# SMART SWITCH

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To switch on the mains voltage, either a mechanical switch or a relay offers a simple solution. However, the relay and its associated components occupy a lot of space and cannot be accommodated in a standard switch box. The 'smart switch' circuit, shown here, offers a better alternative. It is nothing but an 'on'/'off' controller and uses an electronic circuit that behaves like a normal switch. A flat pushbutton control provides an aesthetic look to your switch panel.

The switching circuit comprises an optocoupler circuit that receives input from a bistable switch formed by a cou-
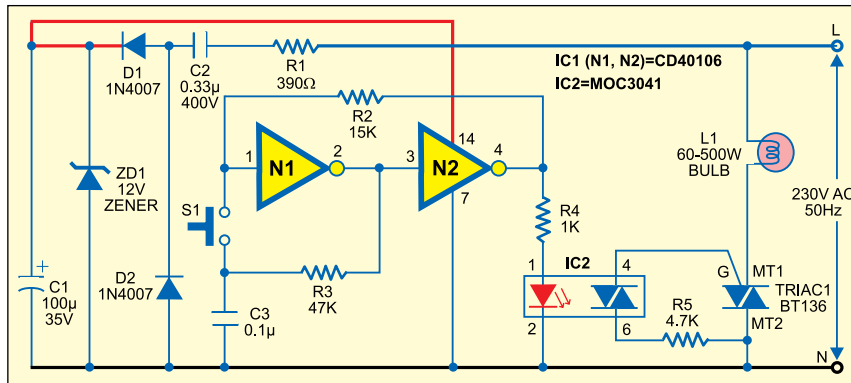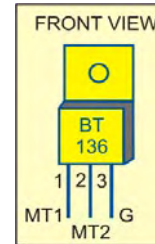


Fig. 2: Pin configuration of triac BT136

ple of Schmidt trigger gates that control a triac. The load can be switched on/off by simply pushing the pushbutton switch for a brief period. Every time the switch receives a push, the optocoupler toggles the triac. A special zero-crossing detector in the optocoupler supresses radio interference, unlike the arbitrary phase switching.

Since mains is not isolated, use a good-quality pushbutton switch with proper insulation to avoid lethal shock. Make sure that the triac can handle the current you are going to draw through it. If required, several pushbuttons can be wired in parallel to allow toggling of the triac from different locations. ●



Fig. 1: Circuit of the smart switch