Subject: Darn it ! This shoulda worked !
Posted by Andy G on Thu, 06 Dec 2001 22:23:43 GMT
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I tried the circuit shown. The aim was to give the option of either a bright top-end or a normal top end. I'm sure i wired it up properly, but there is basically no discernable difference between bright (about 13.7ohms in series) and normal (34ohms in series). I'm puzzled :-?piezo is ksn 1142/1151 horn

Subject: Re: Darn it ! This shoulda worked !
Posted by Wayne Parham on Fri, 07 Dec 2001 01:02:25 GMT
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The circuit you've shown basically has 10 ohms or 30 ohms in series with a primarily capacitive device having more than 1K ohms reactance over much of the audio band. In laymen's terms what this means is that you have just no voltage division whatsoever, either way.Put that 7.5 ohm resistor across the piezo and the switched resistor network in front of it. That will give you a two-position variable attenuator. I prefer to use capacitors to attenuate piezo tweeters, but you can also use a resistive voltage divider as long as it has two resistors rather than using the load as the second one. In this case, your load is capacitive.

Subject: Re: Darn it ! This shoulda worked !
Posted by Andy G on Fri, 07 Dec 2001 02:18:35 GMT
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But Wayne, won't doing it that way alter the resistance seen by the capacitor by a fair amount, hence the cut-off frequency?

Subject: Crossovers for Piezo's
Posted by Wayne Parham on Fri, 07 Dec 2001 11:10:58 GMT
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If you use a resistive voltage divider, the padding resistors act as the load to the amplifier, and they add to the source impedance from the perspective of the load. In the case of the piezo tweeter, the load is primarily capacitive. Because of that, I would use a switched capacitor of 0.1uF to 0.33uF. That would more closely provide the characteristics you are trying to achieve. See the thread called "Pi implementations of quartz piezoelectric tweeters"

Subject: How about a capacitive divider network?
Posted by Jeff Robinson on Sat, 08 Dec 2001 21:26:59 GMT
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I don't know the capacitance of piezos but use two capacitors instead of the 34 ohm and 23 ohm resistors to create a capacitive voltage divider network behind the 7.5 ohm stabilizer resistor which will maintain the effectiveness of the 5.6 uF crossover capacitor (with all these capacitors I'd definitely include a small (10 to 20 ohms) series damper resistor too).Jeff Robinson