Subject: Inductive vs non-inductive resistors
Posted by Adrian Mack on Mon, 26 May 2003 08:13:03 GMT
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Hey Wayne,I noticed you reccomended non-inductive resistors for the crossover. The only ones I can get here are wirewound, and inductive type, I assume these could be used as well? Have done a search on this forum, and gotten a number of varying answers, but it seems to be that theres not much of a difference as the inductance is very small anyway, and close enough to a pure resistance. I could get non-inductive resistors, but I would have to order them from an interstate location, and I would rather just buy everything from my electronics store, as I can get everything else there. For the 40W resistors needed in the Pi Crossover, the document states use four 10W resistors in parallel: this would mean though very high resistor impedance values, series would be an easier way to get 40W, and smaller value per resistor. This is fine?As for available inductors here.... the ones I can get state a 100W power handling at minimum and have an 0.8mm wire diameter, and an air core. For the Pi Crossover, one of the inductors is reccomended 10A rating.... current rating is not available on these inductors though. Would these work fine? (BTW: I would like approx 100W total system power handling for the xover..). (L)DCR is stated, and range from 0.25ohm to 1.4ohm depending on which value inductor you buy. Capacitors cost so damn much in Australia... :-(Much more than at parts express. Just getting onto C5, it says use Le/Re^2. For Alpha 6, this would be 0.19/7.2^2 = 0.0037uF.... this is a very very small value, I cant find this in the shops. Is this value actually correct?Thanks!Adrian

Subject: Re: Inductive vs non-inductive resistors
Posted by Wayne Parham on Mon, 26 May 2003 10:05:41 GMT
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For crossover resistors, I'd prefer non-inductive parts, but a wire-wound resistor will do in a pinch. The inductance of a wire-wound resistor is pretty small, probably not really an issue in this circuit at audio frequencies. But generally, non-inductive resistors at this size cost no more than standard wirewounds. I like to use four 10-watt resistors in series/parallel to form a 40 watt part for the R1 and R2 values in the tweeter circuit. I use a 100 watt resistor in the Zobel woofer damper.As for inductors, I prefer air core coils for values under 3mH or so, and low hysteresis lamenated iron cores for large inductors. I usually don't go smaller than 18 guage, sometimes even 15 guage. The DC resistance is what's important. Usually, the smaller resistance the better.About the formula to find the value of C5 for your Zobel, understand that voice coil inductance is usually given in millihenries, which is 1/1000th of a Henry. So if Le is 0.17mH, then it is 0.00017H.

Subject: Re: Inductive vs non-inductive resistors

Posted by Adrian Mack on Tue, 27 May 2003 09:34:54 GMT
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Ok, thanks :-) I think I'll go for the normal wirewound ones for now, and then get non-inductive later once I've listened to them. The crossover will end up costing about 280 aussie dollars.... CAPS cost like double the price over here! Very annoying! Its AU$13 for a 250VDC, 10uf cap.... so that converts to US$8.50. 10uf is also the biggest I can find in 250VDC caps, so I wont get any savings by purchasing a single 50uf cap (needed for 1KHz), because I cant get those here, so I have to use five 10uf caps in parallel for 50uF :P making it heaps more expensive. This is going to be fun.... lol. Adrian