

VERSATILE POWER SUPPLY

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Using this circuit, you can obtain the following voltages (approx.) at a current limited to one ampere: 3.3V, 5V, 6V, 9V, 12V and 15V.

The AC mains is stepped down by transformer X1 to deliver the secondary output of 18V AC at a maximum current of 1A dependant upon the load. The transformer output is rectified by the bridge rectifier comprising diodes D1 through D4, filtered by capacitor C1 and fed to regulator IC

LM317, which is a 3-terminal positive regulator capable of providing 1.2V to 37 volts at 1.5A current to the load.

Resistor R13 and selected combinations of resistors R1 through R12 are used to produce approximately 3.3V, 5V, 6V, 9V, 12V and 15V at the output. The desired resistors are selected by switching into conduction one of the six pnp transistors T1 through T6 by grounding the corresponding transistor base using rotary switch S1.

For example, to get regulated 3.3V, simply rotate the knob of rotary switch to 3.3V position. Consequently, transi-

tor T1 is forward biased to switch resistors R1 and R2 (in series) across Adj pin of LM317 and ground to produce 3.3V.

Other voltages can be produced in the same way by using rotary switch S1. Capacitor C2 bypasses any ripple in the output. Diode D5 is used as the protection diode. Use a heat-sink for dissipation of heat from IC LM317. The fuse-rated lamp provides protection against short circuit.

This 1A rated power supply can be used for testing of various circuit ideas as well as construction projects published in EFY. ●

