Surface Mount

Coaxial-Ceramic Resonator Filters and Multiplexers

50Ω DC to 6 GHz



The Big Deal

- Low insertion loss with excellent power handling
- Passbands up to 6 GHz
- Fractional bandwidth from <1 to 25%
- Low profile designs with min. height of 0.120”
- Excellent temperature stability
- Rugged construction to handle demanding environmental conditions

Product Overview

Mini-Circuits’ *Coaxial-Ceramic Resonator filters* offer low insertion loss in very small form factors, using ceramic material with high dielectric constant and superior Q factor. Bandpass and bandstop filters,diplexer and multiplexer designs can be constructed using this technology. Low insertion loss combined with excellent power handling makes these filters well suited for transmitter and receiver signal chains. Advanced filter design and construction can achieve stopband width greater than 3x the center frequency as high as 20 GHz.

All our coaxial-ceramic resonator filters are built with rugged construction, qualified to withstand multiple demanding reflow cycles. Excellent repeatability across units is achieved through precise tuning and process control.

Key Features

Feature	Advantages
Low insertion loss	Low signal loss results in better SNR in signal chain
Fast roll-off	Higher selectivity results in better adjacent channel rejection and dynamic range
Wide stop band	Wide spur-free stopband results in better receiver sensitivity
Excellent power handling	Well suited for transmitter applications
Rugged Construction	These filter assemblies have been qualified over a wide range of thermal, mechanical and environmental conditions including withstanding the stress of extensive solder reflow cycles
Small Size	Very well suited for high performance applications where size is a constraint.
Temperature stability	Very minimal change in electrical performance across temperature makes these filters suitable for a wide range of operating conditions.

Notes
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Surface Mount

Bandpass Filter

50Ω 824 to 849 MHz

CBP4-836C+



Generic photo used for illustration purposes only

CASE STYLE: MP1766

Features

- Low Insertion loss, 1dB typ.
- High rejection, 60dB typ.
- Miniature shielded package

Applications

- Public mobile
- Private land mobile

Electrical Specifications[1] at 25°C

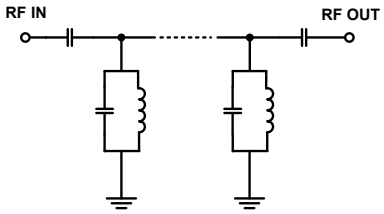
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	-	-	-	836	-	MHz
	Insertion Loss	F1-F2	824 - 849	-	1.0	1.7	dB
	VSWR	F1-F2	824 - 849	-	1.29	1.67	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC - 600	65	75	-	dB
		F3-F4	600 - 760	20	26	-	dB
Stop Band, Upper	Insertion Loss	F5-F6	915 - 1080	20	27	-	dB
		F6-F7	1080 - 1600	48	60	-	dB

1. Measured on Mini-Circuits Characterization Test Board TB-CBP4-836C+

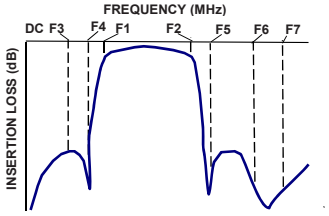
Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	5W at 25°C

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

Functional Schematic



Typical Frequency Response

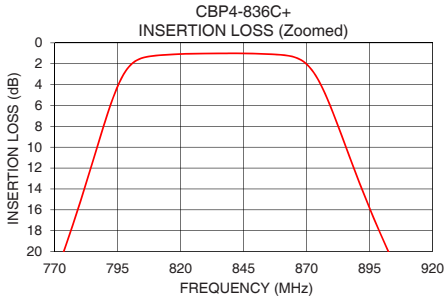


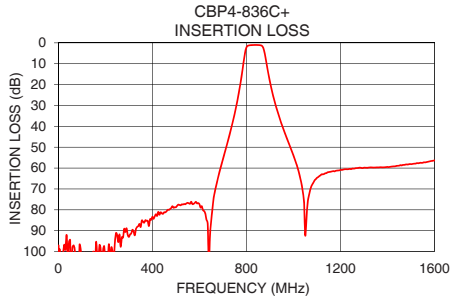
+RoHS Compliant

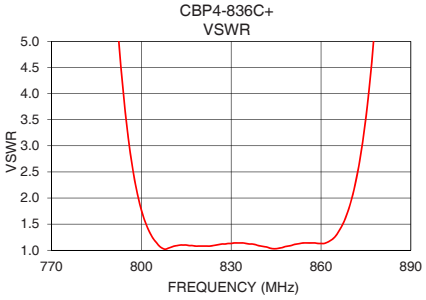
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

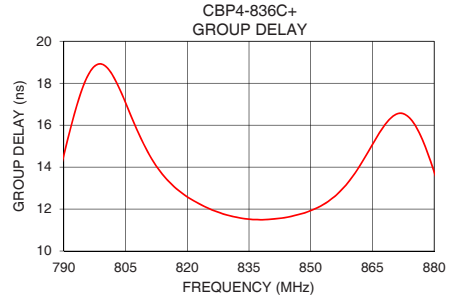
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (ns)
1	97.10	2977.88	824	12.14
10	108.18	12943.40	826	11.96
600	77.34	189.17	828	11.82
760	28.49	43.79	829	11.75
773	20.41	28.52	830	11.70
787	9.90	10.21	831	11.65
797	3.17	2.60	832	11.61
824	1.04	1.09	833	11.57
830	1.02	1.13	834	11.54
836	1.01	1.12	835	11.52
840	1.00	1.08	836	11.50
849	1.03	1.08	837	11.50
874	3.28	3.11	838	11.49
886	10.23	14.07	839	11.50
915	26.04	67.56	840	11.51
925	30.21	82.40	842	11.55
1080	67.85	104.62	844	11.60
1300	59.81	72.72	845	11.64
1500	58.13	58.57	847	11.74
1600	56.33	52.94	849	11.85









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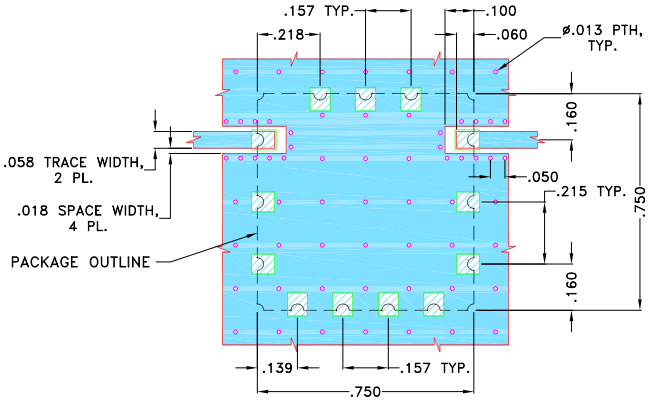
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Pad Connections

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

Demo Board MCL P/N: TB-CBP4-836C+
Suggested PCB Layout (PL-373)



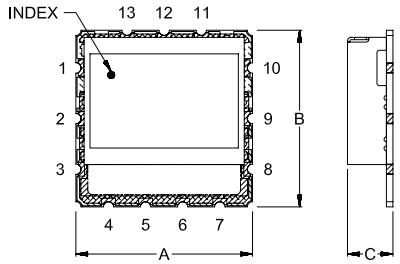
NOTES:

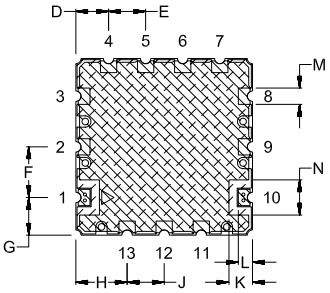
1. TRACE WIDTH IS SHOWN FOR OAK (OAK-602) WITH DIELECTRIC THICKNESS .022"±.0015". COPPER: 1/2 OZ. EACH SIDE.
   FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

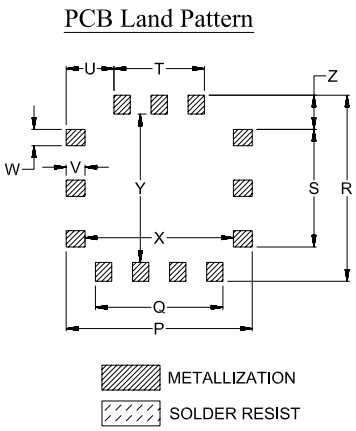
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

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

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