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 3 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

All our coaxial-ceramic resonator filters are built with rugged construction, qualified to withstand multiple demanding reflow cycles. Custom integrated assembly with LNA in greatly simplifying system integration. They can be realized in small form factors with high-quality, precise machining for applications where size is critical. 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.

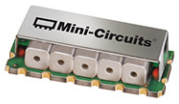
Notes
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Surface Mount

Bandpass Filter

50Ω 1165 to 1201 MHz

CBP-1183A+



CASE STYLE: KV1514

Features

- Fast roll-off
- Low passband IL
- Miniature shielded package

Applications

- Aviation / Aeronautical
- Test and measurement

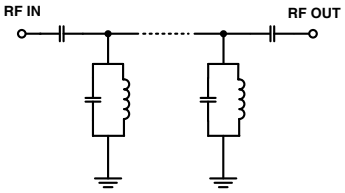
Electrical Specifications at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	-	-	-	1183	-	MHz
	Insertion Loss	F1-F2	1165-1201	-	3.0	4.0	dB
	VSWR	F1-F2	1165-1201	-	1.7	2.3	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-1130	20.0	30.0	-	dB
	VSWR	DC-F3	DC-1130	-	20.0	-	:1
Stop Band, Upper	Insertion Loss	F4-F5	1235-2800	20.0	30.0	-	dB
	VSWR	F4-F5	1235-2800	-	20.0	-	:1

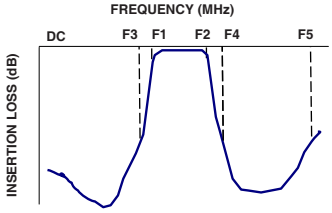
Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	10 W max.

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

Functional Schematic



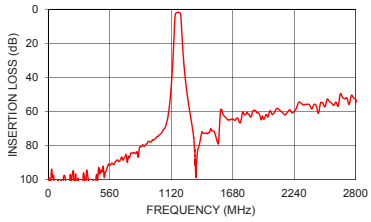
Typical Frequency Response



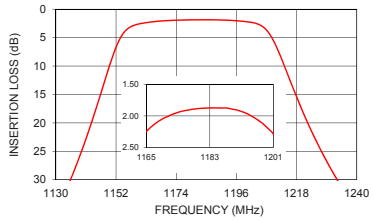
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1	107.14	348.50	1165	25.03
500	92.11	308.94	1167	23.89
1000	74.51	90.30	1169	23.01
1130	35.95	25.46	1171	22.31
1135	30.43	20.74	1173	21.73
1143	20.00	12.31	1175	21.29
1148	12.41	6.61	1177	20.92
1156	3.54	1.32	1179	20.66
1165	2.25	1.11	1181	20.46
1183	1.87	1.15	1183	20.39
1201	2.28	1.17	1185	20.39
1206	3.22	1.51	1187	20.50
1214	10.57	7.50	1189	20.69
1222	19.95	20.16	1191	20.97
1235	31.74	40.92	1193	21.37
1500	71.39	82.37	1195	21.88
1750	66.55	77.22	1197	22.57
2000	63.26	75.80	1199	23.63
2500	54.97	93.48	1200	24.31
2800	53.05	95.37	1201	25.15

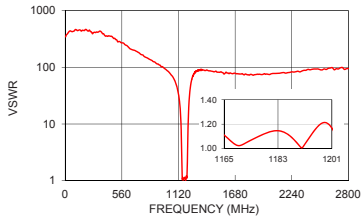
CBP-1183A+
INSERTION LOSS (Full band)



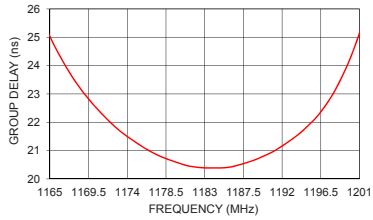
CBP-1183A+
INSERTION LOSS (Pass band)



CBP-1183A+
VSWR



CBP-1183A+
GROUP DELAY



+RoHS Compliant

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

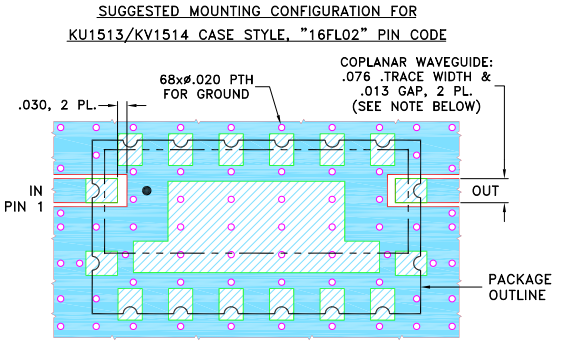
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Pad Connections

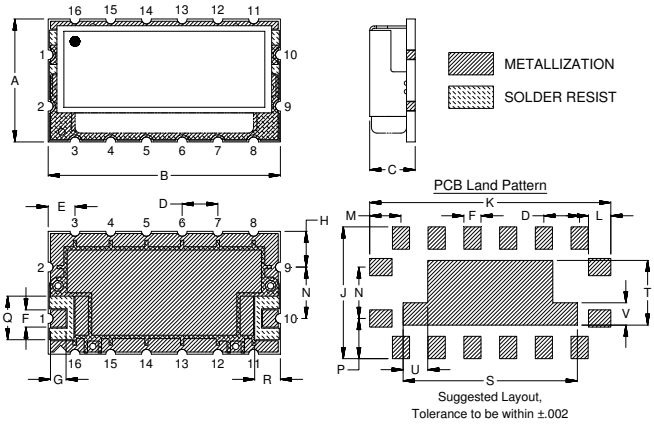
INPUT	1
OUTPUT	10
GROUND	2,3,4,5,6,7,8,9,11,12,13,14,15,16

Demo Board MCL P/N: TB-578+
Suggested PCB Layout (PL-331)



NOTE: 1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .060"±.004"; 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 SOLDER MASK

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K	L
.550	**1.040**	**.225**	**.160**	**.120**	**.077**	**.070**	**.160**	**.590**	**1.080**	**.100**
13.97	26.24	5.72	4.06	3.05	1.96	1.78	4.06	14.99	27.43	2.54

M	N	P	Q	R	S	T	U	V		Wt.
.140	**.230**	**.180**	**.195**	**.115**	**.780**	**.290**	**.110**	**.100**		grams
3.56	5.84	4.57	4.95	2.92	19.81	7.37	2.79	2.54		4.8

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