The Solarbotics Bicore Experimenter's PCB

The ¼-Sized Switch/Charger (25cChg)

The 25cChg ¼-sized (25c = one quarter) Switch / Charger is a small mounting module for power switches that also contains a simple charger with status LED.

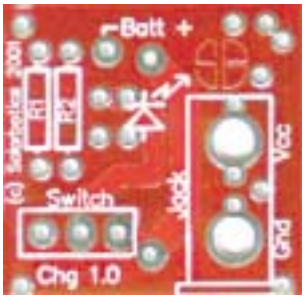
Necessary Parts:
1 x SPDT or SPST type switch
1 x Charging Jack / suitable matching power supply
1 x Charge Indicator LED
2 x 100 Ohm resistors (Blk/Brn/Brn)

This module probably won't see much application in a solar BEAM device, but it sure is handy with anything requiring batteries, especially ones that have soldered-in rechargeable Nicad cells.

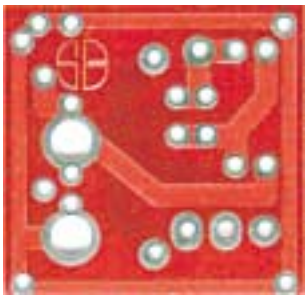
The Switch portion of the module requires a single-pole, single (or double) throw switch. That is, a switch with 2 or 3 pins.

The Charger portion is entirely optional to install, although it is a convenient circuit. The charging jack pads are large with various mounting holes to accommodate practically any type of jack, but DO make sure the polarity matches what's labeled on the PCB.

Assuming a 2 or 3 volt overhead from the charger (i.e.: You're charging 4.8V battery with 7 ~ 8V charger), the circuit will pass approximately 40mA peak, with the LED turning off (indicating full charge) when the current drops to about 15mA. At this point, it'll continue to trickle charge the battery indefinitely, so your device will always be ready to go.



Top (2X scale)

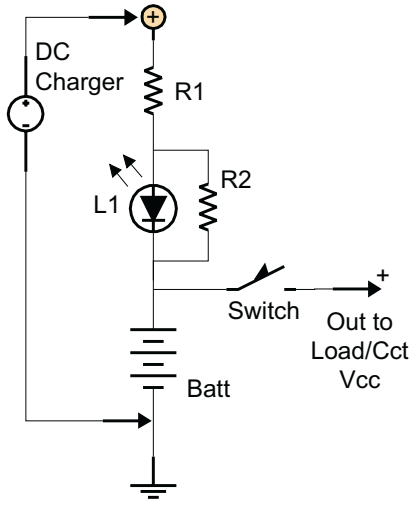

Bottom (2X scale)

- Edge Rail of PCB is Ground (-).
- Center Rail of PCB is Circuit Load Vcc (+).

- Circuit and Battery share same Ground rail.
- Connect Battery (+) ONLY to point "Batt +".

- If necessary, mount indicator LED on other side of PCB for better visibility.
- If desired, increase charge current by reducing R1 & R2.
- Use a DC power supply with at least 2V more than the voltage rating of your battery (I.e.: 6V battery, use a 8 ~ 10V charger).

- LED brightness is a good indication of charge condition. When LED turns off, the battery is practically fully charged.



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