Universal tube preamp PCB, ECC99/6N6P/ECC88/ECC85/6922/6DJ8 etc. MU follower or SRPP

Kolfarm · 2022-07-15 10:31 am

Boydk
Member

2022-07-17 10:29 am #21

Thanks for this one, kolfarm..... Nice job.
Have a great vacation 👍👍

Kolfarm

Report Reply

Kolfarm
Member

2022-07-17 11:13 am #22

> **joan-paul said:**
>
> As expected, sorry. It is often assumed one can not hear RF so it is not an issue. EMI and RF are nasty in audio though and in semiconductor stuff sometimes the cause of "listening fatigue" and this intermittent or depending on the time of the day/temp etc. Even when devices look nice and have blue LEDs 😉 Not measuring = not knowing.
>
> BTW I do like your design so no negative criticism except a few quibbles like lacking volume control and PSU. Nice design.

There are to much options for volume control and power supply.

For the tube preamp are a lot of applications where you do not need a volumecontrol. Such as outputstage for DAC or CD player, or inputbuffer for classd amp.

About the power supply i started a thread in the power supply section https://www.diyaudio.com/community/_s-design-for-tube-preamp.388367/#post-7073834 to make a high voltage preamp smps. I think about linear supplies there is a lot to find here on DIYaudio. I myself also used in the past the maida regulator or a LR8n regulator with or without fet.

In this thread i like to talk only about the preamp.

Report Reply

ruffrecords

2022-07-19 7:50 am #23

I just realised there has been no discussion about heater elevation and looking at the schematic the heaters are floating unless you connect one side to HTGV somewhere. With many of the tubes you could use in this circuit, their Vhk spec is may be low for the upper triode if the heaters are grounded with a 265V HT voltage. The normal solution is to elevate the heaters to around 25% of the HT voltage.

Cheers

Ian

Report Reply

joan-paul
diyAudio Moderator Emeritus

2022-07-19 8:30 am #24

With the typical SMPS for tube devices the 6.3V shares GND with the B+.

Report Reply

Kolfarm
Member

2022-07-19 8:51 am #25

I am aware about the specs for elevating the heater supply. But as Jeam Paul stated my SMPS share GND between anode and heater supply. Luckily it is forgiven by the 6n6p tube.

Report Reply

ruffrecords
Member

2022-07-19 11:21 am #26

> **Kolfarm said:**
>
> I am aware about the specs for elevating the heater supply. But as Jeam Paul stated my SMPS share GND between anode and heater supply. Luckily it is forgiven by the 6n6p tube.

Yes, some tubes will be OK others may not. You need to be careful with a regular 6DJ8 for example because the two triodes have different Vhk specs, but if you use an EH6922 instead you should be OK. Just something to be aware of.

Cheers

Ian

Kolfarm

Report Reply

dreamth
Member

2022-07-19 12:41 pm #27

> **Kolfarm said:**
>
> I am aware about the specs for elevating the heater supply. But as Jeam Paul stated my SMPS share GND between anode and heater supply. Luckily it is forgiven by the 6n6p tube.

Reproduce luxman cl34 heater supply and heater wiring It's totaly silent and it has a small secret that will help you every single time you meet weird constraints! By the way...you can go opposite way too, lowering the fillament potential below ground!

Report Reply

Carl_Huff
Member

2022-07-27 11:36 pm #28

Kolfarm,

Nice to see you doing this. What changes are required to run a pair of ECC88 tubes on this project board?

Report Reply

Kolfarm
Member

2022-07-28 8:23 am #29

For R4, R7(R34, R17) use 200ohm and for R5 (R15) use 6k8 3Watt. Set heater jumper on 6n6p.

Anode current is then about 10mA.

Report Reply

Kolfarm
Member

2022-07-28 11:38 am #30

Or just use original parts. And set heater jumper on 6n6p.
The difference in distortion will be small.

Report Reply

vlad1980
Member

2022-07-28 11:56 am #31

Hi,

Congrats for this project and thank you for sharing with us the PCB gerber and measuring results.

Did you test with ECC82 or 6CG7? The anode voltage should be around 300v as far as I know.

Regards,
Vlad

Report Reply

Kolfarm
Member

2022-07-28 12:15 pm #32

No i did not try ECC82 or 6CG7, but they fit on the pcb. Use heater setting ECC99 for ECC82 and heater setting 6n6p for 6CG7.
Apply 350 to 400v anode voltage.

Report Reply

Vunce
Member

2022-07-29 2:57 am #33

Super cool project Kolfarm, thanks for sharing the files!
I'd like to give this a try as a dac output stage.

Report Reply

Vunce
Member

2022-07-29 3:52 am #34

Kolfarm,

In reading the SMPS operation description, the HV section has a turn-on delay of approx. 30 seconds behind the filament heater turn-on. And the HV has an adjustment range of 10% (approx. 247V - 273V). Will **cattle** be powered from it?
Can you confirm if this is accurate?
Thanks.

Report Reply

Kolfarm
Member

2022-07-29 8:52 am #35

Mine SMPS has not the 30sec delay. It starts high voltage after heater supply is on.

I use the 6n6p SRPP stage now for 14 years as an outputstage. It is in a cd player, straight from a I/V resistor after two PCM1794 DAC's.

Last edited: 2022-07-29 8:57 am

Report Reply

Vunce
Member

2022-07-29 7:05 pm #36

Ok, maybe the SMPS was updated or the description is lost in translation, Hehe.

Report Reply

Kolfarm
Member

2022-07-29 7:36 pm #37

There are more users who report that there is no 30sec startup delay.

Last edited: 2022-07-29 7:45 pm

Report Reply

Vunce
Member

2022-07-29 7:48 pm #38

I ordered one of these little SMPS's.
I've used DC/DC converters for filament heaters with previous projects. But haven't used a switcher for the HV requirements yet.

Report Reply

Kolfarm
Member

2022-07-29 7:50 pm #39

Works great. No humm. No hiss.

Vunce

Report Reply

dBell84
Member

2022-07-30 12:05 am #40

A package arrived in the mail today

Looking forward to building this up and testing it. Plan is to build as SRPP for 6DJ8s

.. dB

Kolfarm

Report Reply

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