Subject: Re: Current Drive
Posted by gofar99 on Tue, 29 Jan 2019 17:07:18 GMT
View Forum Message <> Reply to Message

Hi, As Wayne noted a long history of this concept. In days long past when only feeble tube power amps were available it was undoubtedly a problem and caused sonic issues. Since about the middle 50s or so it is really not a problem. Early amps often had damping factors under 2 to 4 range. This meant that they really could not deliver a consistent current to meet speaker demands. Since then the DF is usually well past 10 and can reach values like 50 or more. Such amps have no problems with driving current loads. The impedance of speakers varies with frequency. Ones I have seen typically vary from a nominal value by +/- 10-20% over a lot of the range they can reproduce. At resonance they can vary quite a bit more. Impedance may shoot up 10 times or more from the nominal value. Good speaker systems account for this and keep individual drivers from responding there. With the nominal variations in speakers modern tube amps have no problems with them. This phenomenon is one I consider as an amplifier designer. Even the lowest power amplifiers of my designs have damping factors over 15. With only the usual variation in load impedance this is quite adequate to handle any current demands. My personal speakers are electrostatic. From the amplifier perspective they look like giant capacitors with an impedance of about 4 ohms in the low to mid band that drops to just over 1 ohm at the high frequency end. The tube amps have absolutely no problems with them.

So, my take on the current issue is that it is no longer an issue with a modern amp of any type (includes class D ones) driving any sort of speaker. I am sure there must be at least one speaker out there that is so far off normal that problems might exist....but none exist to my knowledge. YMMV