

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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- 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



Surface Mount Bandpass Filter

CBP-1773AF+

50Ω 1678 to 1868 MHz



Generic photo used for illustration purposes only

Features

- High rejection of 55 dB.
- High selectivity
- Miniature shielded package

Applications

- Space operation and research
- Radar/Satellite
- Defense/Military

CASE STYLE: SV2484

Electrical Specifications ⁽¹⁾ at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Center Frequency	-	-	1773	-	MHz	
	Insertion Loss	F1-F2	1678-1868	-	3.0	3.5	dB
	VSWR	F1-F2	1678-1868	-	1.78	2.0	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-1400	55	-	dB	
	VSWR	DC-F3	DC-1400	-	20	-	:1
Stop Band, Upper	Insertion Loss	F4-F5	2150-2700	55	60	-	dB
		F5-F6	2700-3300	40	50	-	dB
	VSWR	F4-F6	2150-3300	-	20	-	:1

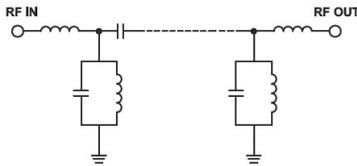
(1) Measured on Mini-Circuits Characterization Test Board TB-1069+.

Maximum Ratings

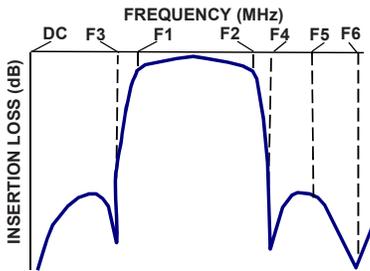
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	5W Max.

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

Functional Schematic



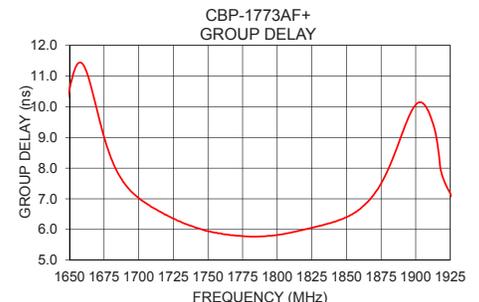
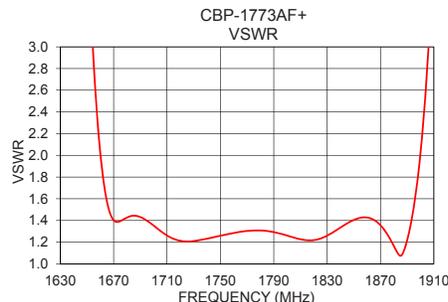
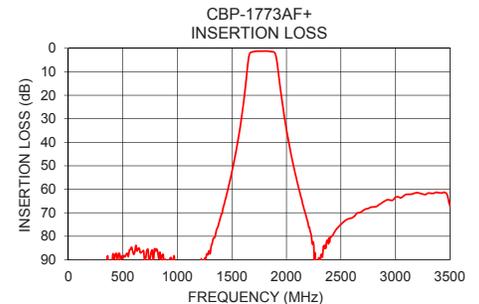
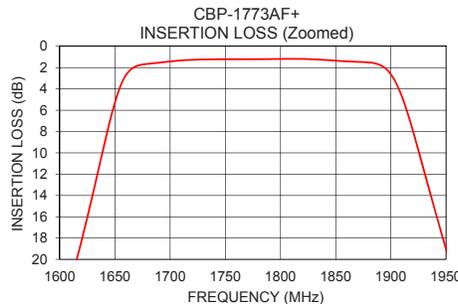
Typical Frequency Response



+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	111.75	2622.04	1678	8.59
10	112.75	798.62	1680	8.34
500	89.34	127.41	1690	7.49
1000	92.48	127.67	1700	7.03
1400	71.46	71.17	1710	6.72
1500	52.54	55.12	1720	6.48
1585	30.77	35.43	1730	6.26
1615	20.15	23.86	1740	6.08
1638	10.25	10.11	1750	5.95
1655	3.72	2.86	1760	5.86
1678	1.66	1.41	1770	5.80
1773	1.21	1.31	1773	5.79
1868	1.45	1.38	1779	5.77
1905	3.50	2.80	1800	5.82
1926	10.15	11.11	1810	5.90
1956	21.11	29.90	1820	6.00
1986	30.55	40.15	1830	6.11
2150	66.48	52.08	1840	6.23
2700	69.16	52.29	1860	6.67
3300	61.63	48.64	1868	7.04



Notes

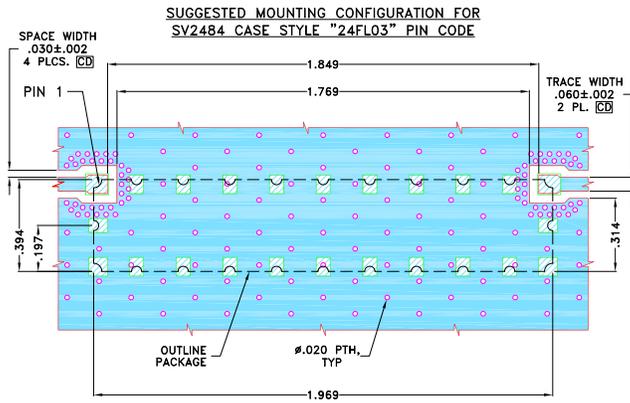
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Pad Connections

INPUT	1
OUTPUT	11
GROUND	2 - 10, 12 - 24

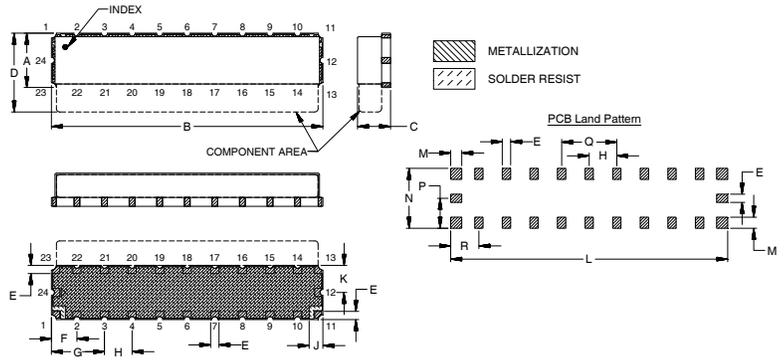
Demo Board MCL P/N: TB-1069+ Suggested PCB Layout (PL-604)



NOTES:

- TRACE WIDTH IS SHOWN FOR REOGERS (RO4350B), WITH DIELECTRIC THICKNESS .030" ± .002". 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.
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Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K
.394	1.969	.240	.492	.060	.184	.384	.200	.100	.197
10.00	50.00	6.10	12.50	1.52	4.68	9.76	5.08	2.54	5.00
L	M	N	P	Q	R	Wt.			
2.009	.080	.434	.217	.400	.204	grams			
51.02	2.03	11.02	5.51	10.16	5.19	7.0			

Note: Please refer to case style drawing for details

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