

VIDEO LOWPASS FILTERS

SERIES ATLW Stopband Ratio @45dB = 1.32

ATCL Stopband Ratio @45dB = 1.14

ATBW Stopband Ratio @45dB = 1.08

ABW Stopband Ratio @42dB = 1.066

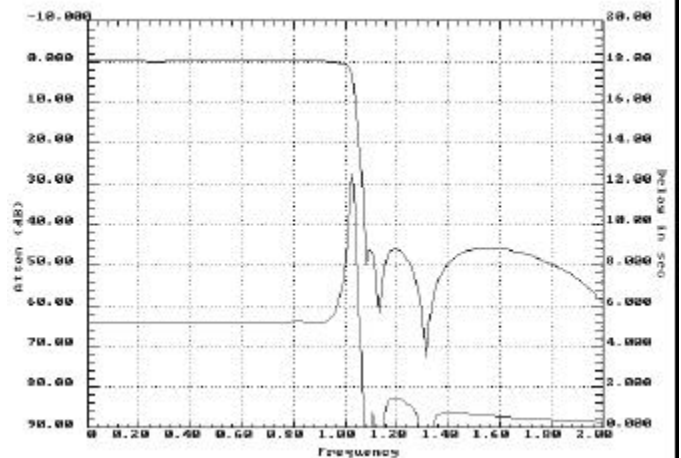
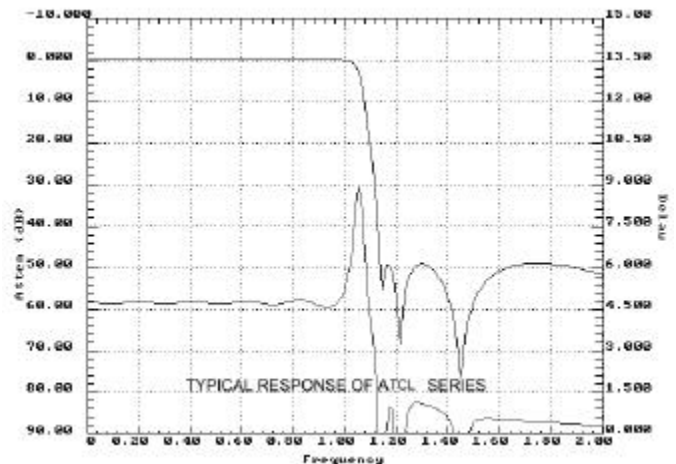
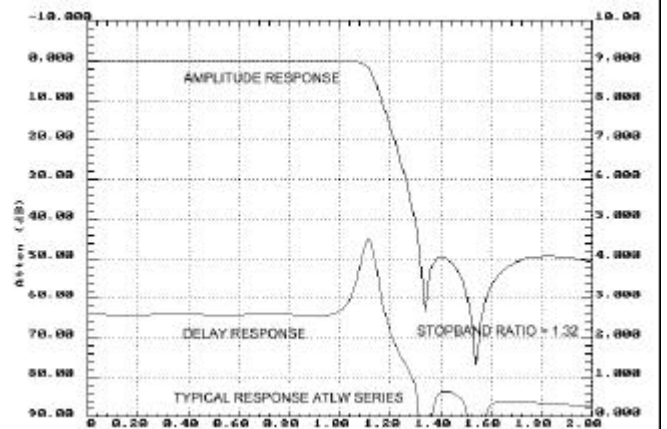
For many years amplitude, Delay and phase corrected filters have found applications in Television Broadcasting, Cable transmission, Direct Satellite Transmission, Analog and Digital Image Processing, Analog to Digital conversion and Computer Graphics. Allen Avionics offers four basic shape factors or stopband ratios in their range of Video Filters.

ATLW General purpose filters include amplitude, Phase and Group Delay equalization to improve pulse and bar response. Smooth slower roll off reduces ringing. Can be used as in any Video bandwidth limiting application. Also used as anti aliasing pre filters in analog to digital conversion applications or as post aliasing filters with the addition of $\sin x/x$ correction.

ATCL More complex filter for applications requiring a sharper cutoff rate. The tight control of amplitude, phase and delay of the ATCL series makes them ideal for high performance analog and digital applications.

ATBW Almost a Brickwall Filter. The ATBW is a good compromise for sharpness, ringing, insertion loss and cost. The ATBW stopband ratio of 1.08 is close to the ABW series Brickwall ratio of 1.066 but has less ringing, Delay distortion and insertion loss.

ABW A true Brickwall Filter. The ABW series is the sharpest cutoff Video filter available anywhere. Tight control of the Amplitude, Phase and Delay Characteristics create a filter unmatched for sharpness, low ringing, insertion loss and cost. Typical NTSC applications use this filter to pass 4.20MHz and reject everything above 4.48MHz which requires a stopband ratio of 1.066. **See Brickwall data sheet.**

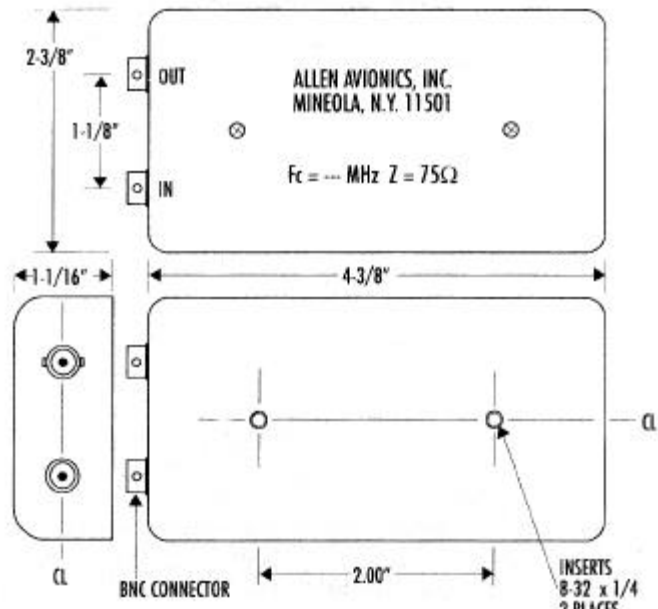
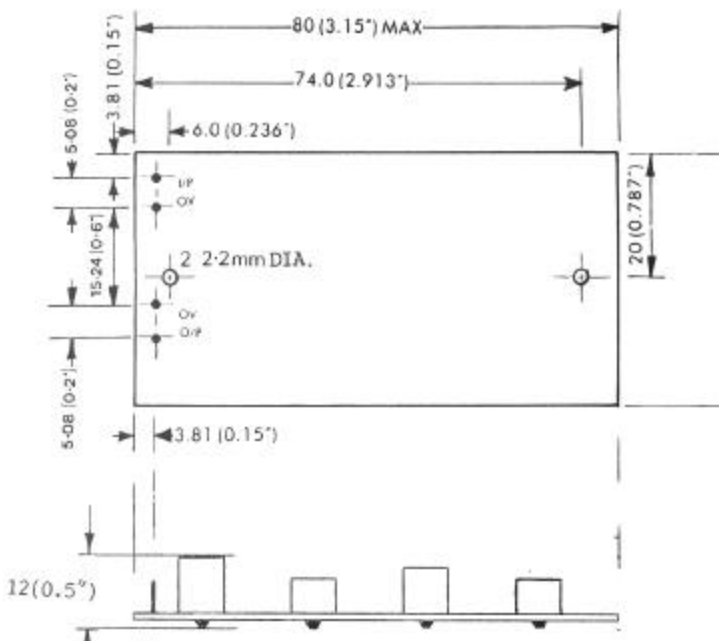


Basic ATLW Specifications

ATLW PART NUMBER	Fp MHz Ap < .2db	F3dB MHz	Fs, MHz As >45dB	Gd, ns	FGd MHz	Pd ns
ATLW0P46	0.46	0.52	0.61	220	0.44	5500
ATLW0P93	0.93	1.03	1.22	110	0.89	2750
ATLW1P40	1.40	1.55	1.85	75	1.33	1833
ATLW1P87	1.87	2.06	2.47	55	1.78	1375
ATLW2P34	2.34	2.58	3.09	45	2.22	1100
ATLW2P57	2.57	2.84	3.40	40	2.45	1000
ATLW2P80	2.80	3.09	3.70	37	2.67	917
ATLW2P92	2.92	3.22	3.86	36	2.77	881
ATLW3P27	3.27	3.61	4.32	32	3.11	786
ATLW3P74	3.74	4.12	4.94	28	3.56	688
ATLW3P97	3.97	4.38	5.25	26	3.78	647
ATLW4P03	4.03	4.44	5.32	25	3.83	638
ATLW4P21	4.21	4.64	5.56	25	4.00	611
ATLW4P68	4.68	5.15	6.18	25	4.45	550
ATLW4P91	4.91	5.41	6.48	21	4.67	524
ATLW5P15	5.15	5.67	6.80	20	4.90	500
ATLW5P43	5.43	5.98	7.17	19	5.16	474
ATLW5P61	5.61	6.19	7.40	18	5.34	458
ATLW6P08	6.08	6.70	8.03	17	5.79	423
ATLW6P55	6.55	7.22	8.65	16	6.23	393
ATLW7P02	7.02	7.73	9.27	15	6.68	367
ATLW7P49	7.49	8.25	9.89	14	7.12	344
ATLW7P95	7.95	8.76	10.50	13	7.57	324
ATLW8P42	8.42	9.28	11.12	12	8.01	306
ATLW8P89	8.89	9.79	11.74	12	8.46	289
ATLW9P36	9.36	10.31	12.36	12	8.90	275

PERFORMANCE
 Passband Flatness: Ripple Less than +/- .1dB
 Insertion Loss @ 100KHz = 1.0dB Max
 Impedance = 75 Ohms unbalanced
 Return Loss = -20dB typical
 Group Delay Ripple less than +/- 2% of midband delay
 Stopband Attenuation = 45dB Min
 Stopband Ratio = 1.32 @ -45dB
 Temperature Range Operating -20 to +65 Degrees Celsius

KEY
Fp Frequency at which amplitude ripple exceeds Ap (peak to peak ripple)
Fs Frequency at which stopband attenuation exceeds As
F3dB Nominal Frequency at which attenuation is 3dB
Pd Nominal Propagation delay through filter in Nanoseconds
Gd Typical passband group delay ripple, Nanoseconds peak-to-peak
FGd Frequency at which group delay ripple limits is exceeded, MHz
Ap Peak-to-peak passband ripple, dB
As Minimum stopband attenuation, dB



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Basic ATCL Specifications

ATCL PART NUMBER	Fp MHz Ap < .2db	Fs, MHz As >45dB	Gd, ns	FGd MHz	Pd ns
ATCL0P46	0.46	0.53	265	0.43	8846
ATCL0P93	0.93	1.06	134	0.86	4466
ATCL1P40	1.40	1.60	89	1.30	2967
ATCL1P87	1.87	2.13	67	1.73	2233
ATCL2P34	2.34	2.66	53	2.17	1782
ATCL2P57	2.57	2.92	49	2.39	1619
ATCL2P80	2.80	3.19	45	2.60	1488
ATCL2P92	2.92	3.32	43	2.71	1428
ATCL3P27	3.27	3.72	38	3.04	1275
ATCL3P74	3.74	4.26	33	3.48	1114
ATCL3P97	3.97	4.52	32	3.69	1050
ATCL4P03	4.03	4.59	31	3.75	1035
ATCL4P21	4.21	4.80	30	3.91	990
ATCL4P68	4.68	5.34	27	4.35	890
ATCL4P91	4.91	5.59	25	4.57	849
ATCL5P15	5.15	5.87	24	4.79	810
ATCL5P43	5.43	6.19	23	5.05	768
ATCL5P61	5.61	6.39	22	5.22	743
ATCL6P08	6.08	6.94	21	5.65	686
ATCL6P55	6.55	7.47	19	6.09	637
ATCL7P02	7.02	8.00	18	6.52	594
ATCL7P49	7.49	8.54	17	6.96	557
ATCL7P95	7.95	9.07	16	7.40	524
ATCL8P42	8.42	9.60	15	7.83	495
ATCL8P89	8.89	10.13	14	8.26	468
ATCL9P36	9.36	10.67	13	8.70	445

PERFORMANCE

Passband Flatness: Ripple Less than +/- .1dB
 Insertion Loss @ 100KHz = 2.5dB Max
 Impedance = 75 Ohms unbalanced
 Return Loss = -20dB typical
 Group Delay Ripple less than +/- 1.5% of midband delay
 Stopband Attenuation = 45dB Min
 Stopband Ratio = 1.14@-45dB
 Temperature Range Operating 0 to +50 Degrees Celsius

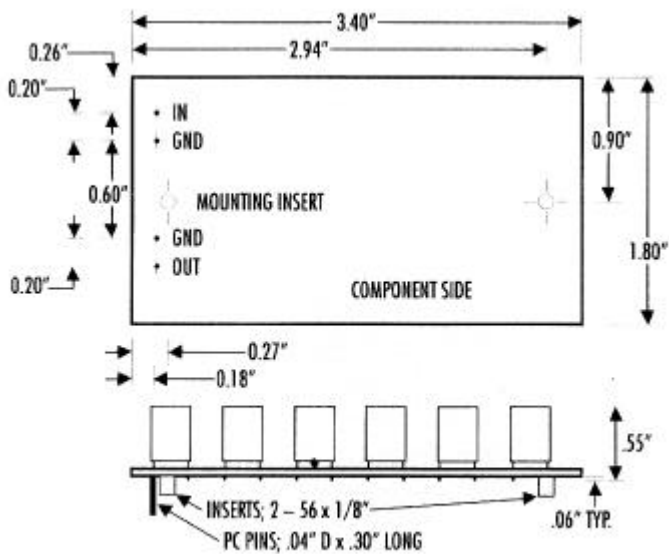
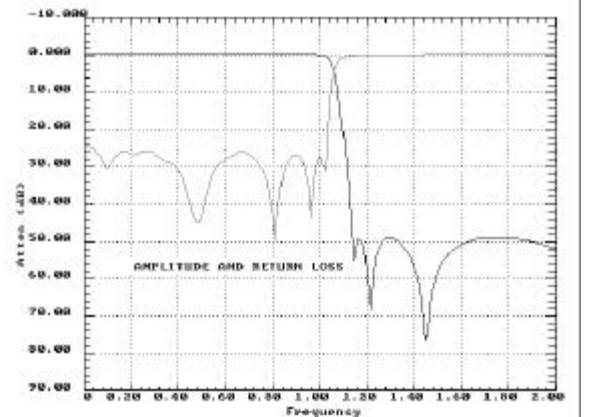
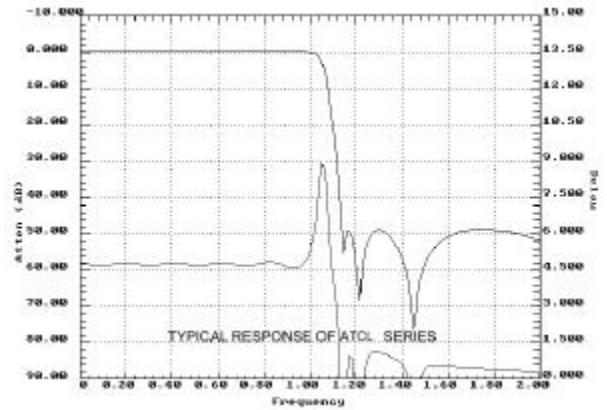
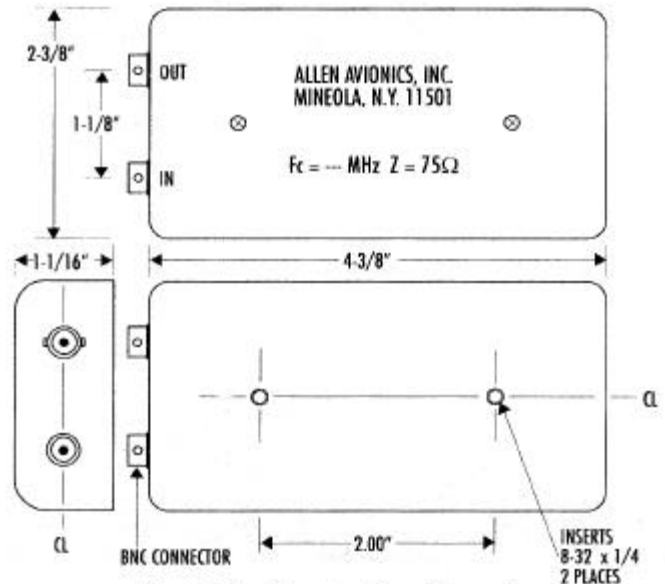


Figure 1: Open Construction Dimensions



Closed Box Construction Dimensions

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Basic ATBW Specifications

ATBW PART NUMBER	Fp MHz Ap < .2db	Fs, MHz As >45dB	Gd, ns	FGd MHz	Pd ns
ATBW0P46	0.46	0.49	265	0.42	10612
ATBW0P93	0.93	1.00	140	0.86	5591
ATBW1P40	1.40	1.52	93	1.30	3710
ATBW1P87	1.87	2.02	70	1.72	2780
ATBW2P34	2.34	2.53	56	2.16	2222
ATBW2P57	2.57	2.78	51	2.37	2023
ATBW2P80	2.80	3.03	47	2.59	1857
ATBW2P92	2.92	3.15	45	2.70	1780
ATBW3P27	3.27	3.54	40	3.02	1590
ATBW3P74	3.74	4.04	35	3.45	1390
ATBW3P97	3.97	4.29	33	3.67	1310
ATBW4P03	4.03	4.35	33	3.72	1290
ATBW4P21	4.21	5.63	31	3.89	1235
ATBW4P68	4.68	5.05	28	4.32	1111
ATBW4P91	4.91	6.54	27	4.54	1059
ATBW5P15	5.15	5.56	26	4.76	1010
ATBW5P43	5.43	5.87	24	5.02	957
ATBW5P61	5.61	6.05	23	5.18	926
ATBW6P08	6.08	6.56	21	5.62	855
ATBW6P55	6.55	7.08	20	6.05	793
ATBW7P02	7.02	7.59	19	6.49	740
ATBW7P49	7.49	8.09	18	7.92	694
ATBW7P95	7.95	8.59	17	7.35	654
ATBW8P42	8.42	9.10	16	8.78	617
ATBW8P89	8.89	9.60	15	8.22	584
ATBW9P36	9.36	10.11	14	8.65	555

PERFORMANCE

Passband Flatness: Ripple Less than +/- .1dB
 Insertion Loss @ 100KHz =4dB Max
 Impedance =75 Ohms unbalanced
 Return Loss = -20dB typical
 Group Delay Ripple less than +/- 1.25% of midband delay
 Stopband Attenuation = 45dB Min
 Stopband Ratio = 1.08@-45dB
 Temperature Range Operating 0 to +50 Degrees Celsius

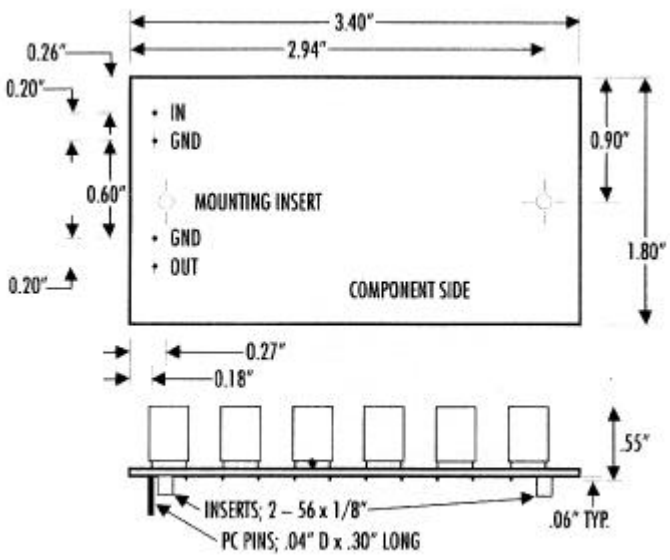
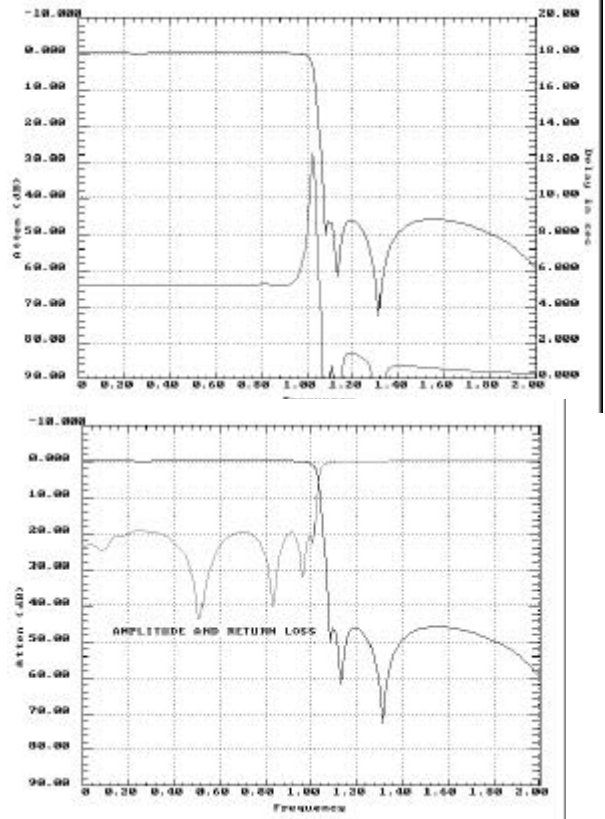
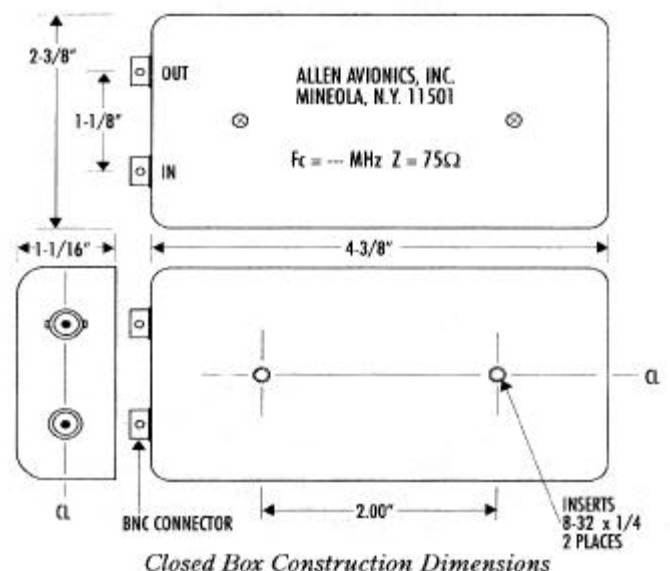


Figure 1: Open Construction Dimensions



Closed Box Construction Dimensions

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