

RC5201

Chemistry Independent Intelligent Battery Charger

Features

- Chemistry independent charging
- SMBus™ 2-wire serial interface controlled
- Single and dual battery systems
- 8 bit output voltage DAC
- 8 bit current DAC
- 4 bit power DAC
- 6A max charging current
- 19V max battery voltage
- 24V max input voltage
- 6V min input voltage
- 3.3V, $\pm 1\%$ over temperature “keep alive” precision reference
- 5V keep-alive regulator controller onboard
- 100% maximum duty-cycle
- Synchronous rectification
- Voltage mode control
- System soft start protects during adapter hot plug-ins
- System current limit protection
- Output overvoltage crowbar protection
- Undervoltage (UVLO) shutdown
- Charger output soft start implemented digitally
- Input Isolation P-FET open with un-powered adapter
- Battery backfeed prevented
- Available in SSOP 24 package and TSSOP24
- Optimized response for each control loop (current, voltage and power)
- 90% efficiency for minimum heat dissipation
- Power down driven by SMBus or by adapter not available
- Controlled drive of discrete FETs minimizes switching power dissipation
- Logic signal ACAV indicates presence of AC adapter (adjustable threshold)
- Average current control
- Remote sense input
- Voltage feed forward

Applications

- Notebooks' fast chargers
- PDAs
- Hand-held portable instruments

Description

The RC5201 is a smart battery charger IC controller for Li+ and Ni based battery chemistries. The charger (slave) together with the host controller and smart battery constitutes a smart battery system that communicates via the SMBus protocol, a two wire serial communication system.

An innovative power control loop allows operation from line power and battery charging (with residual power) without exceeding the max input power programmed according to the AC adapter power rating.

Block Diagram

