

---

Subject: Re: Damping factor - SE vs. PP

Posted by [Steve](#) on Fri, 14 Oct 2005 14:55:40 GMT

[View Forum Message](#) <> [Reply to Message](#)

---

Right, we are talking dynamic Ra, and keeping the power as low as possible is crucial/fundamental for keeping Ra relatively constant, although never as good as PP. (I think that is one reason I have been hearing suggestions of using Even higher efficiency speakers.) $r_p = u/gm$ , both u and gm constantly change during a cycle. Both changing independently, not in sync, in value and causes  $r_p$  to rise. This can be graphed in a quadrant. The Ra curve (at different plate voltages) rises gradually at first over the first 5 volts peak or 10 volts p-p; then rises rapidly. Even then, a 10 volt peak, 20v p-p, drive signal can easily cause Ra to change by 20% or more over a cycle. The slope of the loadline is very important. A more vertical loadline dramatically increases Ra's change and effect. A more horizontal loadline helps minimize, or even eliminates Ra changing. But a horizontal loadline causes the output power to lower, rather dramatically. This applies to any triode run SET mode. Just something to think about when designing an SET amp. RL is important.

---