Surface Mount

Bandpass Filter

BPF-C510+

50Ω 20 to 1000 MHz

The Big Deal

- Sharp roll-off
- Wide bandwidth
- Good VSWR
- Miniature shielded package



CASE STYLE: HU1186

Product Overview

The BPF-C510+ is a wide band filter in a small shielded package (size of 0.87" x 0.80" x 0.25") fabricated using SMT technology. This filter offers sharp roll-off and rejection of 40dB Typ. for use in receiver front end applications..

Key Features

Feature	Advantages
Sharp roll-off	BPF-C510+ attenuates spurious signals and rejects harmonics for wide band of frequency.
Good VSWR	This filter maintains typical VSWR over passband frequency range making this filter easier to integrate into receiver and transmitter RF chains with less concerns for in band frequency ripple.
Small size, 0.87" x 0.80" x 0.25"	The unique surface mount package enables the BPF-C510+ to be used in compact design.

Notes
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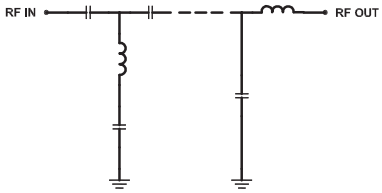
Features

- Sharp roll-off
- Wide bandwidth
- Good VSWR
- Miniature shielded package

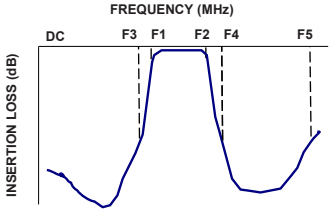
Applications

- Test equipment
- Receiver front end applications
- Harmonic rejection

Functional Schematic



Typical Frequency Response



+RoHS Compliant

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

Electrical Specifications at 25°C

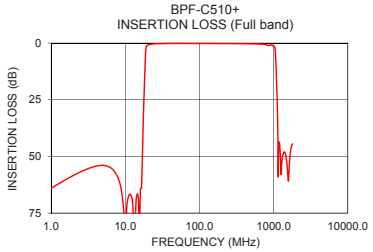
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	—	—	—	510	—	MHz
	Insertion Loss	F1-F2	20-1000	—	1.5	2.7	dB
	VSWR	F1-F2	20-1000	—	1.6	2.01	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-17	20	29	—	dB
	VSWR	DC-F3	DC-17	—	20	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	1150-1800	25	38	—	dB
	VSWR	F4-F5	1150-1800	—	20	—	:1

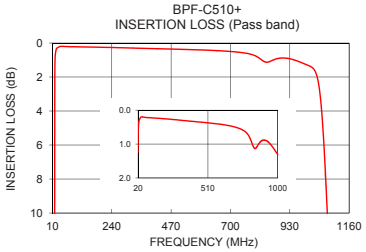
Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	1 W

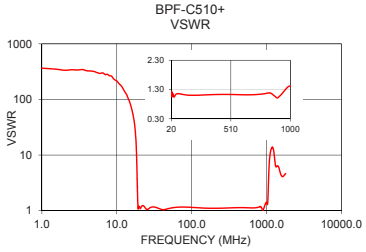
Permanent damage may occur if any of these limits are exceeded.

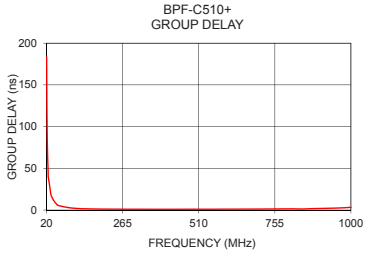
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1.0	64.03	364.20	20	183.43
10.0	84.00	214.59	21	115.45
17.0	49.57	41.79	22	83.73
17.5	33.17	30.88	23	65.68
18.0	20.49	19.11	24	53.99
18.5	9.11	7.01	25	39.97
18.9	3.08	2.10	30	28.00
20.0	0.95	1.18	40	13.22
100.0	0.22	1.14	50	7.85
250.0	0.27	1.11	75	3.92
510.0	0.37	1.13	100	2.42
750.0	0.58	1.14	200	1.14
1000.0	1.31	1.41	300	0.96
1048.0	3.12	1.94	400	0.93
1080.0	11.63	6.09	500	0.96
1102.0	20.22	9.09	600	1.03
1124.0	30.61	11.09	800	1.39
1150.0	56.84	12.66	900	1.88
1650.0	50.80	4.08	950	2.31
1800.0	44.46	4.62	1000	3.27









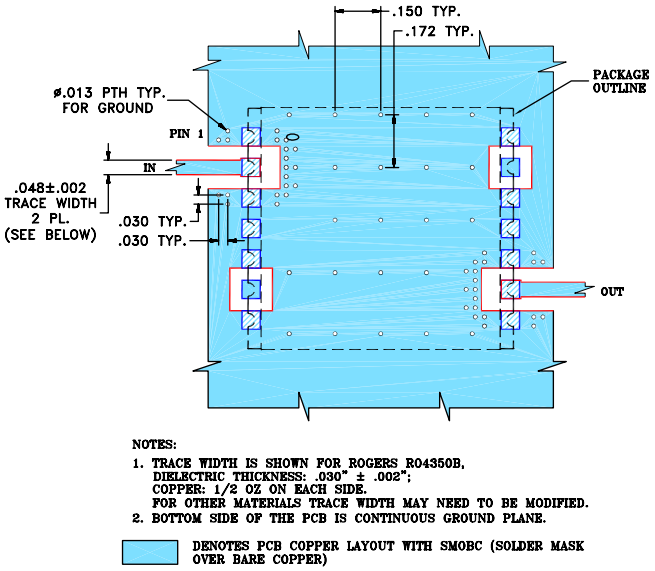
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Pad Connections

INPUT	2
OUTPUT	9
GROUND	1,3,4,5,7,8,10,11,12,14
NOT CONNECTED	6,13

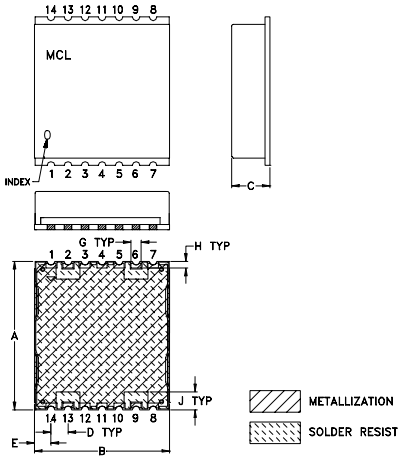
Demo Board MCL P/N: TB-500+
Suggested PCB Layout (PL-294)



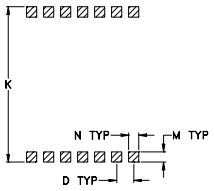
NOTES:
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B, DIELECTRIC THICKNESS: .030" ± .002"; COPPER: 1/2 OZ ON EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

Outline Drawing



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H
.870	.800	.25	.100	.097	--	.060	.040
22.10	20.32	6.35	2.54	2.46	--	1.52	1.02

J	K	L	M	N	P		wt
.105	.910	--	.060	.060	--		grams
2.67	23.11	--	1.52	1.52	--		2.85

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