Surface Mount

Bandpass Filter

CBP-1228C+

50Ω 1217 to 1238 MHz

Generic photo used for illustration purposes only
CASE STYLE: MP1766

The Big Deal

- Narrow bandwidth
- Excellent Rejection
- High power handling
- Miniature shielded package

Product Overview

CBP-1228C+ is a ceramic-coaxial-resonator based bandpass filter in a shielded package fabricated using SMT technology. This filter offers outstanding close in rejection, low insertion loss and high power handling for use in space and military applications

Key Features

Feature	Advantages
High Selectivity	The CBP-1228C+ filter incorporates High-Q ceramic resonators that enables sharp rejection near passband.
Low Passband VSWR	This filter maintains typical VSWR over 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-1228C+ 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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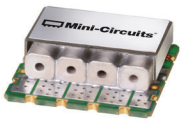
CBP-1228C+



Generic photo used for illustration purposes only

CASE STYLE: MP1766

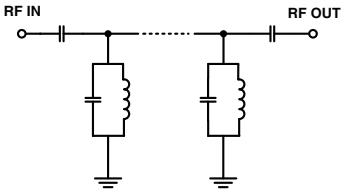
Features

- Narrow bandwidth
- Excellent rejection
- High selectivity
- High power handling
- Miniature shielded package

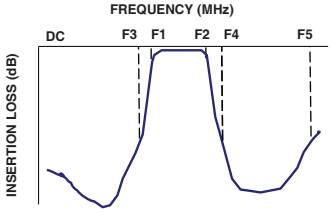
Applications

- Space operation and space research
- GPS
- Military

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	—	—	—	1228	—	MHz
	Insertion Loss	F1-F2	1217-1238	—	1.30	3.00	dB
	VSWR	F1-F2	1217-1238	—	1.50	2.32	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-1140	20	30	—	dB
	VSWR	DC-F3	DC-1140	—	20	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	1330-3000	20	29	—	dB
	VSWR	F4-F5	1330-3000	—	20	—	:1

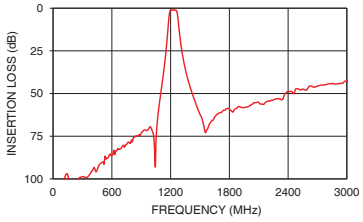
Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	10W

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

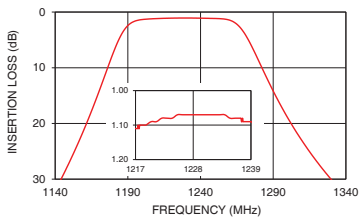
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1	107.94	347.44	1217	10.80
750	79.85	173.72	1218	10.68
1140	32.06	37.77	1219	10.61
1144	30.03	34.75	1220	10.56
1160	20.98	23.49	1221	10.55
1174	11.52	11.24	1222	10.54
1180	7.29	6.28	1223	10.47
1188	3.03	2.43	1224	10.50
1217	1.11	1.04	1225	10.42
1228	1.07	1.07	1226	10.42
1238	1.09	1.16	1227	10.40
1268	3.00	2.72	1228	10.37
1277	7.10	7.63	1229	10.36
1286	12.06	17.39	1230	10.35
1304	20.74	42.38	1232	10.32
1330	30.08	72.39	1233	10.32
1550	71.88	102.19	1234	10.33
2200	54.26	91.43	1235	10.30
2600	47.02	82.73	1237	10.33
3000	42.69	59.91	1238	10.40

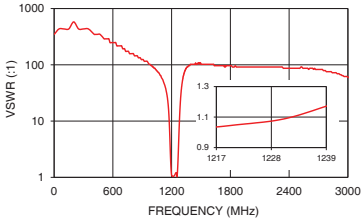
CBP-1228C+
INSERTION LOSS (Full band)



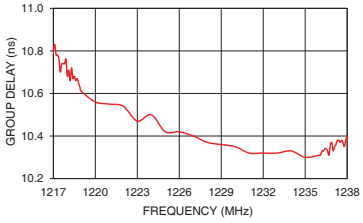
CBP-1228C+
INSERTION LOSS (Pass band)



CBP-1228C+
VSWR



CBP-1228C+
GROUP DELAY



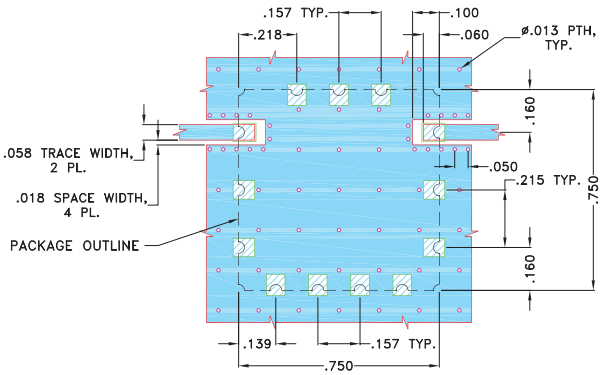
Notes

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

Demo Board MCL P/N: TB-684+
Suggested PCB Layout (PL-373)



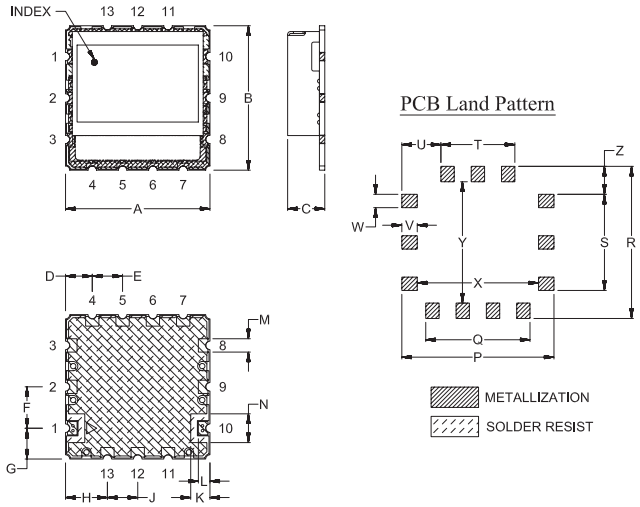
NOTES:

1. 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.
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 SOLDERMASK

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K	L	M	N
.750	**.750**	**.210**	**.139**	**.157**	**.215**	**.160**	**.218**	**.157**	**.100**	**.060**	**.069**	**.149**
19.05	19.05	5.33	3.53	3.99	5.46	4.06	5.54	3.99	2.54	1.52	1.75	3.78

P	Q	R	S	T	U	V	W	X	Y	Z		wt,
.790	**.541**	**.790**	**.499**	**.384**	**.203**	**.080**	**.069**	**.630**	**.630**	**.145**		grams
20.07	13.74	20.07	12.67	9.75	5.16	2.03	1.75	16.00	16.00	3.68		4.6

Note: Please refer to case style drawing for details