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## **Dual Output High Efficiency Synchronous DC/DC Controller Draws Only 50uA in Battery-Powered Systems**

MILPITAS, CA – August 13, 2009 – Linear Technology Corporation introduces the LTC3857/-1, an ultralow quiescent current, 2-phase dual output synchronous step-down DC/DC controller that draws only 50uA when one output is active and only 80uA when both outputs are enabled. With both outputs shut down, the LTC3857/-1 draws a mere 8uA. This part is ideal for automotive applications where one or both supplies remain active in standby mode. The LTC3857/-1's input supply range of 4V to 38V is wide enough to protect against automotive high voltage transients, continue operation during cold crank and cover a broad range of battery chemistries. Each output can be set from 0.8V to 24V at output currents up to 20 amps, with efficiencies as high as 95%. The LTC3857/-1 is suitable for powering GPS systems, audio systems, CD/DVD players and disk drives.

The LTC3857/-1 has powerful 1.1Ohm on-chip MOSFET gate drivers. It operates with a selectable fixed frequency between 50kHz and 900kHz, and can be synchronized to an external clock from 75kHz to 850kHz with its phased-locked loop (PLL). The user can select from continuous operation, pulse skipping and low ripple Burst Mode<sup>®</sup> operation during light loads, which safely powers pre-biased loads. The LTC3857/-1's 2-phase operation reduces input capacitance requirements. Its current mode architecture provides easy loop compensation, fast transient response and excellent line regulation. Both outputs have adjustable soft-start to control the turn-on time and feature a tight +/-1% reference voltage accuracy over the operating

temperature range of  $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$ . Output current sensing is accomplished by measuring the voltage drop across the output inductor (DCR) or by using an optional sense resistor. Current foldback limits MOSFET heat dissipation during overload conditions. There are two versions offered; the LTC3857 is the fully featured part with functions that include a clock out, phase modulation, two separate power good signals and adjustable current limit. The LTC3857-1 has one power good signal monitoring both outputs and a 50mV fixed current sense threshold voltage.

The LTC3857 is offered in a 32-lead 5mm x 5mm QFN package and the LTC3857-1 is housed in a 28-pin SSOP package. Pricing starts at \$4.47 each in 1,000-piece quantities. For more information, visit [www.linear.com](http://www.linear.com).


**Photo Caption:** Low Quiescent Current Dual Output DC/DC Controller

### **Summary of Features: LTC3857/-1**

- Low Quiescent Current of 50uA with One Output Active & 80uA with Both Outputs Active
- Draws Only 8uA in Shutdown
- Wide Input Voltage Range from 4V to 38V
- Wide Output Voltage Range from 0.8V to 24V
- Synchronous Rectification for up to 95% Efficiency
- DCR or  $R_{\text{SENSE}}$  Current Sense Options
- Selectable Burst Mode Operation, Pulse Skipping or Continuous Operation
- Safely Powers Pre-Biased Loads
- Selectable Fixed Operating Frequency from 50kHz to 900kHz
- Synchronizable Operating Frequency from 75kHz to 850kHz with PLL
- Current Mode Control for Fast Transient Response and Easy Loop Compensation
- Adjustable Soft-Start
- $\pm 1\%$  Voltage Reference Accuracy Over  $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$
- Output Overvoltage & Overcurrent Foldback Protection

## 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<sup>®</sup> 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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