CW6305B

500mA Linear Charger with Power Path Management

Features

- Linear Charger for Single Cell Li-ion/Li-Polymer Batteries
  - +28V Maximum Voltage for Input Source
  - ±0.5% Charge Regulation Voltage Accuracy
  - Up to 470mA Constant Current Charging
  - Down to 1mA Termination Current
  - Configurable 3.85V-4.6V Constant Voltage Charging in 12.5mV Steps
  - Configurable 4.2V-4.95V VSYS Regulation Voltage in 50mV Steps
- Configurable Input Voltage Regulation and Input Current Limit up to 500mA
- Power Path Management for Powering System and Charging Battery
  - System Reset and Shipping Mode Supported
  - Instant On even when Battery is Depleted
  - Battery Supplement Mode when System Consume More Power than Input Supply
- Battery NTC Thermistor Monitor
- Adjustable Thermal Regulation and Protection
- Over Current Protection in Discharge and Supplement Mode
- Charge Safety Timer and Pre-charge Timer
- I^2C Serial Interface and Watchdog during Charge and Discharge
- Lead-free CSP-9 package

Applications

- Internet of Things Devices
- Fitness Accessories
- Smart Watches
- BT Headsets/TWS Earbuds
- Low-Power Handheld Devices

General Description

The CW6305B is a high accuracy linear charger IC with power path management for Wearables and IoT devices using single-cell Li-ion/Li-Polymer batteries.

The device embeds a charge management block and fulfills full charge phases, including pre-charge, fast charge constant current (CC), fast charge constant voltage (CV) and charge termination.

The device integrates power path management (PPM) that allows the device to provide power for the system running while charging the battery even with a depleted battery. It also supports full system reset and shipping mode.

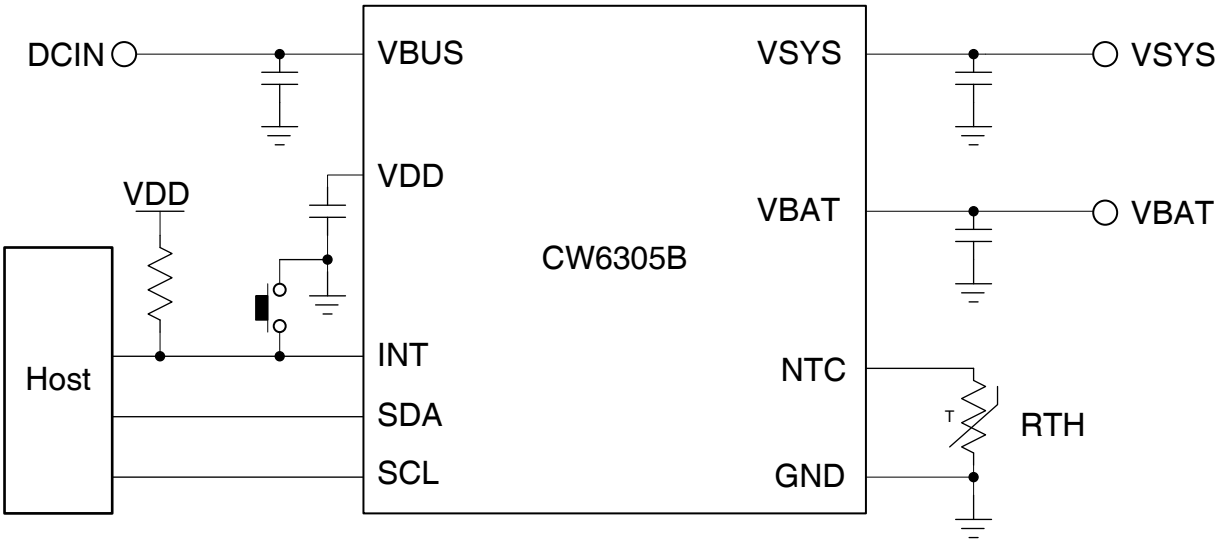
The CW6305B provides system over current protection (OCP) by limiting the current from the input to the system and that from the battery to the system. The battery to system discharging path will be cut off when battery voltage is lower than the battery under voltage lockout (UVLO) threshold.

The CW6305B could monitor the battery pack temperature via the NTC pin (10K or 100K NTC thermistor supported) and suspend charging once the battery is in hot or cold condition. The device also integrates charge safety timer and pre-charge timer. The ongoing charge will be turned off when either of the two is expired. An I^2C control interface allows the host to configure charger parameters and also get the IC status. I^2C watchdog is available during charge and discharge.

The device is available in a tiny lead-free 0.5mm pitch, 1.58mm x 1.58mm, 9-ball CSP package.

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Typical Application



Ordering Information

Part Number	Temperature Range	Package and Pin	Top Mark
CW6305BAAC	-40°C to 85°C	CSP-9	6305BA ACXXXX

Notes:

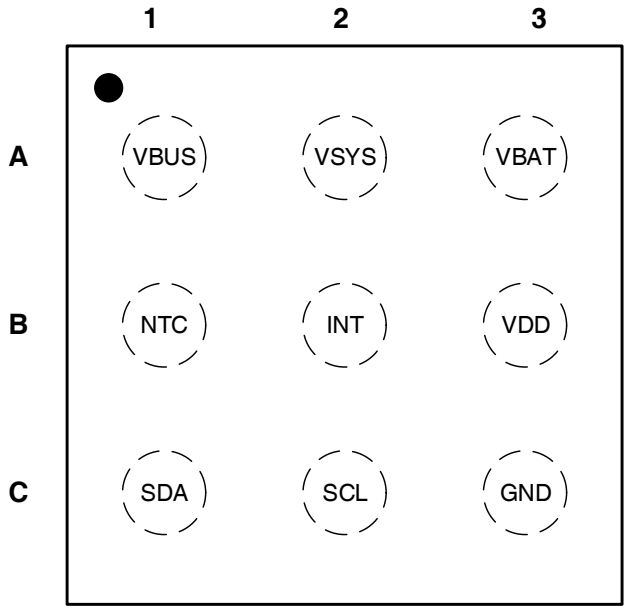
1) XXXX stands for the manufacture information. Contact Cellwise for details.

2) This product is Lead(Pb)-free and RoHS compliant package.

Pin Configuration

CSP-9 Package Top View

(Bump Side Down)



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