

HL7046

500mA, Single Cell Li-Ion and Li-Pol Battery Charger with Power Path

Description

The HL7046 is a highly integrated, single-cell, Li-ion/Li-polymer battery charger with power path management for space-limited portable applications. The HL7046 takes input power from either an AC adapter or a USB port to supply the system load and charge the battery simultaneously. The charger function features pre-charge (PRE.C), fast current (CC) and constant voltage(CV) regulation, charge termination, and auto-recharge.

The power path management function ensures continuous power to the system by automatically selecting the input, battery, or both to power the system. This function features a low dropout regulator from the input to the system. Power path management separates the charging current from the system load, which allows for proper charge termination and keeps the battery in full-charge mode.

The HL7046 provides a system short-circuit protection (SCP) function by limiting the current from the input to the system and the battery to the system. This feature is especially critical for preventing the Li-ion battery from being damaged due to an excessively high current. An on-chip battery under-voltage lockout (UVLO) cuts off the path between the battery and the system if the battery voltage drops below a programmable battery UVLO threshold. This prevents the Li-ion battery from being over-discharged. An integrated I²C control interface allows the HL7046 to program the charging parameters, such as input current limit, input minimum voltage regulation, charging current, battery regulation, charging current, battery regulation voltage, safety timer, and battery UVLO.

Features

- CHARGING
 - 0.5% Charge Voltage Accuracy
 - Termination Current down to 3mA
 - I²C Interface for setting charging parameters and status reporting
- PROTECTION
 - 24V Input Rating
 - 6V input overvoltage protection
 - Programmable thermal regulation
 - 150°C thermal shutdown protection
 - VSYS short-circuit protection
 - Operation over JEITA Range
 - Battery Temperature Monitoring and Programmable Timer
 - Watchdog timer
- SYSTEM
 - System Reset Function
 - Shipmode with a very small IBAT current
 - Built-in Battery Disconnection Function
 - Available in Small WLCSP-9 Package

Applications

- Wearable Devices
- Smart Handheld Devices
- Fitness Accessories
- Low-Power Handheld Devices
- Low-Power Handheld Devices

Typical Application Diagram

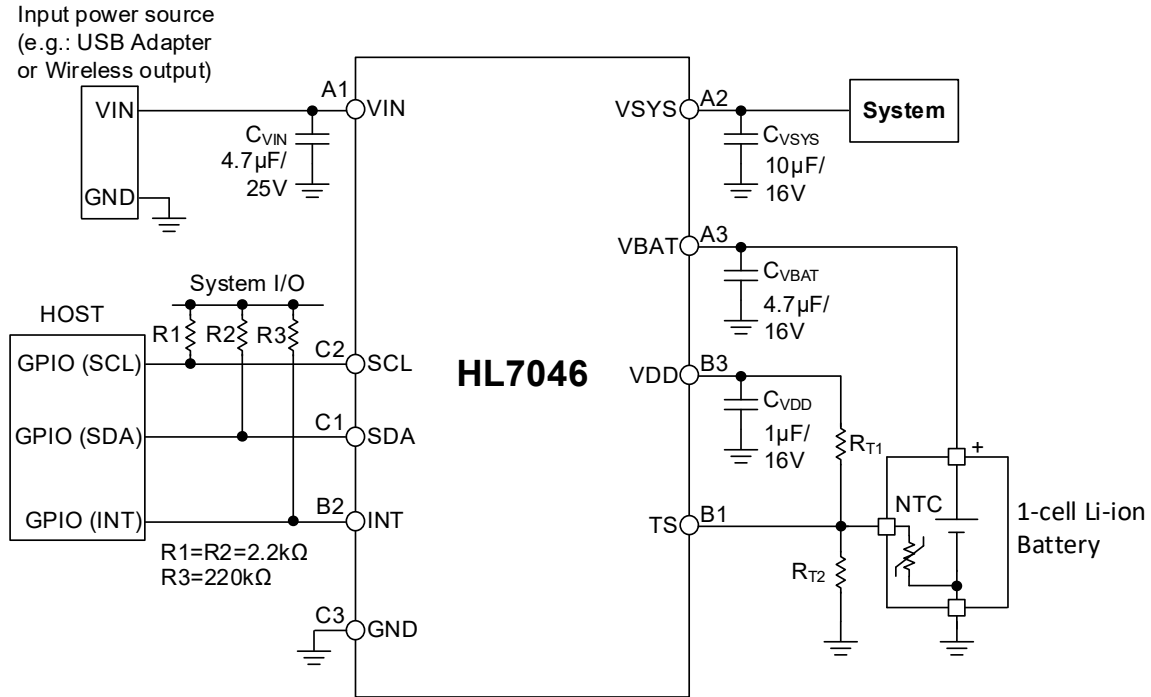


Figure 1. Typical Application Diagram

Order Information

Part Number	V _{IN_OVP}	V _{BAT_REG}	V _{SYS_REG}	Package
HL7046WL01	6V	4.20V default (3.6V to 4.545V in 15mV steps)	4.65V default (4.2V to 4.95V in 50mV steps)	WLCSP-9



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