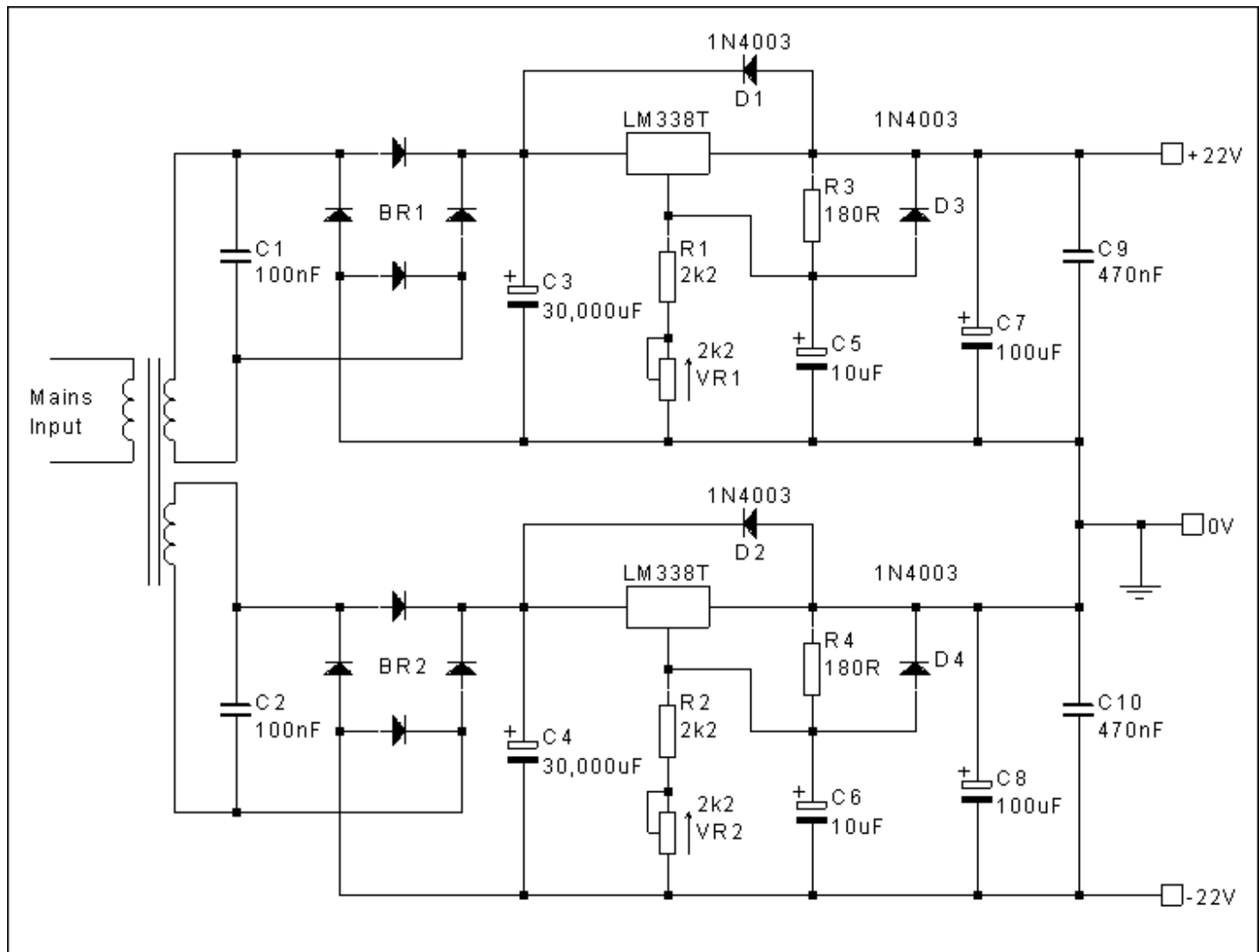


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Updated Power Supply

A revised (but unpublished), regulated power supply for the 1996 JLH Class-A amplifier.



Notes

The LM338T was specified by the originator of this diagram. Due to its poor junction to case thermal resistance (4degC/W) and its low maximum junction temperature (125degC), the size of the heatsink and the maximum volt drop across the device are extremely critical for satisfactory working. The volt drop should be limited to between 2.5V and 6V if at all possible (based on a heatsink of 1degC/W for each device and an ambient of 25degC). The lower limit is set by the drop out voltage of the regulator and the higher voltage will be determined by the transformer secondary voltage, the transformer regulation, the diode losses and the fluctuations in the mains supply voltage.

The LM338K in a TO3 case (though much more expensive, at least here in the UK) has a greatly improved junction to case thermal resistance (1degC/W) and so will be more tolerant of heatsink size and will cater for a wider variation in volt drop across the device. I would therefore recommend that this version of the LM338 be used.

Bridge rectifiers BR1 and BR2 should have a minimum rating of 100V 25A (200V 35A preferred).

C3 & C4 are best made from 3 x 10,000uF capacitors in parallel.

C3 & C4 should be 50V minimum.

C5 & C6 should be 25V minimum.

C7 & C8 should be 35V minimum.

VR1 & VR2 are adjusted, under load, to give +/-22V supply rails.

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HISTORY: Page created 01/05/2001
16/05/2001 Diagram redrawn and components renumbered
14/08/2001 LM338 notes revised
01/05/2004 Reference to separate regulators for each channel
fed from a common rectifier/capacitor removed