

FLASHY CHRISTMAS LIGHTS

This simple and inexpensive circuit built around a popular CMOS hex inverter IC CD4069UB offers four sequential switching outputs that may be used to control 200 LEDs (50 LEDs per channel), driven directly from mains supply. Input supply of 230V AC is rectified by the bridge rectifiers D1 to D4. After fullwave rectification, the average output voltage of about 6 volts is obtained across the filter comprising capacitor C1 and resistor R5. This supply energises IC CD4069UB.

All gates (N1-N6) of the inverter have been utilized here. Gates N1 to N4 have been used to control four high voltage transistors T1 to T4 (2N3440 or 2N3439) which in turn drive four channels of 50 LEDs each through current limiting resistors of 10-kilo-ohm. Base drive of transistors can be adjusted with the help of 10-kilo-ohm pots provided in their paths. Remaining two gates (N5 and N6) form a low frequency oscillator. The frequency of this oscillator can be changed through pot VR1. When pot VR1 is adjusted to get the best results, a low leakage, good quality capacitor must be used for the timing capacitor C2

