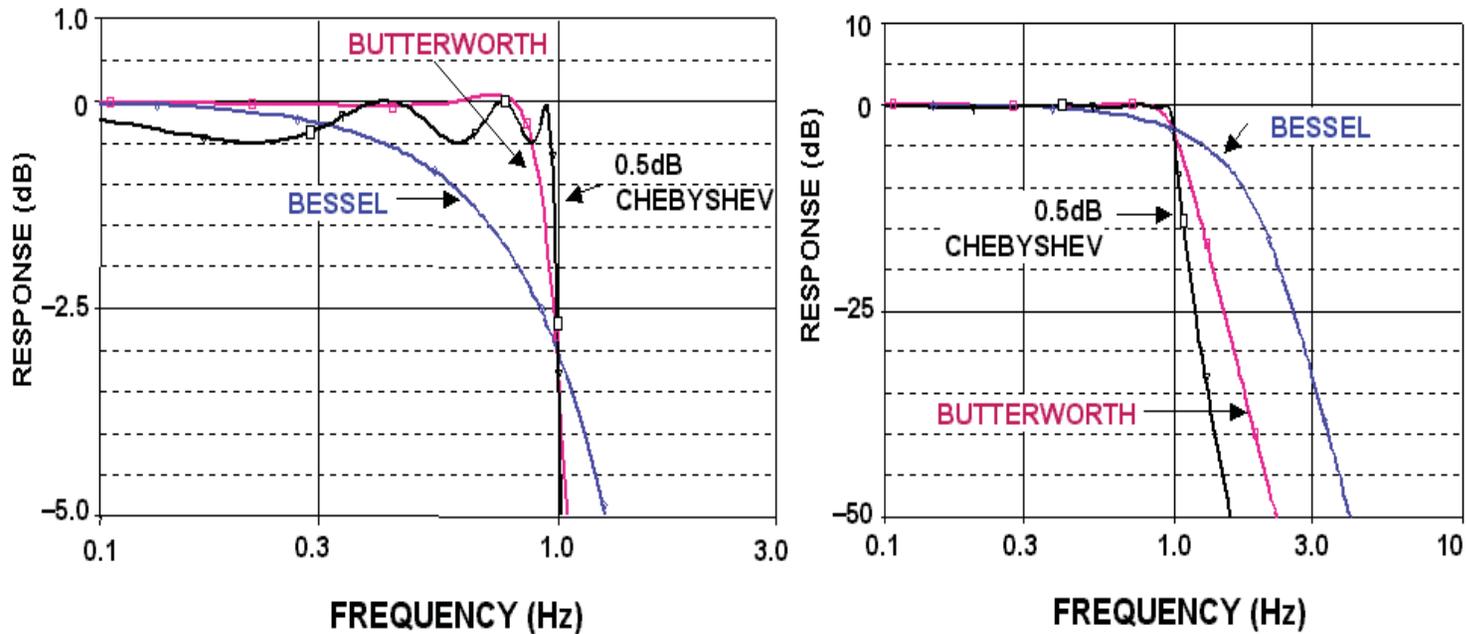


## Comparison of All-Pole Responses

The responses of several all-pole filters, namely the Bessel, Butterworth, and Chebyshev (in this case of 0.5 dB ripple) will now be compared. An 8 pole filter is used as the basis for the comparison. The responses have been normalized for a cutoff of 1 Hz. Comparing Figures 8.13 and 8.14 below, it is easy to see the trade-offs in the response types. Moving from Bessel through Butterworth to Chebyshev, notice that the amplitude discrimination improves as the transient behavior gets progressively poorer.



**Figure 8.13:** Comparison of Amplitude Response of Bessel, Butterworth, and Chebyshev Filters

