

Solar Mobile Phone Charger Circuit

Abstract

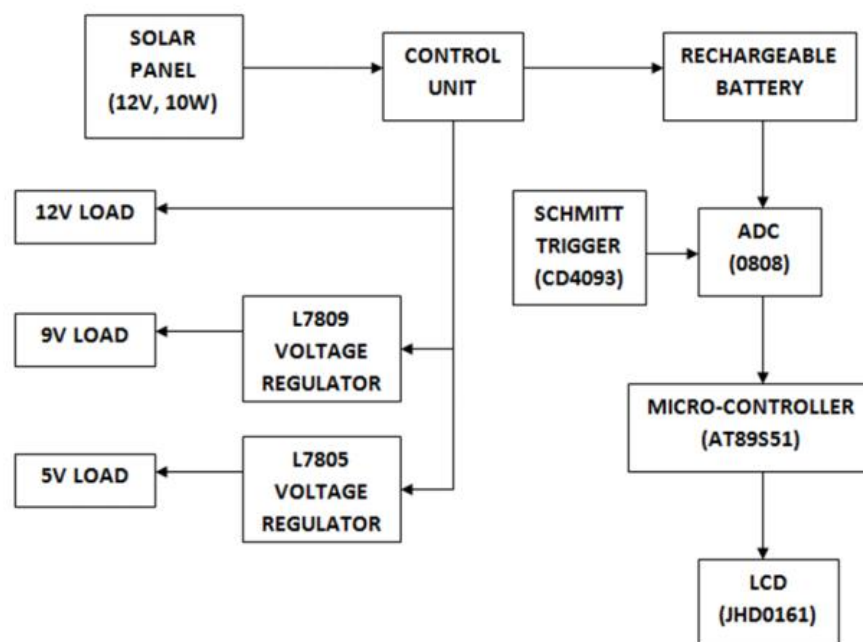
Solar act as good power supplies in bright sunlight. The only problem is the unregulated voltage due to the variation in intensity of light. Voltage regulator is used to solve this problem by regulating the output voltage. The charge so obtained is stored in the battery and is given to the respective loads. The charge present in this battery is analyzed and displayed on an LCD using a micro-controller.

Introduction

In today's environment conscious world, a lot of interest is being taken in alternate forms of energy. Solar power is a renewable source of energy, which has become increasingly popular in modern days. Today 80% of the energy we use comes from fossil fuels and about 1% comes from solar energy. It is estimated that the world's oil reserves will last for 30 to 40 years, whereas solar energy is forever. Solar energy has two big advantages over fossil fuels. The first is in the fact that it is renewable; it is never going to run out. The second is its effect on the environment. Burning of fossil fuels introduces many harmful pollutants into the atmosphere and contributes to global warming and acid rain. Solar cell directly converts solar energy into electricity. The solar cells that are connected together make up the solar panel. This can last up-to several decades without replacement. However, there is a drawback of solar power: energy can be produced only in the presence of sunlight. To overcome this, the solar panels are coupled with the rechargeable batteries, which can store excess power generated and

provide energy in the absence of sunlight. Solar energy has advantages over other renewable energy sources including wind and water power: solar power is generated using solar panels, which do not require any major mechanical parts, such as wind turbines. These mechanical parts can breakdown and cause maintenance issues and can also be quite noisy. Both of these issues are virtually non-existent with solar panels. This project aims at harvesting solar energy and storing it in a rechargeable battery. Using this battery various low-voltage device can be charged. Also, the charge in the battery is displayed on an LCD through a micro-controller.

Block Diagram



Application

- To charge mobile phone and camera (digital as well as CC cameras).
- MP3, CD and MD players can be charged.
- This device can also be used to charge batteries of portable DVD, smart card readers, etc.
- To charge laptop, I-pods, tablets, blue-tooth devices etc.
- To power 2W bulbs in hut, bed-lamps, low-watt lights, etc.

Advantage

Solar energy is a renewable energy sources. ' Solar energy comes in free of charge. ' Solar cells panel on the solar charger does not require much maintenance. ' It also helps reduces cost such as electric bills as the solar charger source of energy is free.