

Sunflower Solar Power Manager

DFR0535

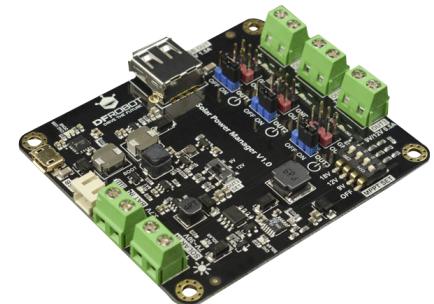
Product Overview

08/11/2022

For the most up-to-date information, visit www.mouser.com or the supplier's website.

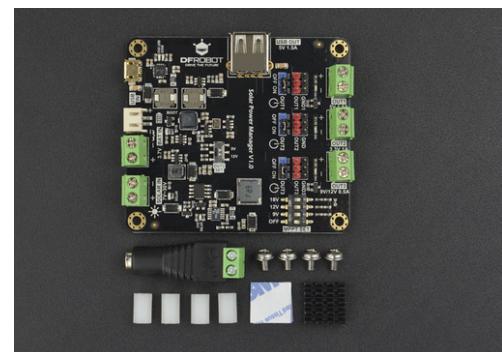
Description

DFRobot DFR0535 Sunflower Solar Power Manager is used for high-efficiency micro to middle power solar energy harvesting and management. This solar power manager features Maximum Power Point Tracking (MPPT), which maximizes the efficiency of the solar panel. The DFR0535 module provides up to 2A charging current to a 3.7V Li battery with an AC adapter or USB charger. This solar power manager also employs various protection functions such as Li-battery protection, battery/solar panel reverse connection protection, output over temperature, and over current protection. The DFR0535 is widely used in small solar street lamps, solar environment monitor systems, solar-powered robots, and solar power banks.



Features

- LTC3652 solar power management IC
- Constant voltage MPPT algorithm, maximizing solar panel efficiency
- Solar/AC adapter/USB charger charging modes
- Three individual ON/OFF controllable regulated power supplies for low-power applications
- Safe, stable, and high-efficiency MLCCs
- DC-DC buck topology
- USB connector with ESD shell
- Battery protections:
 - Over-charge
 - Over-discharge
 - Overcurrent
 - Reverse connection
- Output protections:
 - Short circuit
 - Overcurrent
 - Overheat



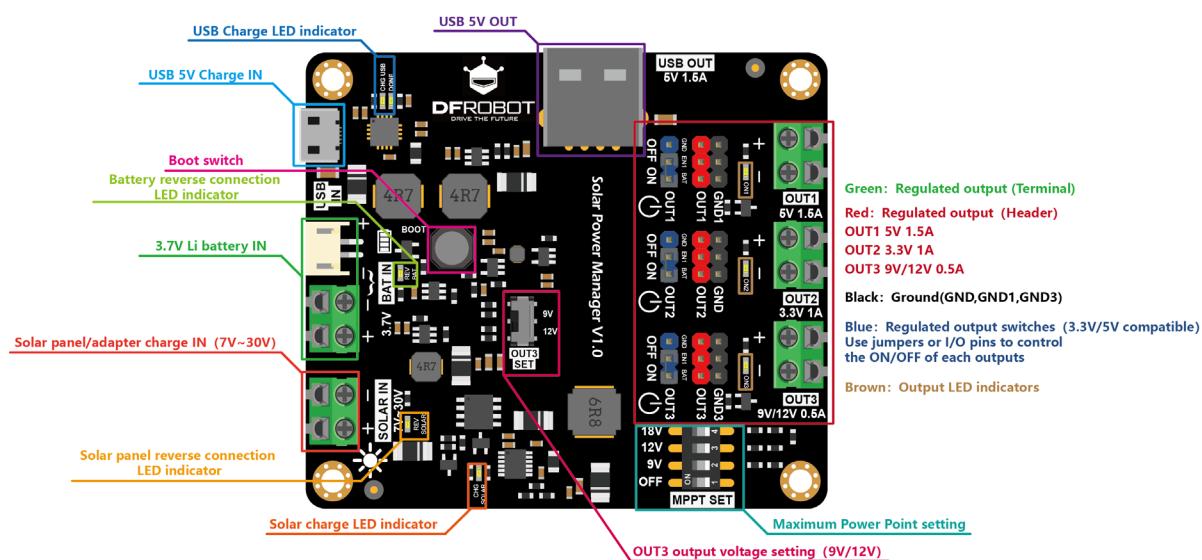
Specifications

- 7V to 30V solar input voltage
- 2A maximum charge current
- 3.7V Lithium battery
- 9V/12V/18V MPPT setting voltages
- $4.2V \pm 1\%$ charge cutoff voltage
- 5V 1.5A USB out
- 78mm x 68mm product dimensions
- -40°C to 85°C operating temperature range
- Three regulated outputs:
 - 3.3V 1A
 - 5V 1.5V
 - 9V/12V 0.5A
- USB charge efficiency:
 - 84% @ 1A
 - 74% @ 1.8A
- Solar charge efficiency:
 - 78% @ 1A
 - 72% @ 1.8A

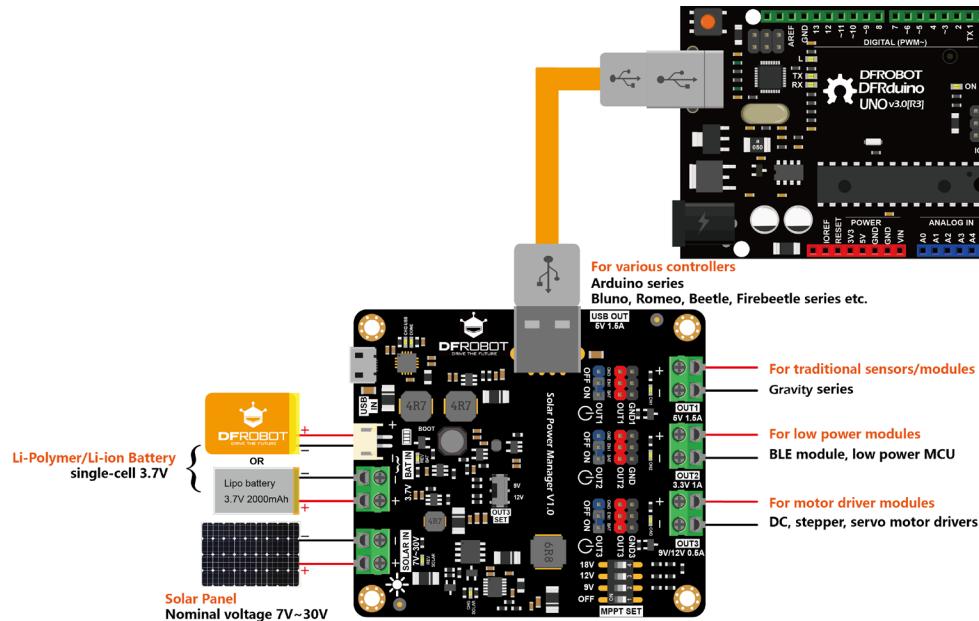
Applications

- Small solar street lamp
- Solar environment monitor system
- Solar-powered robots
- Solar power bank

Board Overview



Application Circuit



Schematic

[DFR0535 Sunflower Solar Power Manager](#)

Mouser Part Number

[View Part](#)

To learn more, visit <https://www.mouser.com/new/dfrobot/dfrobot-dfr0535-solar-power-manager/>