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Linear USB Power Manager Handles Power Selection, Battery Charging & Integrates Three Buck Regulators

MILPITAS, CA – July 5, 2007 – Linear Technology Corporation announces the LTC3557, a multi-function power management solution for Li-Ion/Polymer battery applications. The LTC3557 integrates a linear PowerPath™ manager, a standalone battery charger, ideal diode, three high efficiency synchronous buck regulators and an always-on LDO in a low-profile 4mm x 4mm QFN package. The powerpath manager seamlessly manages the transition between multiple input sources and power to the load, while for fast charging the linear battery charger delivers up to 1.5A charge current from a wall adapter supply or up to 500mA charge current from a USB port. The LTC3557's three integrated synchronous buck regulators feature 100% duty cycle operation and are capable of delivering output currents of 600/400/400mA respectively, with adjustable output voltages down to 0.8V. The high 2.25MHz switching frequency allows the use of tiny low cost capacitors and inductors less than 1mm in height. The internal low $R_{DS(ON)}$ switches enable efficiencies as high as 95%, maximizing battery run time. In addition, pin-selectable Burst Mode® operation optimizes efficiency at light loads with a quiescent current of only 35uA per regulator (<1uA in shutdown). Furthermore, the regulators are stable with ceramic output capacitors, achieving very low output voltage ripple.

The LTC3557's standalone autonomous operation simplifies design, eliminating the need for an external microprocessor for charge termination. To preserve battery energy, the IC draws <6uA from the battery in suspend mode. The LTC3557 can control a high-voltage buck regulator to achieve high efficiency Bat-Track™ charging and powerpath control from a high voltage source, reducing power dissipation. The charger is compatible with inputs up to 5.5V (7V absolute maximum transient for added robustness). The internal 200mOhm ideal diode plus optional external ideal diode controller provide a low loss power path when input current is limited or unavailable, maximizing thermal performance.

The LTC3557 is available from stock in a compact, low-profile (0.75mm) 4mm x 4mm QFN-28 package. Pricing starts at \$3.95 each for 1,000-piece quantities.

Photo Caption: Multi-Function Linear Power Manager + Battery Charger + Triple Sync Buck

Summary of Features: LTC3557

- Complete Multi-Function ASSP: Linear Power Manager, Li-Ion/Polymer Battery Charger & Three Synchronous Buck Regulators

- Thermally Enhanced, Low Profile (0.75mm) 28-Lead 4mm x 4mm QFN Package

POWER MANAGER & BATTERY CHARGER

- Charge Current Programmable up to 1.5A from Wall Adapter Input
- Seamless Transition Between Input Power Sources: Li-Ion Battery, USB, 5V Wall Adapter or High Voltage Buck Regulator with Bat-Track Adaptive Output Control
- 200mOhm Internal Ideal Diode Plus Optional External Ideal Diode Controller Provides Low Loss Power Path from Battery to Load

- Standalone Autonomous Operation

DC/DCs

- Three High Efficiency Synchronous Buck Regulators with Pin Selectable Burst Mode Operation
- Buck Regulator Adjustable Output Voltage Range: 0.8V to V_{BAT}
- Buck Regulator Output Currents: 600mA, 400mA, 400mA
- Always-On 25mA/3.3V LDO

About Linear Technology

Linear Technology Corporation, a manufacturer of high performance linear integrated circuits, was founded in 1981, became a public company in 1986 and joined the S&P 500 index of major public companies in 2000. Linear Technology products include high performance amplifiers, comparators, voltage references, monolithic filters, linear regulators, DC-DC converters, battery chargers, data converters, communications interface circuits, RF signal conditioning circuits, and many other analog functions. Applications for Linear Technology's high performance circuits include telecommunications, cellular telephones, networking products such as optical switches, notebook and desktop computers, computer peripherals, video/multimedia, industrial instrumentation, security monitoring devices, high-end consumer products such as digital cameras and MP3 players, complex medical devices, automotive electronics, factory automation, process control, and military and space systems. For more information, visit www.linear.com

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