

# Surface Mount Bandpass Filter

## CBP-840C+

50Ω      790 to 890 MHz

### The Big Deal

- Excellent Rejection
- Low passband Insertion Loss
- Miniature shielded package



*Generic photo used for illustration purposes only*  
CASE STYLE: MP1766

### Product Overview

CBP-840C+ 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 aviation, mobile radio, broadband and fixed wireless.

### Key Features

Feature	Advantages
High Selectivity	The CBP-840C+ filter incorporates High-Q ceramic resonators that enables sharp rejection near passband.
Low Passband VSWR	This filter maintains typical VSWR over a narrow 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-840C+ 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.  
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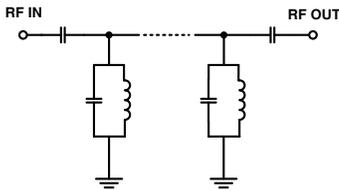
### Features

- Low Insertion loss
- High selectivity
- Miniature shielded package

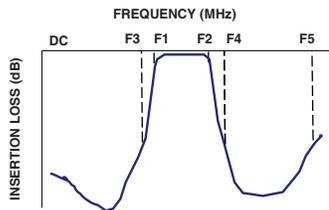
### Applications

- Traffic collision avoidance system (TCAS)
- Aeronautical radio navigation
- Fixed satellite
- Radio astronomy
- Radar and navigation system

### Functional Schematic



### Typical Frequency Response



### Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	—	—	840	—	MHz
	Insertion Loss	F1-F2	790-890	—	0.6	2 dB
	VSWR	F1-F2	790-890	—	1.2	1.78 :1
Stop Band, Lower	Insertion Loss	DC-F3	DC-665	20	30	dB
	VSWR	DC-F3	DC-665	—	20	— :1
Stop Band, Upper	Insertion Loss	F4-F5	1070-1600	20	30	dB
	VSWR	F4-F5	1070-1600	—	20	— :1

### Maximum Ratings

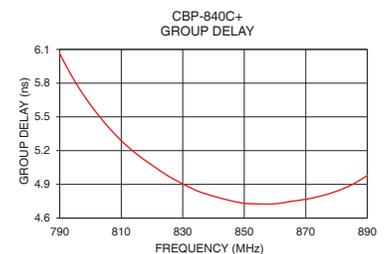
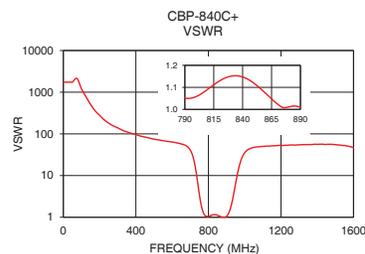
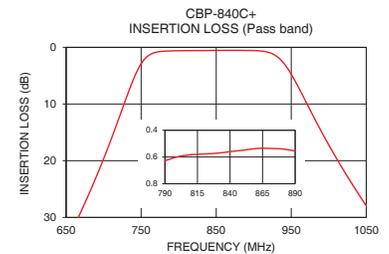
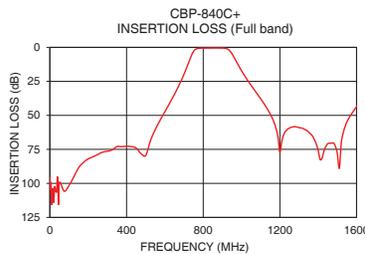
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	5W

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	95.79	1737.18	790	6.06
575	53.61	65.95	795	5.81
665	30.37	54.78	800	5.61
710	16.25	32.88	805	5.43
730	9.00	13.89	810	5.29
745	4.10	5.01	815	5.17
755	2.02	2.58	820	5.07
765	1.07	1.59	825	4.98
790	0.63	1.05	830	4.90
810	0.58	1.09	835	4.84
840	0.56	1.15	840	4.80
890	0.55	1.01	845	4.76
930	1.53	2.30	850	4.73
945	3.69	4.94	855	4.73
960	7.14	10.89	860	4.73
995	16.04	32.74	865	4.75
1070	31.94	48.86	870	4.77
1220	64.07	53.13	880	4.84
1450	70.77	55.74	885	4.90
1600	43.61	46.99	890	4.98

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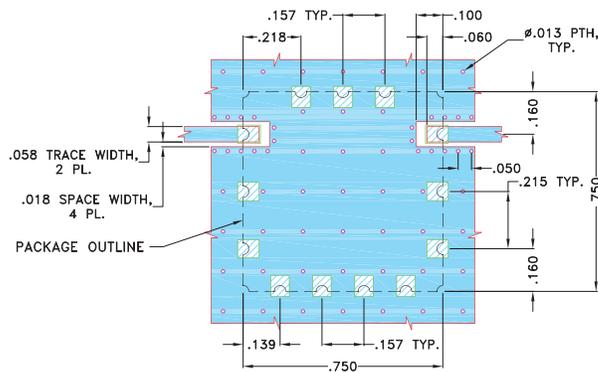
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REV.B  
M174392  
CBP-840C+  
EDU1802  
URJ  
200805  
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## Pad Connections

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)

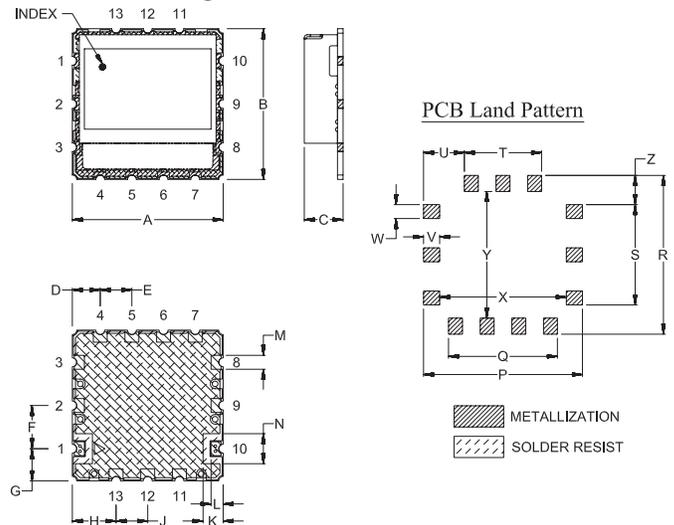


### NOTES:

- 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
.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

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