

# Surface Mount Bandpass Filter

## CBP-1000F+

50Ω 900 to 1100 MHz

### The Big Deal

- High Q
- Good selectivity
- Low VSWR, 1.3:1 typical
- Miniature shielded package



CASE STYLE: KV1710

### Product Overview

CBP-1000F+ is a coaxial-ceramic-resonator based bandpass filter in a shielded package fabricated using SMT technology. This filter has wider bandwidth and offers low insertion loss with high rejection, low VSWR and high power handling for use in L-band application.

### Key Features

Feature	Advantages
High Q	The CBP-1000F+ 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 1.3:1 typical VSWR over a passband frequency range.
Rugged construction	The CBP-1000F+ 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)



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### Features

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### Applications

- L-band application
- Aviation/Aeronautical
- Cellular & Distance measurement equipment (DME)

### Electrical Specifications at 25°C

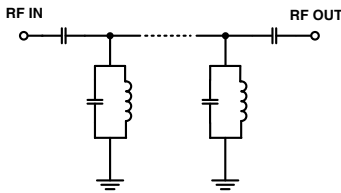
Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	-	-	1000	-	MHz
	Insertion Loss	F1-F2	900-1100	0.9	1.6	dB
	VSWR	F1-F2	900-1100	1.3	1.8	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-790	26	35	dB
	VSWR	DC-F3	DC-790	-	20	:1
Stop Band, Upper	Insertion Loss	F4-F5	1260-1800	28	36	dB
	VSWR	F4-F5	1260-1800	-	20	:1

### Maximum Ratings

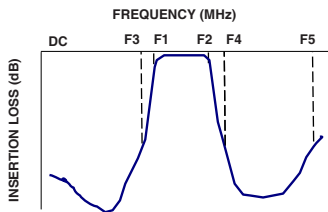
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	10 W max.

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

### Functional Schematic



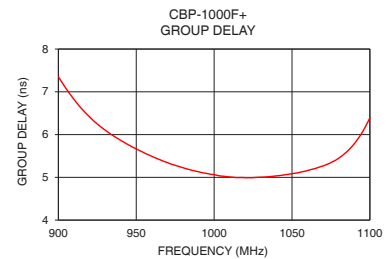
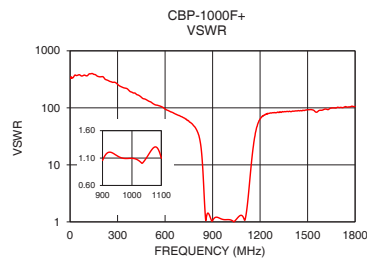
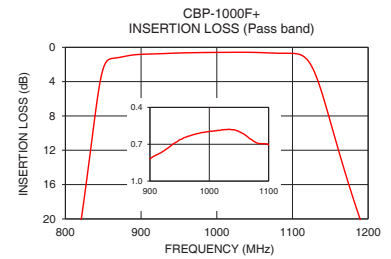
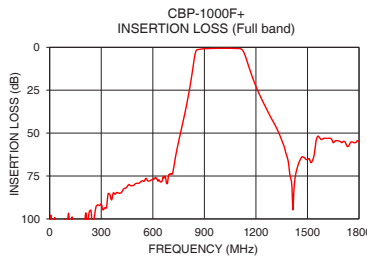
### Typical Frequency Response



### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1	108.05	331.62	900	7.35
100	106.29	365.83	910	6.82
250	104.95	291.42	920	6.42
400	84.91	181.76	930	6.10
750	54.96	58.47	940	5.86
790	36.76	45.36	950	5.67
802	30.73	39.50	960	5.49
820	20.61	27.12	970	5.35
848	3.12	2.48	980	5.22
850	2.47	1.95	1000	5.06
900	0.82	1.06	1010	5.01
1000	0.60	1.10	1020	4.99
1100	0.71	1.10	1030	5.00
1124	2.01	2.58	1040	5.03
1130	3.08	3.84	1050	5.09
1190	20.19	56.06	1060	5.16
1236	30.76	77.14	1070	5.27
1260	35.61	80.25	1080	5.45
1320	47.09	82.41	1090	5.79
1800	54.99	105.78	1100	6.39

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



### Notes

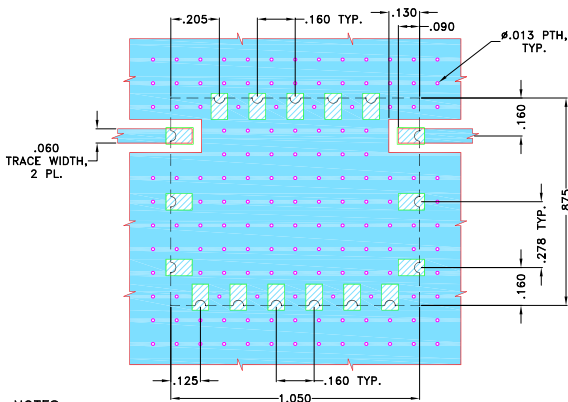
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## Pad Connections

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

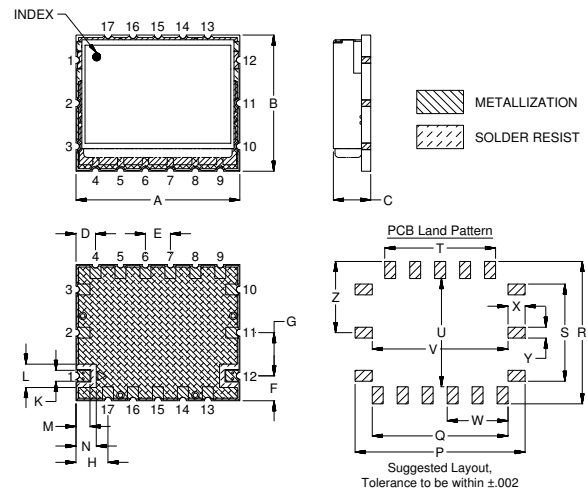
**Demo Board MCL P/N: TB-693+**  
**Suggested PCB Layout (PL-378)**



- 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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