Subject: Resonance
Posted by Wayne Parham on Sun, 08 Oct 2006 00:23:40 GMT
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A driver at resonance will move to large excursion with relatively little electrical input. This is a result of the mass of the diaphragm and the stiffness of the suspension. It's the same thing that causes a pendulum to move back and forth at a particular rate or a spring with a weight to bounce at a certain rate. The movement can be damped with resistance, and in the case of a speaker driver, this can be mechanico-acoustic or electro-mechanical. The suspension may provide mechanical damping and the cabinet may provide damping via acoustic properties. The voice coil circuit also provides electrical damping through back-EMF passed through the amplifier outputs, which act something like a short circuit. But damping notwithstanding, the driver's resonance has the effect of a tendency towards large diaphragm excursion from relatively little input signal.