



USB Power Manager & Dual Buck PMIC Optimized for Ultralow I_Q

MILPITAS, CA – June 4, 2009 – Linear Technology Corporation announces the LTC3554, a micropower multifunction power management integrated circuit (PMIC) solution for portable Li-Ion/Polymer battery-based applications. The LTC3554 integrates a USB-compatible linear PowerPath™ manager, a stand-alone battery charger, two high efficiency synchronous buck regulators and pushbutton control in an ultra-thin (0.55mm) 3mm x 3mm QFN package. A pin-selectable standby mode reduces battery drain current to just 10uA with all outputs on. The LTC3554 is well suited for low power portable device applications, including personal navigation devices (PNDs), media players and handheld medical and industrial devices.

The LTC3554's PowerPath manager with automatic load prioritization seamlessly manages the transition between multiple input sources to power the load, while delivering up to 400mA battery charge current from a USB port or 5V wall adapter supply. The input current limit is pin-selectable and internally set (no external resistor is required). The LTC3554 is compatible with inputs up to 5.5V (7V absolute maximum transient for added robustness). The device's "instant-on" operation ensures system load power even with a fully discharged battery. Autonomous operation simplifies design, eliminating the need for an external microprocessor for charge termination. The internal 240mOhm ideal diode provides a low loss power path to the load when input current is limited or unavailable. An NTC function is onboard for temperature-qualified charging.

The LTC3554's two integrated synchronous buck regulators feature 100% duty cycle operation and are capable of delivering output currents of 200mA each, with adjustable output voltages down to 0.8V. For flexibility, the regulators may be enabled and disabled independently. The oscillator frequency and corresponding patented slew rate circuitry are pin-selectable (1.125MHz or 2.25MHz), allowing the application circuit to dynamically trade off efficiency and EMI performance. The high switching frequencies also allow the use of tiny low cost capacitors and inductors less than 1mm in height. Internal low R_{DS(ON)} switches enable

efficiencies as high as 93%, further maximizing battery run time. In addition, Burst Mode[®] operation optimizes efficiency at light loads with a quiescent current of only 25uA per regulator (<1uA in shutdown). Furthermore, the regulators are stable with ceramic output capacitors, achieving very low output voltage ripple. The integrated pushbutton controller provides buck regulator sequencing and access to an ultralow current (<1uA) Hard Reset state, saving battery run time.

The LTC3554 is available from stock in a compact, ultralow-profile (0.55mm) 3mm x 3mm UTQFN-20 package. Pricing starts at \$2.35 each for 1,000-piece quantities. For more information, visit www.linear.com.

Photo Caption: USB Compatible Linear Power Manager + Battery Charger + Dual Sync Bucks

Summary of Features: LTC3554

- Complete Multi-Function PMIC: Linear Power Manager, Li-Ion/Polymer Battery Charger, Two Synchronous Buck Regulators, Pushbutton Control
- Ultra-Low Quiescent Current: 10uA (TYP) in Standby Mode with All Outputs On
- Thermally Enhanced, Low Profile (0.55mm) 20-Lead 3mm x 3mm UTQFN Package

POWER MANAGER & BATTERY CHARGER

- Charge Current Programmable up to 400mA from USB or 5V Wall Adapter Input, with Thermal Limiting
- Seamless Transition Between Input Power Sources: Li-Ion/Polymer Battery and USB or 5V Wall Adapter
- 240mOhm Internal Ideal Diode Provides Low Loss Power Path from Battery to Load
- Standalone Autonomous Operation
- Instant-On Operation with Discharged Battery


DC/DCs

- Two High Efficiency Synchronous Buck Regulators with Burst Mode Operation
- Buck Regulator Adjustable Output Voltage Range: 0.8V to V_{BAT}
- Buck Regulator Output Currents: 200mA, 200mA

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,

uModule[®] products, 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.

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