
Subject: Damping

Posted by [SteveBrown](#) on Wed, 16 Jul 2003 09:47:29 GMT

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Wayne, or others, when I was asking about comparing the Theater 3pi to the Thermionic 3pi you said the Theater would have better bass provided there was sufficient damping. That's got me thinking.. what is considered enough damping, and what is it that makes one speaker need this more than another? Maybe my understanding of damping is off, because I would think that a heavier cone would be easier to control, rather than a lighter one, thus requiring less damping from the amplifier.

Subject: Re: Damping

Posted by [Wayne Parham](#) on Wed, 16 Jul 2003 14:01:50 GMT

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It's all about stored energy and inertia. Think about the energy required to stop a motorcycle in comparison to that required to stop a semi tractor trailer truck. More energy is required to accelerate or decelerate the heavier load. Do a search here and check out the posts about back-EMF.

Subject: Re: Damping

Posted by [Adam](#) on Wed, 16 Jul 2003 14:34:58 GMT

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If you're talking amplifier damping factor, anything over 100 is fine, doesn't really make much difference...Adam

Subject: Re: Damping

Posted by [SteveBrown](#) on Wed, 16 Jul 2003 14:46:48 GMT

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Thanks for the explanation. Makes more sense now. From previous posts it looks like this can be overcome somewhat with amp power. I'm anticipating wanting to try that Delta 12LF with tube amps from 8 watts up to 60watts. Looks like the zMax is 93ohms. From what I read, this looks marginal in the 8watt range but above 20 should be just fine? On a side note, I'm wondering if the

PSD2002 can be crossed lower? I ask because I thought that bi-amping could help with running the woofer, but it seems to me that the lower the HF can be crossed, the more seamless it would sound. Thoughts?

Subject: Re: Damping
Posted by [Wayne Parham](#) on Wed, 16 Jul 2003 15:15:02 GMT
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Your 8 watt amplifier may have enough control, so I suggest giving it a try. As Adam pointed out, the issue is damping factor which is inversely proportional to output impedance. So an amplifier with high damping factor doesn't necessarily have to be one that delivers a lot of power. But the reason I suggest higher power amps is that damping factor is usually tied to output capability. A device that is capable of high current is necessarily going to have low output impedance. SET amps usually have relatively high output impedance, so they are somewhat sensitive to their load. But I've found SET amps that are much less load sensitive than others, and even some 3 watt
