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Subject: Qms, Qes and Qts

Posted by [Wayne Parham](#) on Thu, 07 Aug 2003 03:35:38 GMT

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Qms is a figure of merit for the mechanical damping of the speaker, Qes is the figure for the electrical damping and Qts is their combined total. If the diaphragm is heavy and the motor is weak, then Qts will be high. When the cone is made very heavy to lower its resonant frequency then the motor must be made stronger to compensate. If the motor is powerful enough to control the mass and the amplifier can handle the back-EMF produced, then the system as a whole will not sound "muddy." But there is a limit to how much a motor can do, and there comes a point where extension is gained at the expense of control. You might be interested in the thread called "Motors," which was a recent discussion about Qms, Qes and Qts.

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