

Solar Charger Project

Steak Electronics

Contents

1 Overview	1
2 Chip Hunting	1
2.1 Board considerations	1

1 Overview

Want to charge a lead battery from a solar panel, and run some load on the battery occasionally. Want to monitor the load, and the charge of the panel.

2 Chip Hunting

Sorting by cheapest buck boost regulators, I've found a micrel chip, MIC4680, which is a simple buck reg. It can be adjustable, so I will take advantage of that with another slide pot, and use it to charge different battery types. These regs are \$2. The next realistic option I see is around 5-6 which are the true buck/boost switching regs.

Not sure how I will handle overcurrent. Probably a fuse, or ptc. Too much current will blow the fuse. Don't do that.

Let's start building the board.

2.1 Board considerations

Input will be any number of solar cells, in series and or parallel. They will go to the vreg. The vreg will go to the battery, which in turn will have a load, of a micro (probably a nano on sleep mode). But actually, I might want a micro that can operate at up to 14 volts... So a nano might not work. Looks like there is a high voltage PIC and Atmega, but the Atmega is obsolete :/

So cheapest is the Pic16. Might try that. It can handle up to 15 volts, which should be safe, with the regulator offering a float voltage (but only a float voltage. Unfortunately, the AVR was up to 18v...)

Unfortunately the PIC is eprom (i.e. UV erasable) only or One time programmed OTP only. Ugh.