



Ultralow Quiescent Current High Power Step-Down DC/DC Controller Draws only 30uA in Automotive Systems

MILPITAS, CA – December 5, 2007 – Linear Technology Corporation announces the LTC3834/-1, a synchronous step-down DC/DC controller, featuring the industry's lowest quiescent current. Drawing only 30uA in sleep mode, the LTC3834/-1 is ideal for preserving battery energy in “always-on” automotive systems or battery-powered devices where the system remains semi-active, or when a car's engine is off. When in shut down mode, the LTC3834/-1 draws a mere 4uA.

This controller is the latest addition to Linear Technology's lineup of over twenty ultra low quiescent current DC/DC switching regulator controllers for step-down, step-up, buck-boost, SEPIC and inverter topologies.

The input supply range of the LTC3834/-1 at 4V to 36V is wide enough to protect against high input voltage transients and it continues to operate during automotive cold crank. It can provide an output voltage from 0.8V up to 10V, making it ideal for the higher voltage supplies typically required for audio systems, satellite receivers, analog tuners and CD/DVD players.

This controller has an on-board LDO for bias power and a powerful on-board MOSFET driver to deliver up to 20A load current at efficiencies as high as 95%. The LTC3834/-1's constant frequency, current mode architecture provides excellent line and load regulation. The device features a very low drop-out voltage, with up to 99% duty cycle and smoothly ramps the output voltage during startup with its adjustable soft-start and tracking features. The operating frequency is adjustable from 250kHz to 530kHz, and can be synchronized to an external clock from 140kHz to 650kHz using its phased-locked loop (PLL). In addition, the user can select from continuous, pulse skipping or Burst Mode[®] operation at light loads. Output overvoltage and overcurrent (short circuit) protection are integrated and the LTC3834/-1 features $\pm 1\%$ reference voltage accuracy over an operating temperature range of -40°C to 85°C.

The LTC3834/-1 is available in two versions. The LTC3834 version has a power good output voltage monitor and an EXT_{V_{CC}} input that allows the IC to be powered from its output for maximum efficiency. It also features PolyPhase[®] operation that enables multiple ICs to be synchronized out-of-phase to minimize the required input and output capacitances. The LTC3834 is offered in a 20-lead TSSOP and 4mm x 5mm QFN packages, whereas the LTC3834-1 is housed in the smaller 16-pin SSOP and 5mm x 3mm DFN packages. Pricing for 1,000-piece quantities starts at \$3.69 each.


Photo Caption: 30uA I_Q DC/DC Step-Down Synchronous Controller

Summary of Features: LTC3834/-1

- 30uA Low Quiescent Current (No Load Output)
- 4uA Shutdown Current
- Wide Input Voltage Range from 4V to 36V
- Output Voltage Range from 0.8V to 10V
- 99% Duty Cycle
- On-Board LDO for Bias Voltage
- On-Board MOSFET Driver
- Selectable Continuous, Pulse Skipping or Burst Mode Operation
- Adjustable or Phase-Lockable Switching Frequency
- Output Overvoltage & Overcurrent 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[™] 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. For more information, visit www.linear.com.

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