

AUTOMATIC EMERGENCY LIGHT



■ PRIYANK MUDGAL

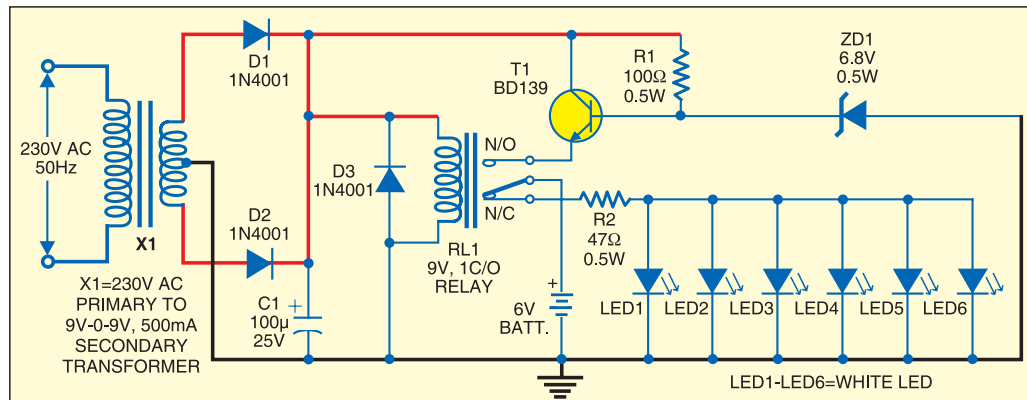
This emergency light has the following two advantages:

1. It turns on automatically

stepped down by transformer X1, rectified by a full-wave rectifier comprising diodes D1 and D2, filtered by capacitor C1 and fed to relay coil RL1. The relay energises to connect the bat-

tery to the charging circuit through its normally-opened (N/O) contacts. Free-wheeling diode D3 acts as a spike buster for the relay. The charging circuit is built around npn transistor BD139 (T1). The transistor's base is biased by a 6.8V zener diode (ZD1). Zener diode ZD1 conducts to provide an alternative path for the current to ground and battery charging stops.

When mains fails, relay RL1 de-energises. The battery now gets connected to the white LED array (comprising LED1 through LED6) through current-limiting resistor R2. The LEDs glow to light up the room. To increase the brightness in your room, you can increase the number of white LEDs after reducing the value of resistor R2 and also use a reflector assembly. ●



when the mains power fails, so you need not search it in the dark.

2. Its battery starts charging as soon as the mains resumes.

Operation of the circuit is quite straightforward. Mains supply is

connected to the charging circuit through its normally-opened (N/O) contacts. Free-wheeling diode D3 acts as a spike buster for the relay.

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istor's base is biased by a 6.8V zener diode (ZD1). Zener diode ZD1 conducts to provide an alternative path for the current to ground and battery charging stops.