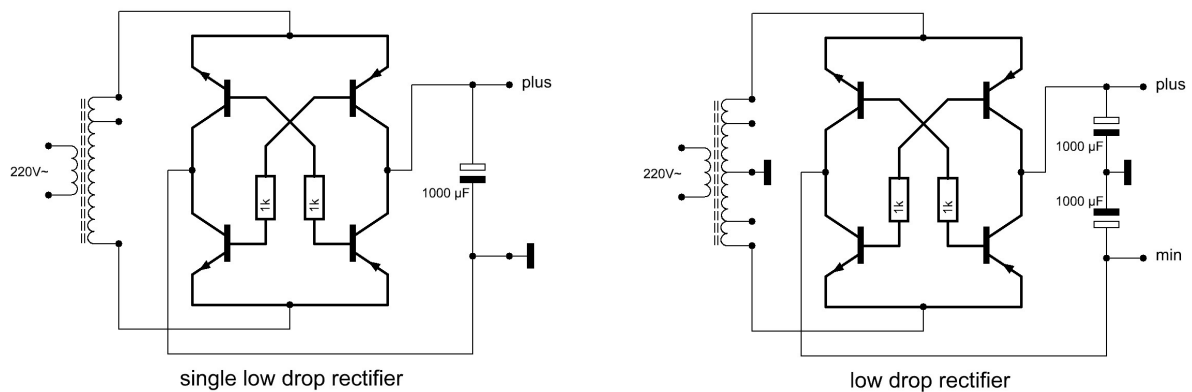


Low Drop Rectifier

Preface

Especially with the rectification of lower voltages, the rectifier very often should be a low drop rectifier. E.g. in case the filament voltage of tubes in a tube amplifier could be rectified to suppress hum. Such filaments are often powered with 4, 5 or 6.3 volt with rather high currents. The AC voltages from the transformer in the power supply will point out to be too low if silicon diodes have been used in the rectifier. They do have a forward voltage drop of some 0.7 volt. Schottky diodes could remedy the situation but they are expensive. Some time ago, with TentLabs, I saw a very smart solution.

The Rectifier



The diagram speaks for itself. The value of the two resistors depend on the β of the transistors and the voltage in question. The transistors should be switching transistors, because of the low knee voltage, to say of no more than 0.2 volt.

Depending on the AC source, the rectifier could be built as a single- or a symmetrical rectifier, which could be useful for directly heated tubes with Tungsten filaments that also serve as the cathode of the tube(s).