The Class-A Amplifier Site
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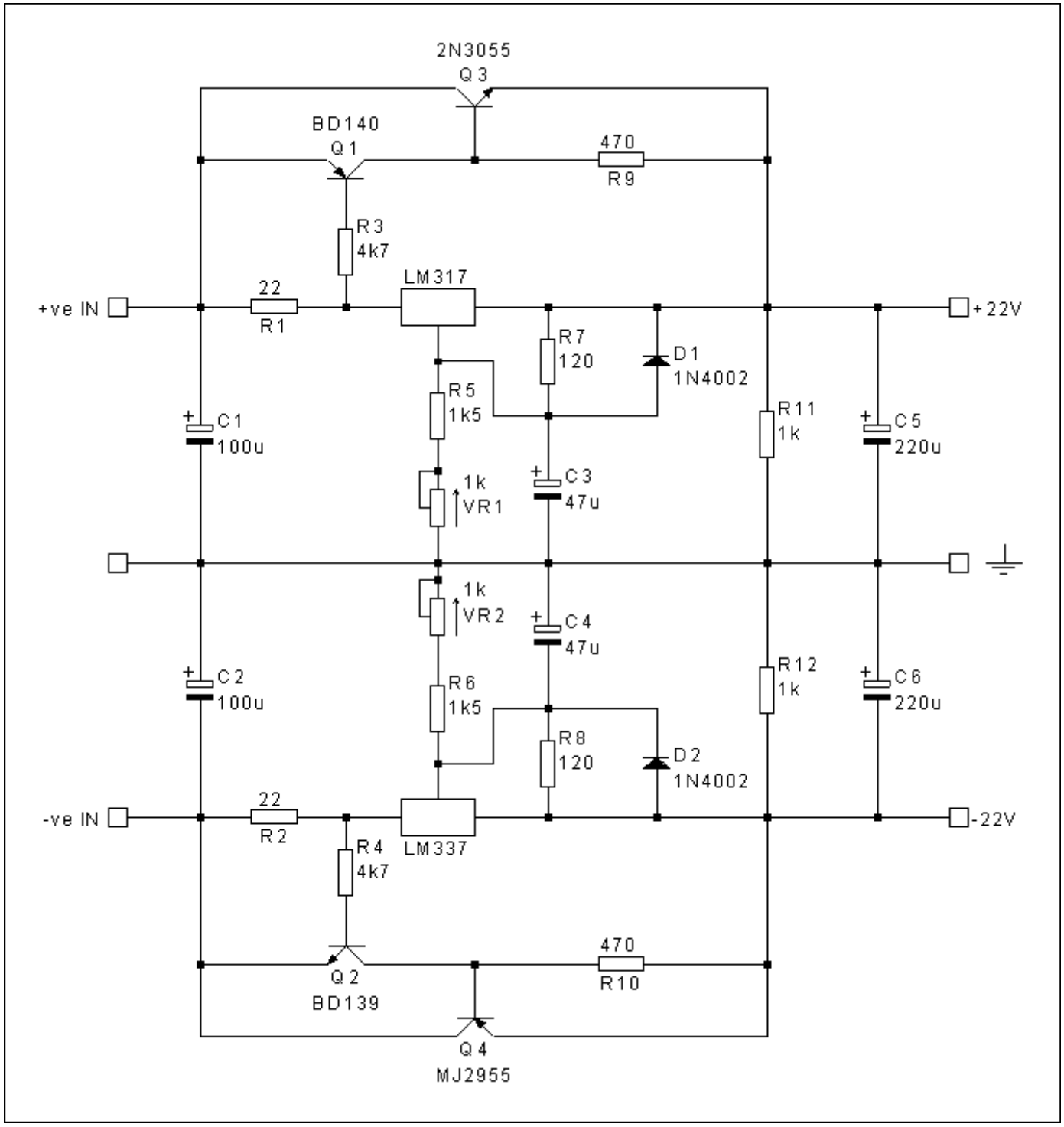
Current Boosted LM317/LM337 Regulator

The LM338K is a relatively expensive device (at least here in the UK) and may not be easy to find in certain locations. The current boosted 7815/7915 regulator circuit in the 1996 article is an alternative, but this requires power resistors in the supply line. It also has reduced regulation due to the voltage lifting arrangements necessary to provide a 22V output from a 15V regulator.

The following current boosted LM317/LM337 circuit is essentially that included on several manufacturers' datasheets. The capacitor values have been changed from those on the datasheets to reflect the use of electrolytic capacitors as opposed to tantalum devices (I'm not happy with the reliability of tantalum capacitors even though they do have some desirable characteristics) and the transistors types have been altered to ones that are more readily available. The capacitor values are not critical and may be halved or doubled to suit available components, though a minimum voltage rating of 35V should be observed.

The circuit shown is suitable for supplying a single amplifier (2A quiescent current). If two amplifiers are to be supplied from a single regulator, I recommend that the pass transistors (Q3, Q4) be duplicated using a parallel arrangement. In either case, a heatsink of between 2 and 3degC/W will be required for each transistor. The exact size of heatsink required should be determined whilst taking into account individual circumstances.

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



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