

Eprom Programmer Mk2 and Eprom Emulator PSU

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This simple power supply unit was designed for use with the EPROM Programmer Mark 2. It is equally suitable for powering the EPROM Emulator. In addition it will power the Chiptester project on this website.

We are printing this as a separate article to avoid confusion with component reference numbers. The unit produces 5V at up to 500mA, and 12.6V at up to 250mA. At currents over about 250mA from the 5V rail, a heatsink will be needed for IC1 - this is not needed if the unit is used with the projects listed above.

How it Works

The circuit is shown in figure *. Transformer X1 produces 6V AC from the mains input. This is rectified by D1 and D2, and smoothed by C1 giving about 8.5V DC. IC1 is a standard three pin 5V regulator, which does just that!

For the 12.6V supply, we have used a voltage doubler circuit (D3, D4, C5 and C6) giving about 16V. This is regulated by a 12V regulator, with a diode (D5) in the ground lead to increase the voltage by 0.6V. EPROMs require either 12.5V or 12.75V with a tolerance of 0.25V for programming. 12.6V will comply with either of these requirements.

A 6V transformer was used to reduce the power dissipation in the 5V regulator, IC1. A voltage doubler circuit operates very well when a lower current is required, as is the case with the 12.6V rail.

Construction

All the components except the transformer are mounted on a small PCB. The component overlay is shown in figure *.

No heatsinks are required for the intended use. If you are likely to use the unit for other purposes, it would be a good idea to fit a heatsink on IC1.

The prototype was fitted in a small plastic box, 80 x 80 x 55mm. This was rather a tight squeeze, so something a little larger is recommended.

The mains input arrives via a length of 2 core mains flex. The DC output is connected to a 6 pin DIN plug via a length of 3 core mains flex. A matching 6 pin DIN socket is fitted on the EPROM Programmer and other projects.

Parts

IC1	7805
IC2	7812
D1,2,3,4	1N4001
D5	1N4148
R1	1K0
C1	2200uF 16V
C2,C3,C7,C8	100nF
C4,C9	100uF 16V
C5,C6	1000uF 25V
SK1	DC OUTPUT
X1	6-0-6V 6VA

Case, PCB, cable, 13A plug with 3A fuse.