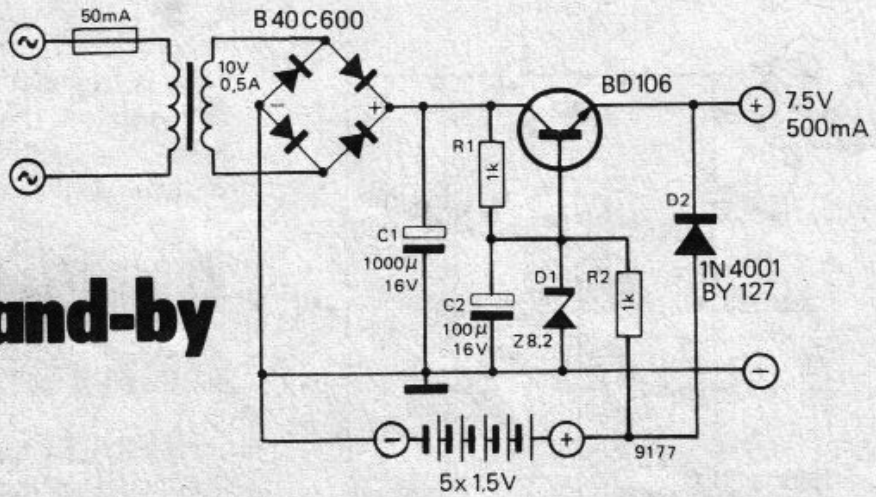
58

J. Skubic

battery stand-by circuit



This simple circuit will find many applications as a battery eliminator for low power requirements. It consists of a transformer, a bridge rectifier and an electrolytic capacitor followed by a zener controlled series pass transistor. The output is stabilised at 7.5 volts. The stand-by battery, 7.5 volts, in series with D2, floats across the output terminals, ready to take over in case of mains failure. The voltage drop across D2 will then reduce the power supply to about 7 volts.

Resistor R2 has an additional function: when working off the mains it will trickle charge the dry cells or storage battery. Since not many accumulators, and very few dry batteries, will stand prolonged overcharging, R2 must not allow for more than just the self-leakage. Its correct resistance can be found by dividing the voltage potential difference between the zener and the battery by the safe trickle current, which may amount to some 0.7 milliamps.