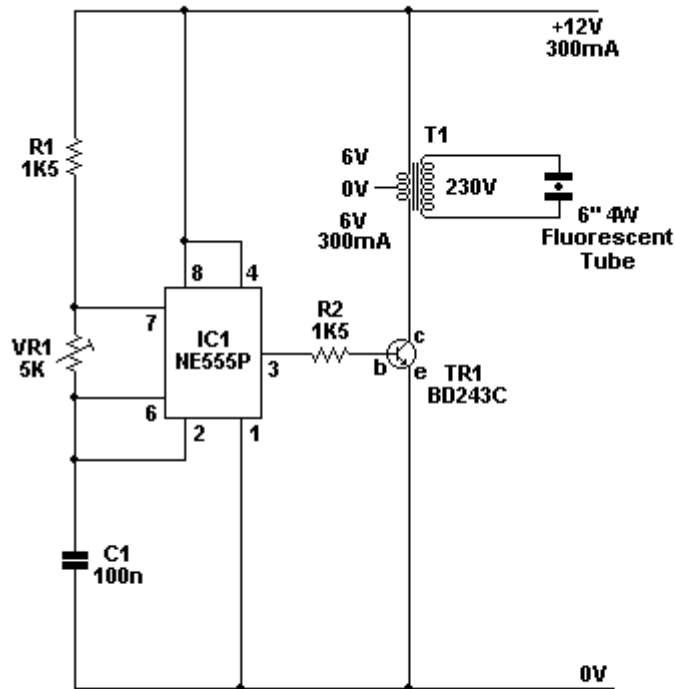


Neon Desklamp

By Rev. Thomas Scarborough.

Figure 1.



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This circuit will power a 6 inch 4 Watt fluorescent tube off a 12 volt supply, consuming 300 mA. It may also be powered by a suitably rated universal AC/DC adapter. Advantages of the design are: good light, low power consumption, and readily available stock parts.

The circuit is based on IC1, which is a 555 timer IC in astable mode. IC1's current output is amplified by TR1, and the voltage at the collector is stepped up by T1, a mains to 6-0-6 V transformer. Heat-sinks are advised for TR1 and T1.

Before applying power, VR1 should be advanced to a full 5 K. While power consumption is monitored with a multimeter, VR1 should be turned back slowly until power consumption rises to 300 mA maximum. The fluorescent tube should now shine brightly. Power consumption should not exceed 300 mA, or the circuit may be destroyed.

Should a universal AC/DC adapter be used at a later stage, constructors are advised to repeat the setup procedure with VR1, since the voltage of such adapters is unstable and may destroy the circuit.

Constructors should be aware that a high voltage is present at the transformer primary, which could deliver a nasty shock.