



Versatile 35V_{IN}/35V_{OUT} Synchronous Buck Battery Charger Controller Offers up to 20A Charge Current, Multichemistry Operation & Digital Telemetry

MILPITAS, CA – July 14, 2015 – Linear Technology Corporation introduces the [LTC4015](#), a highly integrated, high voltage multichemistry synchronous step-down battery charger controller with onboard telemetry functions. The device efficiently transfers power from a variety of input sources, such as wall adapters and solar panels, to a Li-Ion/Polymer, LiFePO₄ or lead-acid battery stack and system load up to 35V. It provides advanced system monitoring and management functionality, including battery coulomb counting and health monitoring. While a host microcontroller is required to access the most advanced features of the LTC4015, the use of an I²C port is optional. The main charging features of the product can be adjusted using pin-strap configurations and programming resistors.

The device offers precision $\pm 5\%$ charge current regulation up to 20A, $\pm 0.5\%$ charge voltage regulation and operation over a 4.5V to 35V input voltage range. Applications include portable medical instruments, military equipment, battery backup applications, industrial handhelds, industrial lighting, ruggedized notebooks/tablet computers, and remote powered communication and telemetry systems.

The LTC4015 contains an accurate 14-bit analog-to-digital converter (ADC) as well as a high precision coulomb counter. The ADC continuously monitors numerous system parameters, including input voltage, input current, battery voltage, battery current, and reports battery temperature and battery series resistance (BSR) on command. By monitoring these parameters,

the LTC4015 can report on the state of health of the battery, as well as its state of charge. All system parameters can be monitored via a 2-wire I²C interface, while programmable and maskable alerts ensure that only the information of interest causes an interrupt.

The LTC4015's onboard charging profiles are optimized for each of a variety of battery chemistries including Li-Ion/Polymer, LiFePO₄, and lead-acid. Configuration pins allow the user to select between several predefined charge algorithms for each battery chemistry, as well as several algorithms whose parameters can be adjusted via I²C. Both charge voltage and charge current can be automatically adjusted based on battery temperature to comply with JEITA guidelines, or custom settings.

The LTC4015 is housed in a 5mm x 7mm QFN package with an exposed metal pad for excellent thermal performance. E- and I-grade devices are guaranteed for operation from –40°C to 125°C. 1,000-piece pricing starts at \$5.95 for the E-grade and devices are available from stock. For more information, visit www.linear.com/product/LTC4015.

Photo Caption: 35V_{IN}/35V_{OUT} Step-Down Power Manager Charger Controller


Summary of Features: LTC4015

- Multichemistry Li-Ion/Polymer, LiFePO₄ Lead-Acid Battery Charger with Termination
- High Efficiency Synchronous Step-Down Controller Charger
- 14-Bit ADC for Monitoring V_{BAT}, I_{BAT}, V_{IN}, I_{IN}, V_{SYSTEM} & Die Temperature
- Battery Capacity & Health Monitor
 - o Precision Coulomb Counter
 - o 14-Bit ADC for Monitoring BSR & Battery Temperature
- Wide Charging Input Voltage Range: 4.5V to 35V
- Wide Battery Voltage Range up to 35V
- Advanced Maximum Power Point Tracking Algorithm
- Optional I²C Serial Port Control
- Ship-and-Store Feature Maximizes Battery Shelf Life
- Input & Output Ideal Diodes Provide Low Loss PowerPath™
- Thermally Enhanced 38-Lead 5mm x 7mm QFN Package

The USA list pricing shown is for budgetary use only. International prices may differ due to local duties, taxes, fees and exchange rates.

About Linear Technology

Linear Technology Corporation, a member of the S&P 500, has been designing, manufacturing and marketing a broad line of high performance analog integrated circuits for major companies worldwide for over three decades. The Company's products provide an essential bridge between our analog world and the digital electronics in communications, networking, industrial, automotive, computer, medical, instrumentation, consumer, and military and aerospace systems. Linear Technology produces power management, data conversion, signal conditioning, RF and interface ICs, μ Module[®] subsystems, and wireless sensor network products. For more information, visit www.linear.com

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