
Subject: Update/correction (specs)

Posted by [Damir](#) on Tue, 11 Apr 2006 11:45:06 GMT

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On the second look, the specs on the link you provided doesn't seem quite right - in OP 450V/-95V/100mA we'd have $r_p=700$ Ohms, $\mu=4,8$ and $S=4,8$ mA/V (?!). Barkhausen said $r_p=\mu/S$, and I found another (probably right) specs on "kraudio.cz" site: $U_a=450V$, $I_a=100mA$, $U_{gk}=-94V$, $\mu=3,7$, $S=5,7mA/V$ From that, $r_p = \mu / S = 3,7 / 5,7 \sim 650$ Ohms Than we can use the primary load $R_a=(U_{gk}*\mu/I_a) - r_p = (94*3,7/0,1)-650 = 2828$ Ohms, we'd use the "standard" 3k primary. Voltage "swing" on the anode load is: $U_a = U_{gk}*\mu / (1+r_p/R_a) = 94*3,7/(1+650/3000) = 285,9$ Vp = 202 Vrms And max. power in class A1 is $P_a=U_a^2/R_a = 202^2/3000 = 13,6W$. If we assume 10% losses, then we can expect about 12W of power, still respectable, but not 17W

Verification - tube is "biased" with 100mA, it means AC 100mA_p, or $100/1,4142 = 70,7mA_{rms}$ max. And it "allows" $P_a=I_a^2*R_a=0,07^2*3000 = 15W$ of AC anode power, but limited voltage "swing" gave us "just" the 13,6W anode, or ~12W output power.

<http://www.kraudio.cz/>
