

1-Cell Li-Ion Switching Charger with Intelligent Power-Path, 2.5 A Charge Current with Dual-Output

Features

- Dual-Path Output to Power-up System in Dead Battery
- Single Input for USB/TA
- High-Efficiency Synchronous Switching Regulator
- 20 V Maximum Withstanding Input Voltage
- OVP Selectable over I²C
- Minimize Charging Time with Remote Sense
- Up to 2.5 A Load Current for System or Battery
- Programmable Charge Parameters via I²C Compatible Interface
 - . Fast Charge Current
 - . Charge Termination Current
 - . Battery Regulation Voltage
 - . Pre-charge Current
 - . Fast Charge Threshold Voltage
 - . Charge Reduction Threshold Voltage
- 400 kHz Full-Speed I²C Interface
- 1.5 MHz Switching Frequency
- Charge Reduction Mode for Maximizing Charging Efficiency
- Protection
 - . Thermal Protection
 - . Thermal Regulation
 - . Input / Output Overvoltage Protection
 - . Adaptive Input Current Limit Protection (AICL)
 - . Reverse Leakage Protection
 - . No Battery Detection over Pin Detection
 - . Battery OVP Protection
 - . Over-Current Protection in Discharge Mode
- Boost Mode Operation for USB OTG
 - . Output Voltage: 5.0 V to 5.2 V, Programmable at 900 mA
- 25-bump 2.08 mm x 2.08 mm WLCSP Package

Applications

- Mobile and Smart Phones
- Tablets
- Portable Devices

Description

The SM5414 is a fully programmable switching charger with dual-path output for single-cell Li-Ion and Li-Polymer batteries. This dual-path output allows mobile applications with fully discharged battery or dead battery to boot up the system. High efficiency and switch-mode operation reduce heat dissipation and allow for higher current capability for a given package size. In addition, the device features single input with a 20 V withstanding input, and charges the battery with the current up to 2.5 A. The charging parameters and operating modes are fully programmable over an I²C Interface that operates up to 400KHz.

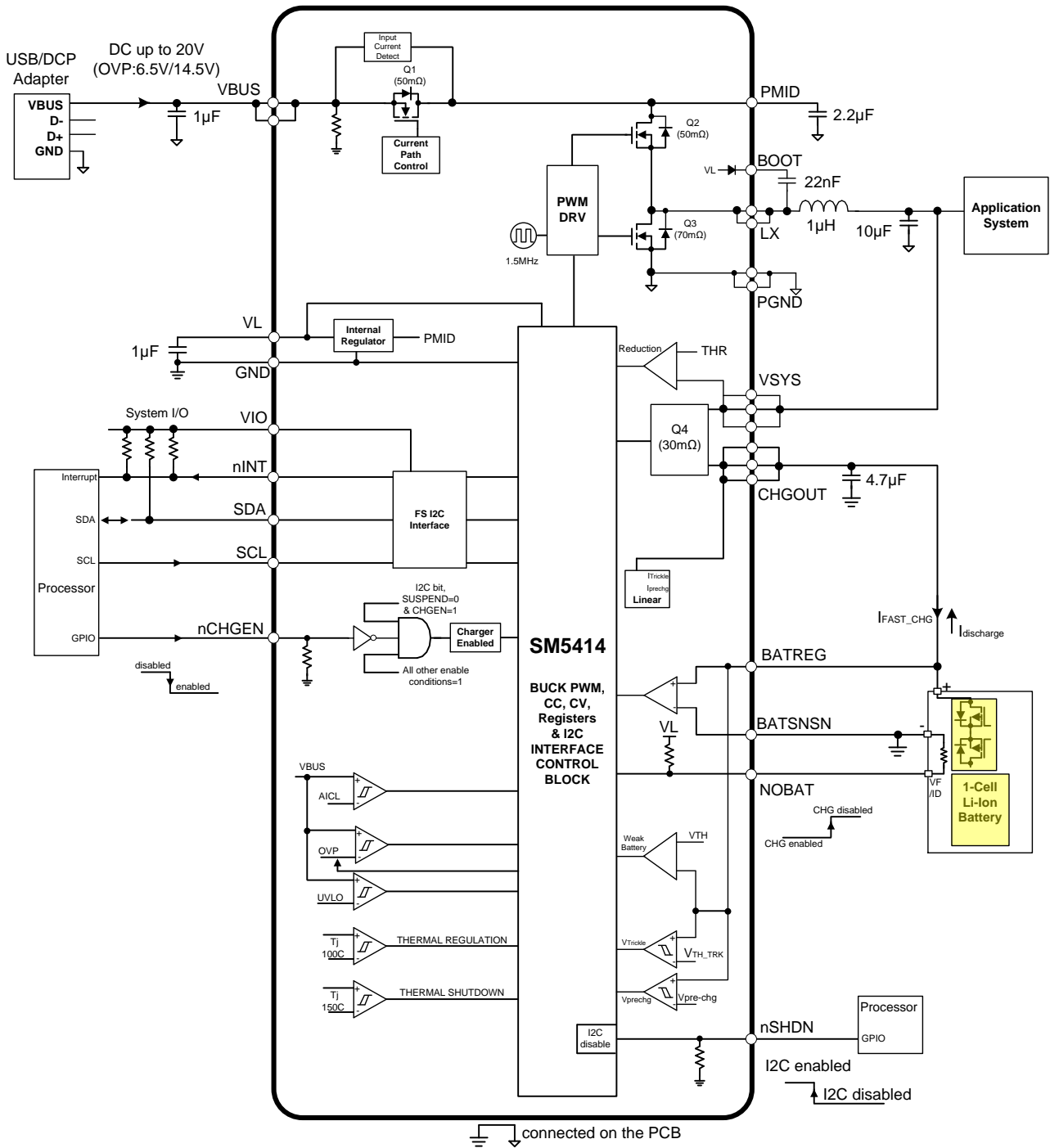
The SM5414 is a highly integrated synchronous switch-mode charger, featuring integrated OVP and Power FETs. The charger and boost regulator circuits switch at 3 MHz to minimize the size of external passive components. The device is able to operate as a boost regulator for the USB-OTG function via either I²C command or an external pin from the host or processor. The SM5414 is available in a 25-bump, 2.08 mm x 2.08 mm, WLCSP package.

Device Information

Part	Package	Size
SM5414	25 WLCSP	2.08 mm x 2.08 mm

SM5414

Simplified Block Diagram



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