
Subject: Silver Lining

Posted by [PakProtector](#) on Wed, 16 Feb 2005 14:50:36 GMT

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Hey-Hey!!!,One of the things I have run up against with low B+ Class A amps is a lack of headroom for a driver stage(and I've been watching *WAY* too much Stewart Little).Two power TX's are a bit of a PitA. The Guinevere Iron, when built into a PP 6V6 amp would run the power stage B+ on the 325 taps. The drivers could be done on the 400v taps. It would be difficult(close to impossible I think) to do an E-Linear driver at different DC w/o a tertiary winding. A resistive hook-up from plate to grid *IS* possible. The two B+ supplies do require a bit more realestate and expense. For something low mu like a pair of 45's the additional headroom would be a useful feature. A 10k a-a OPT would do PP 45 quite nicely and with reasonable PS headroom. 45's are a bit small in the power department. 3W is what I would expect. I'd suspect that we could get away with a bit more than 100 mA with an L-C PS, and taking the load for the rectifiers off the core. 2A3's would be cool and a reasonable maximum. 6 or 7 watts with a 6k a-a OPT. They'd be a good 6 or 7W...regards,Douglas

Subject: Re: Silver Lining

Posted by [Manualblock](#) on Wed, 16 Feb 2005 16:06:22 GMT

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T-man! Can you be saying we can use the power trans from Heybouer for the supply for this 2a3 PP amp? We need to know before Colin sends them back to the manufacturer. I would go with that.

Subject: Re: Silver Lining

Posted by [PakProtector](#) on Wed, 16 Feb 2005 16:19:40 GMT

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Hey-Hey!!!,not having one to test puts me at a bit of a disadvantage. I broke down the power delivered by each winding somewhere down below. Here are teh important points: the filaments are delivering almost as much power as the HV. If you run a GZ34 for the rectifier at 10 watts heater power, that leaves 3*6.3(~ 19 Watts plus an additional 5 from the 1A of 5vac you're not using) left to run the HV.L-C filters are the easiest on the power TX. 130 mA delivered to 300V is ~40 Watts. It would be Bottlehead-close but I think it can be done. If you went and used the 325 v HV taps and accepted ~230 volts for a fixed bias pair of 2A3's I would be even more confident. Keep in mind that the 2A3's will not be loading the PT with their filaments. The lower voltage OP point will also slightly cut into the driver output requirement. That's a good thing too.regards,Douglas

Subject: Re: Silver Lining

Posted by [colinhester](#) on Wed, 16 Feb 2005 18:08:31 GMT

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So it is practical to use the extra Guinevere (sp?) Tx's in a 2A3 PP amp if the filaments are powered off a separate supply. Like M said, I need to know.....Colin

Subject: Re: Silver Lining

Posted by [Damir](#) on Wed, 16 Feb 2005 18:10:20 GMT

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I must say that I like "overdimensioned" PTs, "Guinevere" PT is maybe more suitable for monobloc SE 2A3 amp (400V taps into LCLC gives about 310V - OK for the "classic" OP: 250V/-45V/60mA + CCS or choke loaded driver). But, if we use another OP, say 300V/50mA/-59V, then we can (probably) make it. But, driver needs some current, and about 400V B+... Anyway, let's see: $R_a = (4,2 \cdot 59) / 0,05 - 800 = 4156$ Ohms, let's say "standard" 4k, then: $U_a = (\mu \cdot U_{gk}) / (1 + r_p / R_a) = 146$ Vrms, and: $P_a = U_a^2 / R_a = 5,3$ W Available current swing give us the power: $P_a = I_a^2 \cdot R_a = 5$ W And $R_{aa} = 2R_a = 8k$, $P_{aa} = 10$ W - losses are about 10-15%, and we can expect max. power $P_{out} \sim 8,5$ W. If we use higher, more "relaxed" load $R_{aa} = 10k$ (lower distortion, higher DF, but lower power), we can expect about $P_a = 9,1$ W, and $P_{out} \sim 7,7$ W. Not bad (theoretically)?

Subject: TX capacity analysis.

Posted by [PakProtector](#) on Wed, 16 Feb 2005 22:44:55 GMT

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Well, I think it is a requirement to have a separate 2.5 volt TX for the 2A3's. If you are careful with the rest of the filament demand, like using a GZ34/5AR4 rectifier and not too much of the 6.3 for the front end... It ought to run PP 2A3's in fixed bias w/o any trouble. The core is good for ~70 VA. With 10VA for the rectifier, and 5 VA for the front end, there ought to be plenty left for the plates through the 325 plate taps. I ran a sim with PSUDii with 325vac into an LC filter and got 260V. 50VA at 260V leaves something like 190 mA. We'd only have to worry about copper losses, and these things are rated for operation to 100C/212F (FWIW, ~140F is enough to cause you spin fairly quickly). It oughtn't to get that hot. I took another of their PTX's and ran it over its rating into a cap input filter and it got fairly hot, but not to burn quickly. These guys are conservative enough IMO to run PP 2A3's without smoking. regards, Douglas

Subject: anecdotal evidence

Posted by [PakProtector](#) on Thu, 17 Feb 2005 00:07:06 GMT

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On an olde Triad Tx there is the current specification: 150 mA condenser input, 200 mA choke input. 33% increase for using the L-C filter.If we assume it can deliver its rated 100 mA into a cap input filter, it will have no troubles with a choke input.You gave me a general size of the Iron. It'll be fine. Perhaps run harder than I would do with a clean sheet design, but adequate.regards,Douglas
