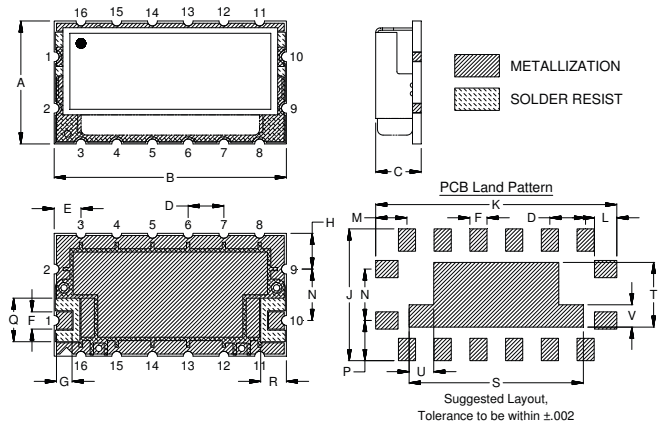
INPUT	1
OUTPUT	10
GROUND	2,3,4,5,6,7,8,9,11,12,13,14,15,16

**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 )

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	

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-Circuits' 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)