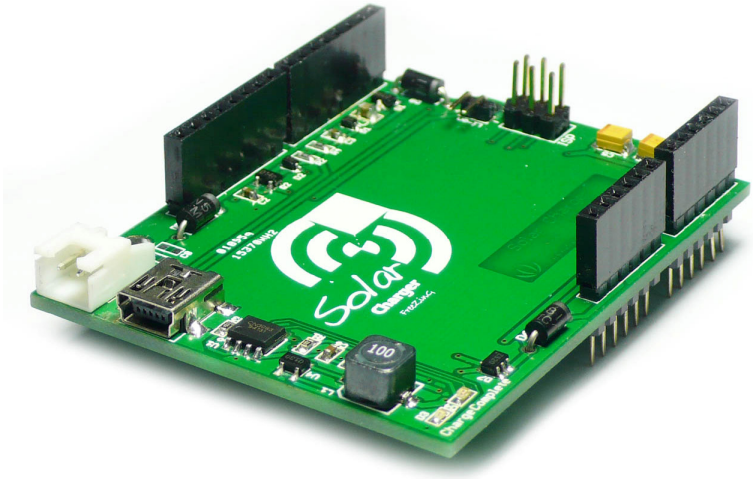
Solar Charger Shield

Overview



The solar charger is a stackable shield to Arduino compatible platforms, enables adaptive battery power and act as energy harvester for in-field charging. You may use various batteries just to shift up for 5V output, or put on Li-ion battery and solar panel to form an autonomous sensor unit.

Charging:

- Auto adjust charging current according to source capability
- Designed for inconstant supply like solar panel
- Optimized charging curve for Li-ion batteries
- Charging status indicator

Supplying:

- 0.9-4.2V wide input voltage
- 5 VDC regulated output
- Max 500mA output
- Max 87% conversion efficiency
- Build-in 1A over current protection

License

Specifications

PCB size	5.3 x 6.9 x 0.16 cm
Indicators	Charging ,complete
Power supply	4.4VDV-6VDC
Power Connector	Mini USB / JST
RoHS	YES

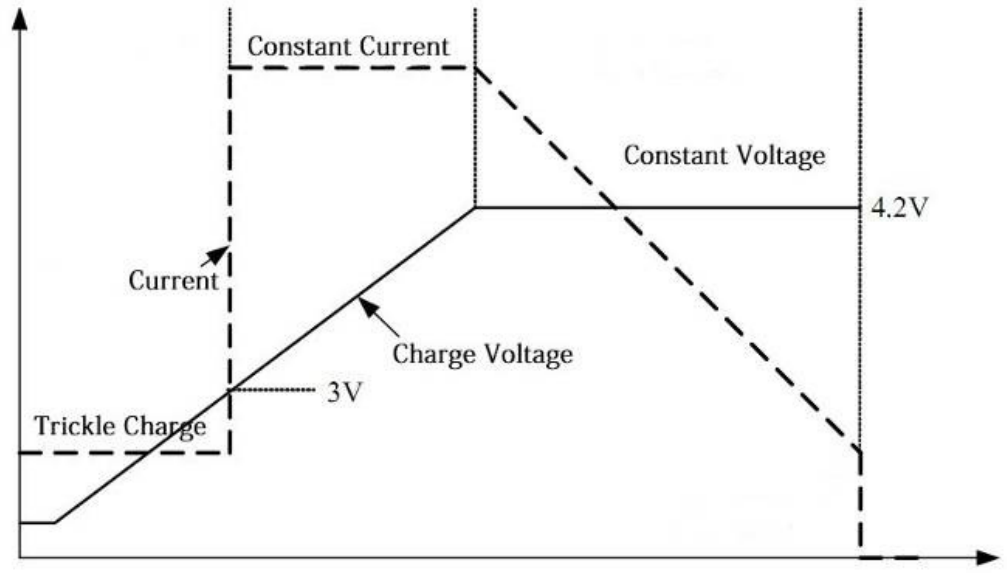
Charging

Specification	Min	Typ	Max	Unit
Input voltage	4.4	5	6	VDC
Low power threshold		3.7	3.9	VDC
Charge voltage	4.158	4.2	4.242	VDC
Precharge threshold	2.9	3	3.1	VDC

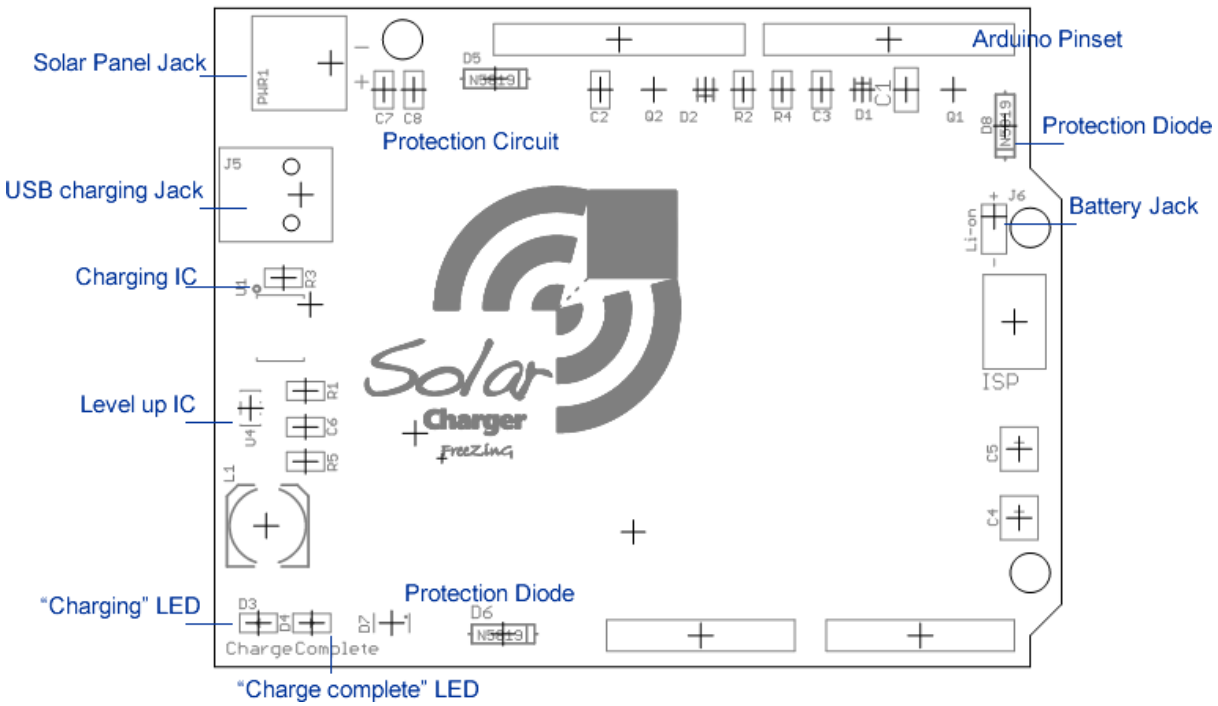
Power supplying

Specification	Min	Typ	Max	Unit
Battery voltage	2.8	3.7	4.2	VDC
Output voltage	4.6	4.8	5.0	VDC
Output current		200	500	mA
Level up efficiency	70	80	87	%

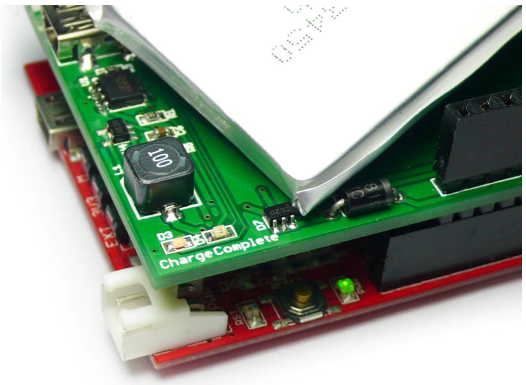
Charging curve



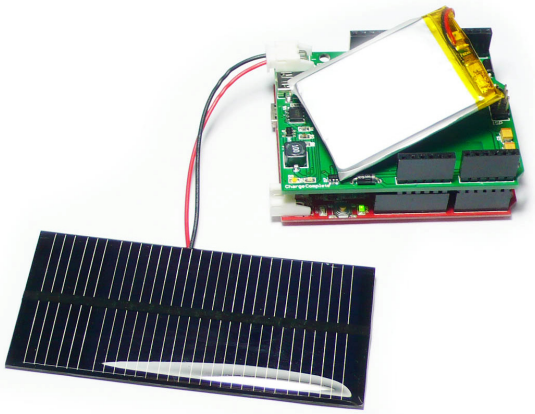
Hardware Installation



1. Stacked setup, put battery between the pin headers, please note the polarity while connecting the wires to the battery jac. (Red to +, black to -).



2. Solar panel or other energy sources should be connected to PWR1, solar panel Jack.

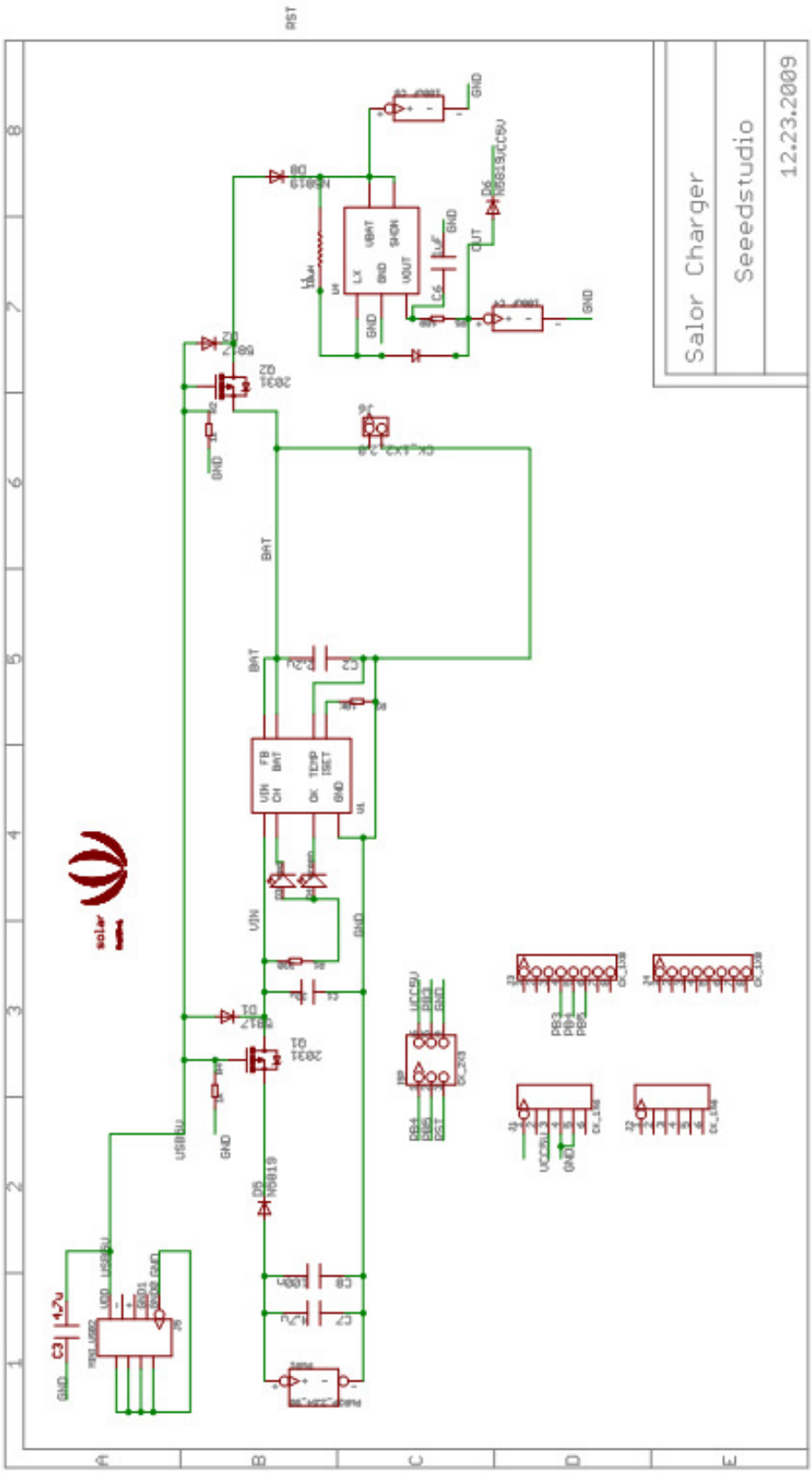


Energy Source: (4V To 6V output)
5V Solar cell
Regulated Motor output

Rechargeable battery (3.7V To 4.2V)
Lithium Battery
NiMh Battery

Regular battery (from 2.8V to 4.2V)
AAA
AA

Scheme


Salor Charger
Seeedstudio
12.23.2009
BAT
VIN
GND
USBBU
solar

Revision History

Rev.	Descriptions	Release date
V1.0	Initial version.	1.5.2010