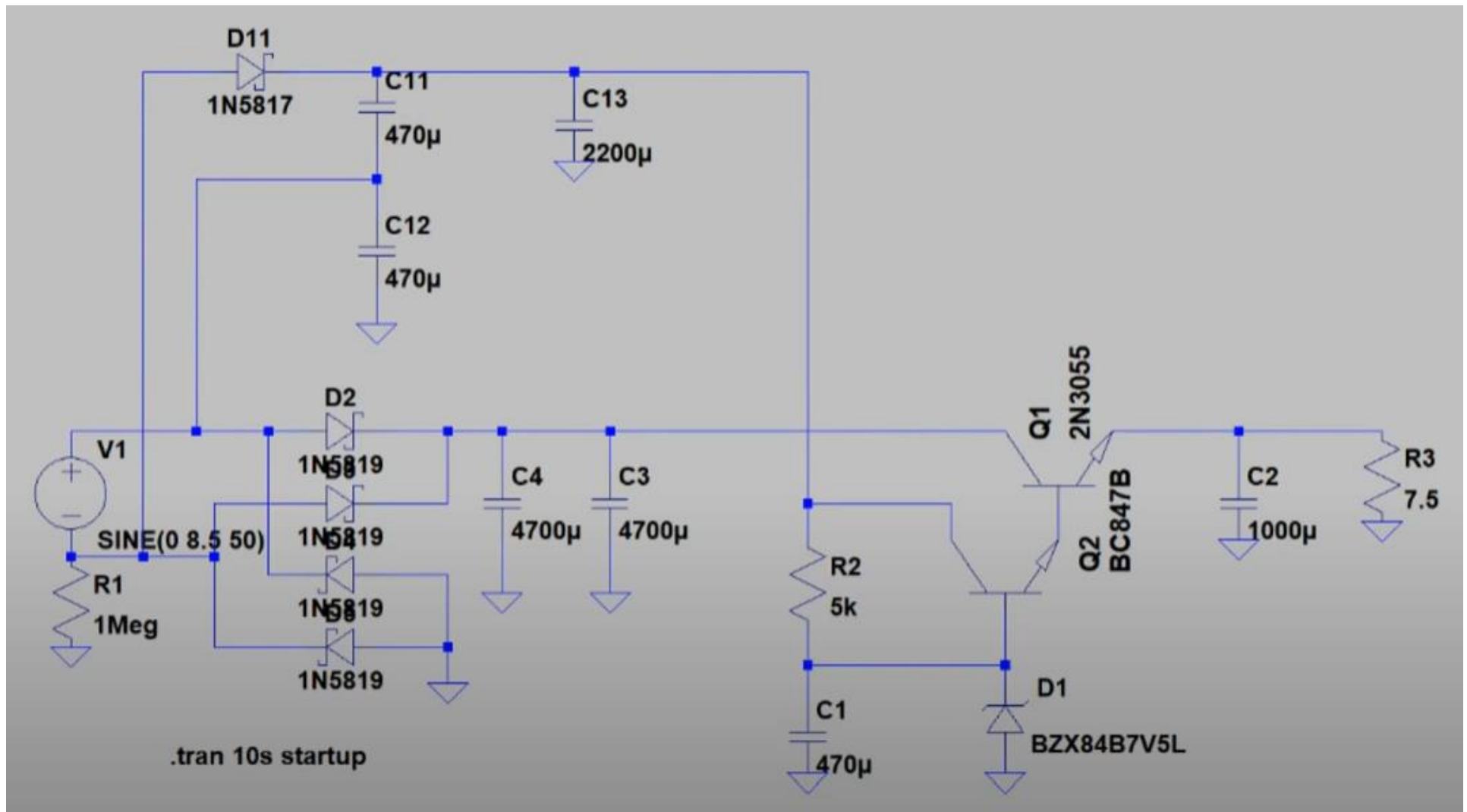


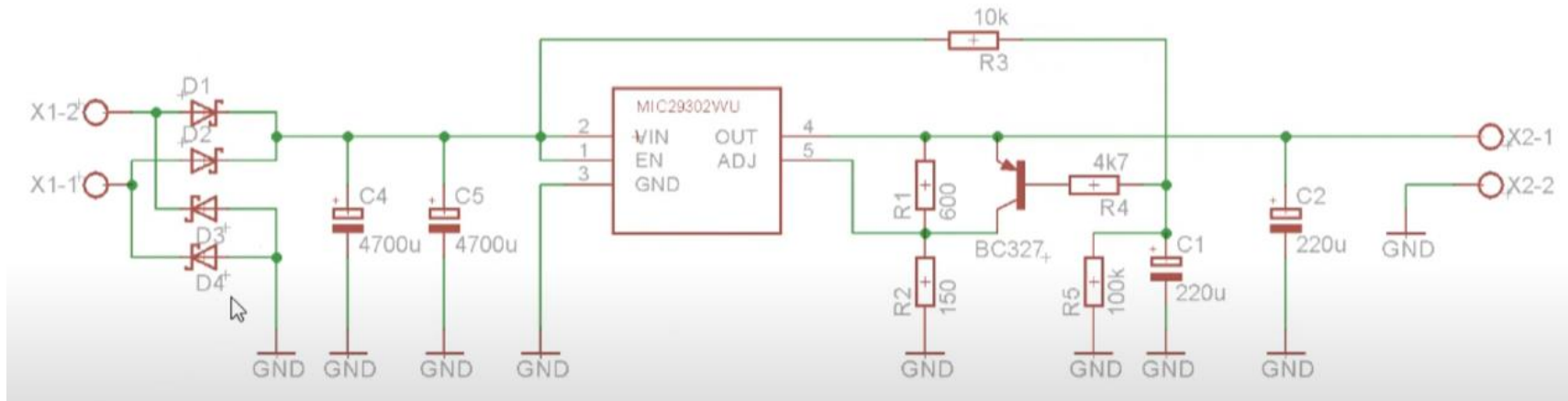
The circuit diagram illustrates a two-stage vacuum tube amplifier. The first stage, labeled V1A, is a 12AU7 tube configured as a common-cathode amplifier. Its input is connected to J1-1 through a 1μF/63V capacitor (C1) and a 1kΩ resistor (R2). The grid is biased by a voltage divider consisting of R3 (330kΩ) and R4 (330kΩ), with a 1kΩ resistor (R8) in parallel with R3. The cathode is biased by a voltage divider of R5 (47kΩ) and R6 (10kΩ), with a 5kΩ resistor (R7) in parallel with R6. The output of the first stage is taken from the plate through a 12kΩ resistor (R1) and is coupled to the second stage via a 220nF/400V capacitor (C4). The second stage, labeled V1B, is another 12AU7 tube, also in a common-cathode configuration. Its grid is biased by a voltage divider of R9 (100kΩ) and R10 (220kΩ). The cathode is biased by a voltage divider of R11 (330kΩ) and R12 (220kΩ), with a 220μF/50V capacitor (C5) in parallel with R12. The output of the second stage is taken from the plate through a 15kΩ resistor (R14) and is coupled to the final output stage via a 220nF/400V capacitor (C9). The final output stage consists of two 6N6P tubes. The first 6N6P tube's grid is biased by a voltage divider of R13 (1kΩ) and R14 (15kΩ). Its cathode is biased by a voltage divider of R15 (1kΩ) and R16 (330kΩ), with a 220μF/50V capacitor (C6) in parallel with R16. The output of this tube is taken from the plate through a 220Ω resistor (R17) and is coupled to the final output stage via a 100μF/450V capacitor (C8). The final output stage is a second 6N6P tube whose grid is biased by a voltage divider of R18 (1kΩ) and R19 (1kΩ). Its cathode is biased by a voltage divider of R20 (4k3Ω) and R21 (220Ω), with a 220μF/50V capacitor (C7) in parallel with R21. The output of the final stage is taken from the plate through a 220Ω resistor (R22) and is connected to the output terminals X3-1 and X3-2. The input terminals J1-1 and J1-2 are connected to the input of the first stage. The output terminals J2-1 and J2-2 are connected to the output of the final stage. The power supply is connected to the circuit through terminals X3-1 and X3-2, with a 100μF/450V capacitor (C2) connected to ground. The ground connection is labeled GND.

J3 is a “Gain Amount” switch.

POWER-SUPPLY SCHEMATIC

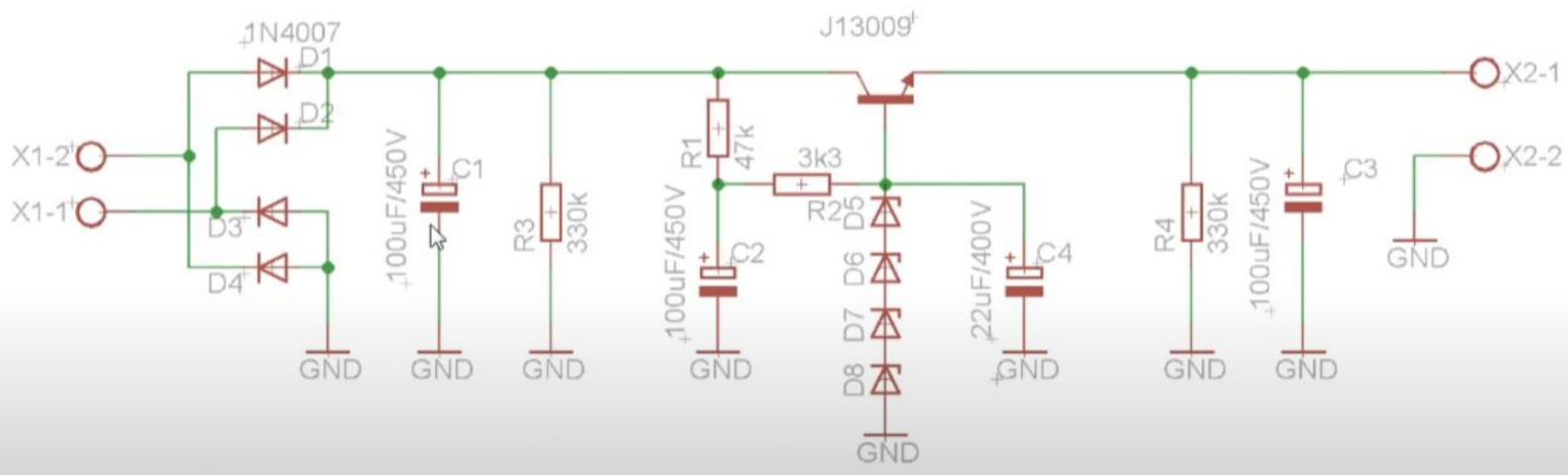


VACUUM-TUBE HEATER VOLTAGE REGULATOR & START-UP DELAY



1N5819 Schottky Diodes Microchip MIC29302WU

VACUUM-TUBE HIGH-VOLTAGE REGULATOR CIRCUIT 5 – 10-Watt Heatsink on J13009



FJP13009TU

D6, D7, D8 = 75V Zener's, D5 = 56V Zener

Power Transformer:

Secondary-1: 6.3VAC @ 4-Amps

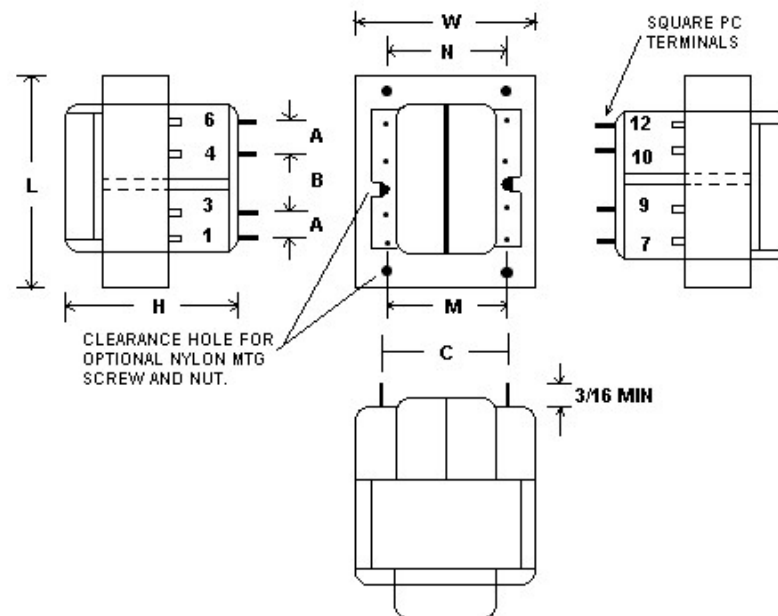
Secondary-2: 220VAC @ 100mA

Primary: Use an NTC thermistor having a resistance of 30-50 ohm at room temp and twice the current rating of what the amp draws.

<https://youtu.be/kahJtalwCog>

PowerVolt -- 14P-30-12 -- 6.3VAC @ 4.8A

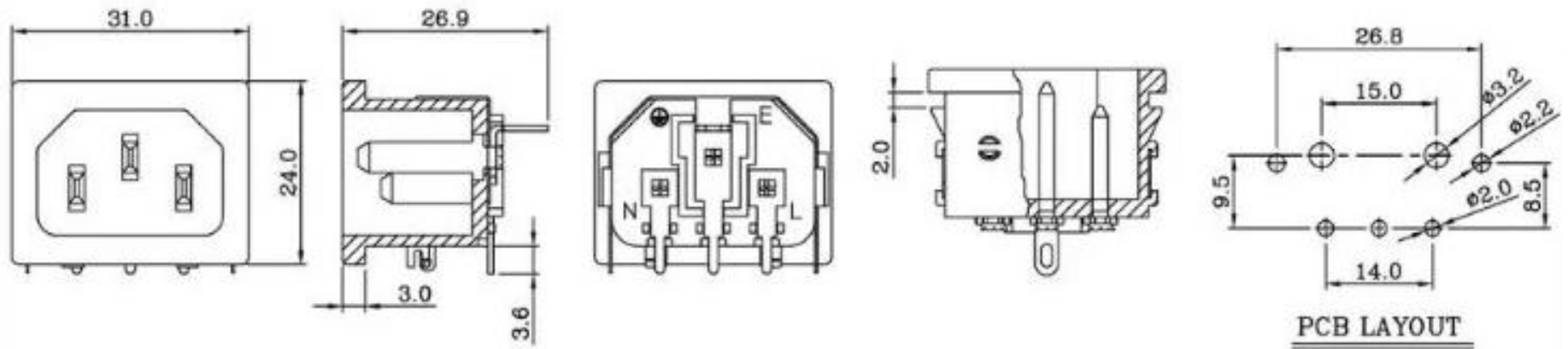
Mechanical Drawings



Mechanical Dimensions (In Inches)

VA (Size)	L	W	H	A	B	C	D	SQPin Dim.	M	N	P
30	2.62" 66.7mm	2.18" 55.5mm	1.56" 39.7mm	0.550" 13.9mm	0.275" 7.0mm	1.680" 42.7mm	0.275" 7.0mm	0.045" 1.14mm	--	1.75" 44.5mm	2.18" 55.4mm

AC-INLET RIGHT-ANGLE PCB-MOUNT



6N6 Vacuum-Tube Drawings

