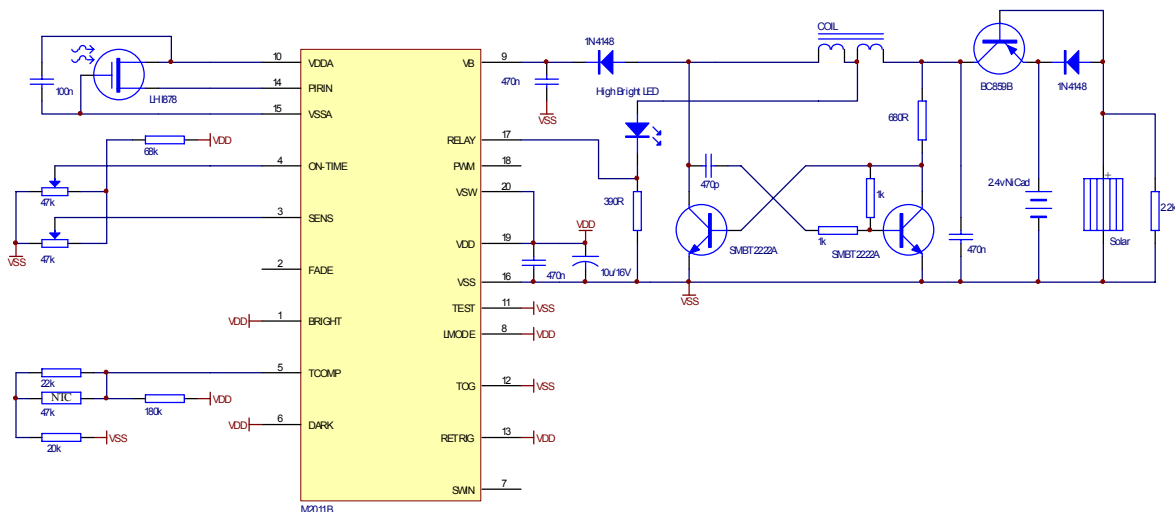


Motion Detector

This solar powered garden light is based on the M2011B PIR light controller chip. A high brightness LED acts as the light source. The unit is powered from rechargeable NiCad batteries, which are charged by a solar panel during daylight hours. The garden light does not detect motion during daylight. During darkness, the light is switched on with a low brightness level. Whenever motion is detected, the brightness is switched to a maximum.

The sensitivity and on-time are user adjustable in this application. The voltages from the trim pots are applied to the corresponding inputs of the M2011B. All MOS PIR motion controllers feature temperature compensation. The sensitivity is adjusted due to environmental temperature changes - thereby effectively keeping the sensitivity and detection range constant. The M2011B integrated circuit contains a low dropout voltage regulator with a wide input voltage range of 4.5V to 18V.



Supply Voltage

The demo unit is powered from a 2.4V DC supply, which is obtained from two series connected AA size NiCd rechargeable batteries (2 x 1.2V). Each battery is rated at 600mAh.

DC – DC Conversion

A small inductor based voltage converter circuit generates the supply voltages for the M2011 and the LED from the rechargeable batteries.

The M2011 voltage regulator generates a stable VDD for the integrated circuitry and the PIR sensor.

Solar Panel

The solar panel supplies 60mA of current at 4.5V in full sunlight. The voltage and current supply capability are dependent on the lighting conditions.

Supply Current

The current consumption in standby mode (Dark condition) is approximately 10mA. With the LED at full brightness, the unit consumes 40mA. This translates into 15 hours of high brightness or 60 hours of standby time with fully charged 600mAh batteries.

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Ordering Information

M2011B-SO20-300 (20 pin Surface mount, 300 mil)

Other packages are available on request.