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Dual Output Synchronous DC/DC Controller Draws Only 170uA in Battery-Powered Systems

MILPITAS, CA – July 21, 2009 – Linear Technology Corporation introduces the LTC3858/-1, a low quiescent current, 2-phase dual output synchronous step-down DC/DC controller that draws only 170uA with one output active and only 300uA when both outputs are active. With both outputs shut down, the LTC3858/-1 draws a mere 8uA, which is ideal for automotive and notebook PC applications. The LTC3858/-1's wide input supply range of 4V to 38V protects against automotive wide input voltage transients commonly found during load dump and cold crank conditions and to 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 efficiency as high as 95%. The LTC3858/-1 is suitable for powering high performance systems including navigation, audio, communications, CD/DVD players and disk drives.

The LTC3858/-1 has powerful 1.1Ω on-board MOSFET gate drivers and operates with an adjustable fixed frequency between 50kHz and 900kHz, or can be synchronized to an external clock from 75kHz to 850kHz using its phase-locked-loop (PLL). The user can select from continuous operation, pulse skipping and low ripple Burst Mode[®] operation during light loads. The part safely powers pre-biased loads. The LTC3858/-1's 2-phase operation reduces input capacitance requirements, while its current mode architecture provides easy loop compensation and fast transient response. Both outputs have adjustable soft-start to control the turn-on time and the output overload protection feature latches off the converter until the input voltage is recycled. The LTC3858/-1 also features a tight +/-1% reference voltage accuracy over the operating temperature range of -40°C to 85°C. The LTC3858 is the fully featured part with additional functions beyond the LTC3858-1 including a clock out, clock phase modulation, two separate power good signals and adjustable current limit.

The LTC3858 is offered in a 32-lead 5mm x 5mm QFN package, with the LTC3858-1 in 28-pin SSOP or 4mm x 5mm QFN-28 packages. Pricing starts at \$4.47 in 1,000-piece quantities. For more information, visit www.linear.com.


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

Summary of Features: LTC3858/-1

- Low Quiescent Current of 170uA with One Output Active & 300uA with Both Outputs Active
- Draws Only 8uA in Shutdown
- Wide Input Voltage Range: 4V to 38V
- Wide Output Voltage Range: 0.8V to 24V
- On-Board MOSFET Gate Drivers
- Synchronous Rectification for up to 95% Efficiency
- 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 Easy Loop Compensation & Current Sharing
- Adjustable Soft-Start
- $\pm 1\%$ Voltage Reference Accuracy Over -40°C to 85°C
- Output Over-Voltage & Over-Current Latch-Off 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.

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