

ST 589-01 Lab 6

A solar battery charger

In this last lab we will build a circuit that makes use of some semiconductor devices. This circuit is used to charge a rechargeable Nickel-cadmium (NiCd) battery using a solar panel. The components used in this lab are: a solar panel (6 V @ 25mA), a diodes, resistors, and NPN transistors which are used as general purpose switches.

The circuit charges a 3.7 V NiCd battery when this is illuminated. The solar panel biases the first NPN, so that the second NPN transistor is deactivated and the LED is off. A diode prevents the battery from discharging through the solar panel. Whenever the solar panel is not illuminated the LED is on indicating a battery discharge, otherwise it is off.

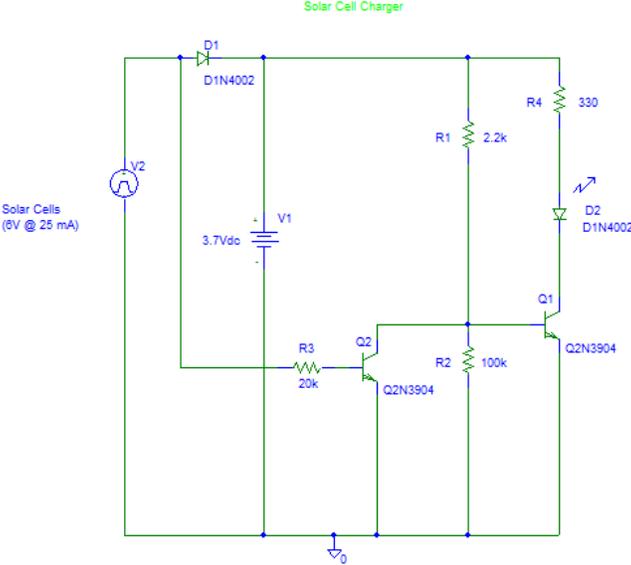


Figure 1. A solar charger circuit

Comments

Implement the circuit and verify that it charges a battery when the panel is illuminated, the indicator LED should be off when battering is being charged, and is on when battery is discharging.