



400mA Synchronous Buck Battery Charger Features 40V Operation to Accommodate a Variety of Input Sources

MILPITAS, CA – August 7, 2014 – Linear Technology Corporation introduces the [LTC4121](#), a constant-current/constant-voltage 400mA charger for Lithium-Ion, LiFePO₄ and lead-acid batteries. The LTC4121's high efficiency, synchronous step-down topology accepts a wide 4.4V to 40V input. A programmable 3.5V to 18V battery charge voltage range with tight $\pm 1\%$ accuracy makes the LTC4121 suitable for a variety of battery chemistries. The fixed output float voltage version, LTC4121-4.2, is suitable for 1S lithium-ion battery packs. A synchronous architecture enables charging efficiency up to 94% as well as low dropout start-up and operation. Typical applications include handheld instruments, solar-powered devices, as well as industrial and military sensors and devices.

To accommodate high impedance input sources such as solar panels, the LTC4121 can regulate its input voltage to a programmable percentage of the input open circuit voltage. If the input voltage falls below the user-defined percentage of the open circuit voltage, charge current will be automatically reduced. This maximum power point tracking (MPPT) technique enables maximum power operation with a variety of high impedance input sources, even in non-ideal operating environments.

The LTC4121 features programmable charge current from 50mA to 400mA and low voltage battery preconditioning. A recharge function starts a new charging cycle if the battery voltage drops 2.2% below the programmed charge voltage. Safety features include a two-hour termination timer as well as NTC temperature qualified charging. Two open-drain outputs provide charge and fault status information.

The LTC4121 is housed in a low profile (0.75mm) 16-pin 3mm x 3mm QFN package with exposed pad for excellent thermal performance. The device is guaranteed for operation from -40°C to 125°C in both E and I grades. 1,000-piece pricing starts at \$2.60 each for the E grade. For more information, visit www.linear.com/product/LTC4121


Photo Caption: 40V, 400mA Sync Buck Battery Charger with MPPT

Summary of Features: LTC4121

- Wide Input Voltage Range: 4.4V to 40V
- Adjustable Battery Charge Voltage: 3.5V to 18V
- Temperature Compensated Input Voltage Regulation for Maximum Power Point Tracking (MPPT)
- Fixed 4.2V Charge Voltage Option: LTC4121-4.2
- High Efficiency: Up to 94%
- 50mA to 400mA Programmable Charge Current
- $\pm 1\%$ Feedback Voltage Accuracy
- Programmable $\pm 5\%$ Accurate Charge Current
- Thermally Enhanced, Low Profile (0.75mm) 16-Lead 3mm \times 3mm QFN Package

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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