

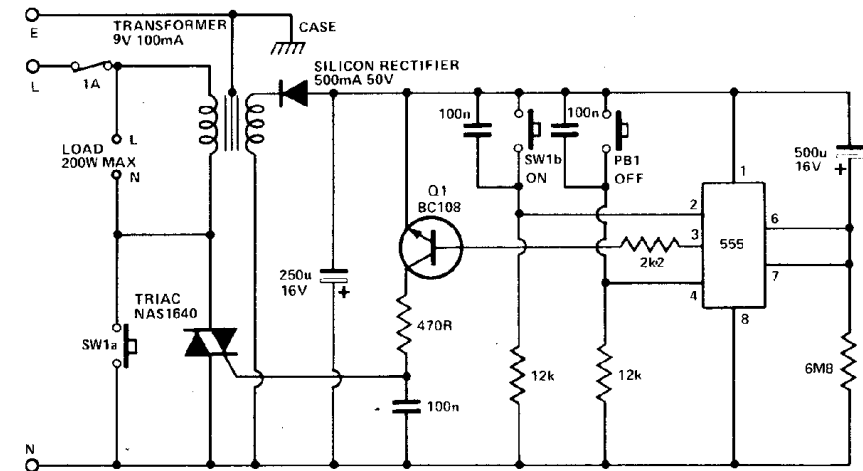
Automatic Night Light

C. N. Harrison

This circuit was devised to turn off a bedroom light after a period of an hour. It could, however, be used to control any load up to a maximum of 200W. At the end of the period the unit switches off both itself and the load.

The timing period is generated by a standard 555 timer in monostable mode controlled by SW1b and PB1. For reliable operation timing capacitor C should be selected for low leakage. The output of the timer switches Q1 which in turn controls the gate current for the triac. During the timing period the triac is fully turned on so there is no degradation of the waveform across the load or RFI due to switching transients.

To initiate the timing period mains must be applied to the transformer to provide a DC supply for the timing circuitry. This is achieved by momentarily bypassing the triac with one pole of the ON switch, SW1a. Because this switch must also provide power to the load



it must be rated accordingly. SW1b is used to trigger the 555 and start the timing period. Q1 will then be turned on, providing gate current to turn on the triac. When SW1 is released the supply and the load is maintained until the end of the timing period. PB1 is provided so

that the load can be switched off at any time. It may be omitted if this feature is not required.

Great care must be exercised with this circuit as all components are connected to mains neutral even when inactive.