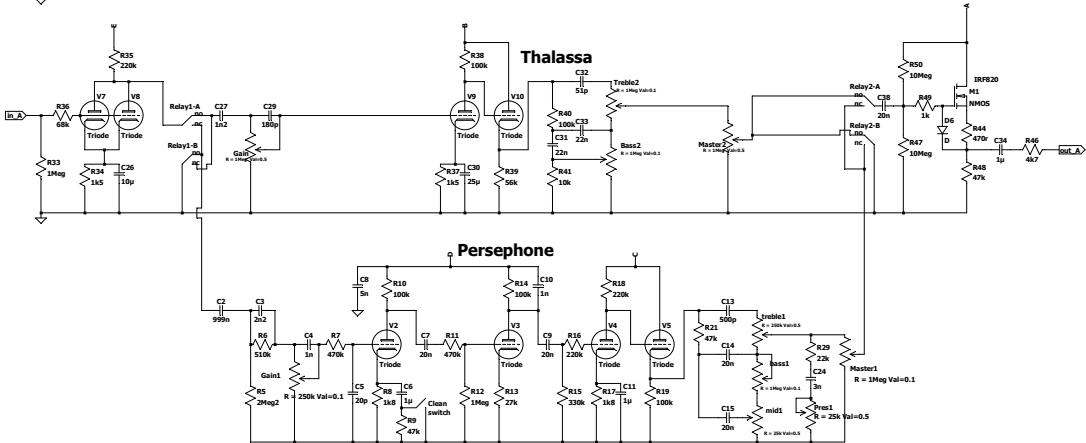
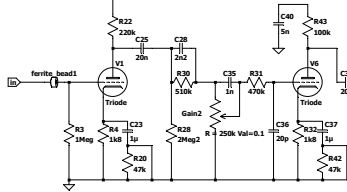
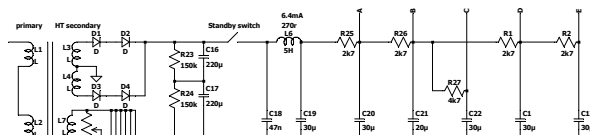


Dual rectifier rev F orange channel



Power supply



6.3V heater supply with 20W per side humdinger, humdinger first in line after traf? e.g. mouser 774-02F83230121811 ignore CT, only use green with green bridge rectifier package and 5V regulator for relays

bypass the supply nodes close to the pins with a .1uF CERAMIC capacitor

One practical change I made is to wire the tube heaters in series and power them with 12.6V instead of the typical 6.3V parallel mode. The reason behind it is that doubling the voltage effectively halves the current, so there's less EM radiation around heater wires. Another minor reason is that series wiring uses only terminals 4 and 5 on the sockets and allows for a cleaner layout. The downside is that you cannot use Russian tubes anymore. Also, with 12.6V, the current draw of the pair of 150 ohm resistors in the virtual center tap is too high (6.3mA with 0.9W dissipation), so larger resistors should be used. A pair of 220 ohm resistors will dissipate around 0.5W, so I went with a pair of 330 ohm 1/2W resistors drawing around 0.25W, just to be safe. If using 12.0V heaters, another alternative is to dim the heaters by connecting the reference DC voltage to the unused center tap (pin 9) of one of the tubes instead of referencing both sides through a pair of equal resistors.