LTC4162-L Power Section

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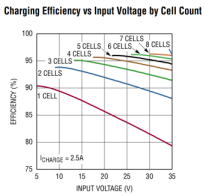
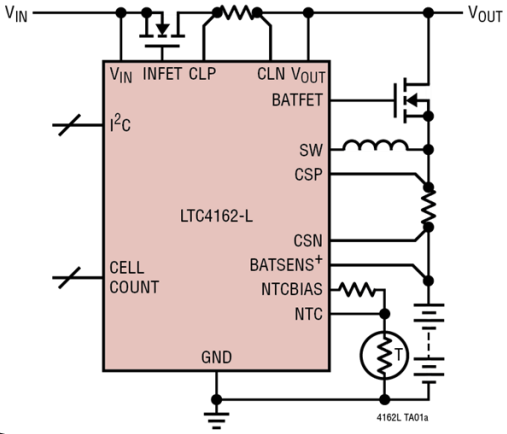
Contents

ANALOG DEVICES

AHEAD OF WHAT'S POSSIBLE™

POWER BY LINEAR™





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LTC4162-L

35V/3.2A Multicell Lithium-Ion Step-Down Battery Charger with PowerPath and I²C Telemetry

Solar Harvesting & Battery Charger

LTC4162's APPLICATION

Solar Harvesting , Battery Charger, Power Path Switching Logic

INPUT CH

02

POWER

TELEMETRY

Of Battery stats, Input Source Stats, Output Stats, Alerts.

Connectivity

I^2C

COMMUNICATION

SOLAR PANEL

Cells

36

Input MPPT

JEITA Temperature Controlled Charging

BATTERY

UPTO

8S

CHEMISTRY

Lithium Cobalt, $LiFePO_4$, & SLA Version

1 Features at a glance

- LTC4162 35V/3.2A Multi-Cell Lithium-Ion, Lead Acid Step-Down Battery Charger with PowerPath and I2C Telemetry.
- Input MPPT for Solar Panel Input.
- JEITA based Temperature Controlled Charging.

Parameters	Min	Typ	Max	Units
Battery Input Voltage	2.7	-	35	V
V_{IN}	4.5	-	36	V
DV_{CC}	1.8	3.3	5.5	V

Table 1: *Recommended Electrical Operating Conditions*

$I^2C Address : 0b1101000[R/W]$

2 Block Diagram

2.1 Application Specific Generic Block Diagram

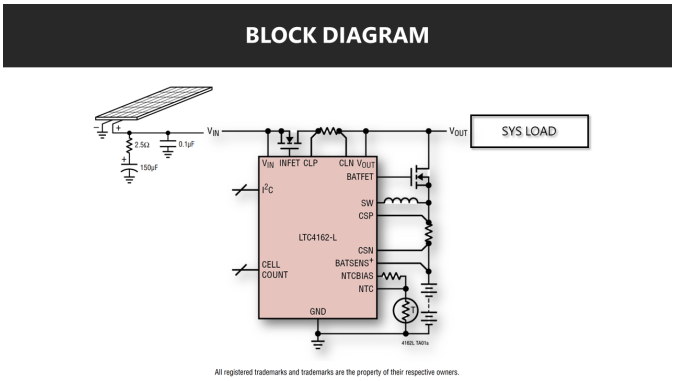

Figure 1: *Application Block Diagram*

The block diagram describes what are the sections and how they are related to one another. This application has two power source. One power source, is Solar Panel and the rating can ranges from 5W to 100 W, where the Vin less or equal to 36VDC. Second power source is the battery. This battery section should be either single battery or to be stacked along with BMS(Battery Management System) and NTC-10K. Only one power source channel to be selected at a time by this IC. Your application should not drive back the V_{out}.

3 Schematic Section

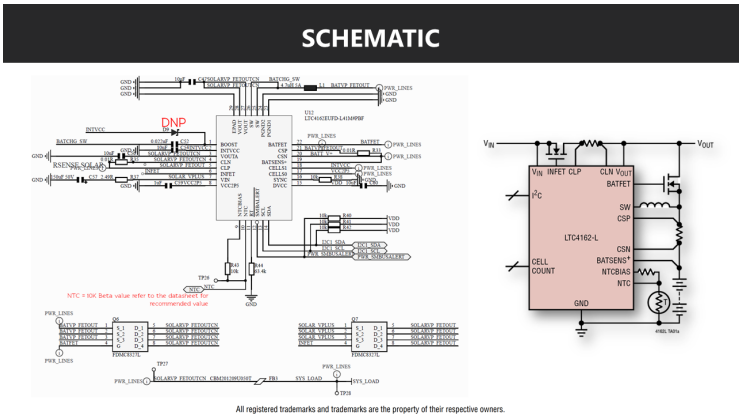

Figure 2: *Schematic Section*

- Go with the recommended values and ratings as mentioned in evaluation board manual or in datasheet.
- Have a close look over DNP marked parts and only install if required after your testing.
- Do provide a correct arrangement regarding Cell Count to IC.
- Make sure that in your application, Vout should NOT be back-driven.

4 PCB Layout Section

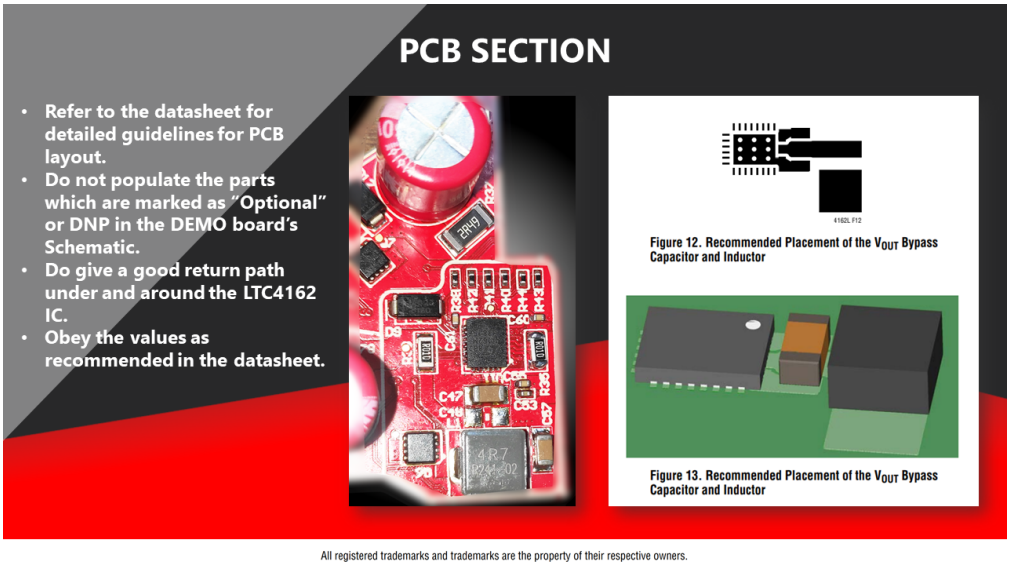

Figure 3: *PCB Layout Section*

5 Few Settings

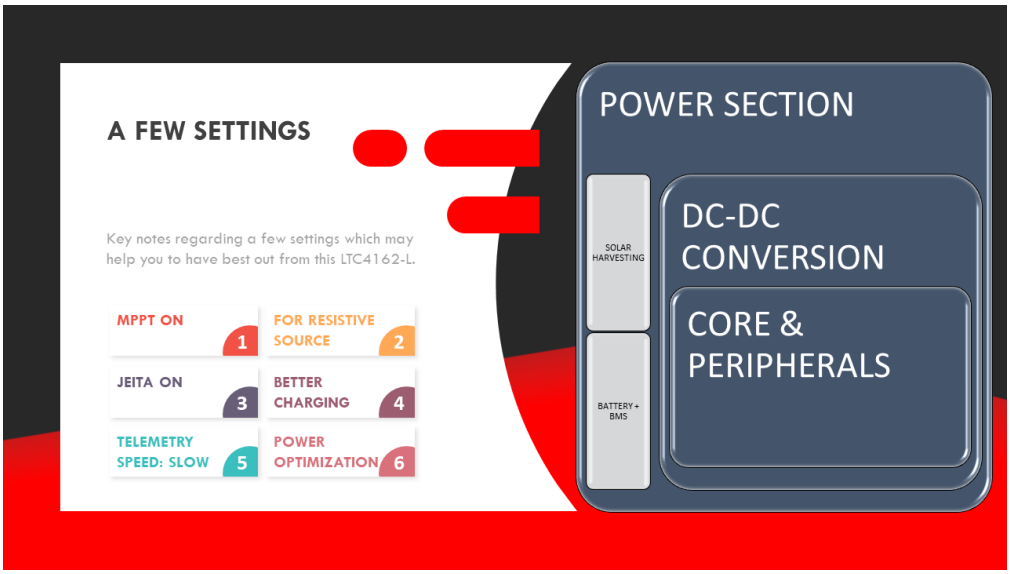

Figure 4: *Settings via Firmware*

- If MPPT is Off, you may want to switch it ON, and if on Vin, if there is a resistive power source then you should switch ON MPPT.
- You may also want to keep JEITA based charging.
- In case of power optimised design, you also consider to put the telemetry calculation to low speed.

List of Tables

List of Figures

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