



Extremely Fast Wide Input Range Step-Down DC/DC Controllers

MILPITAS, CA – March 24, 2009 - Linear Technology Corporation introduces the LTC3878 and LTC3879 high efficiency no R_{SENSE}^{TM} synchronous step-down DC/DC controllers. Their constant on-time valley current mode control and low 43ns minimum on-time allow very low duty cycles, ideal for high step-down ratios and an extremely fast transient response. Both parts feature an input voltage range from 4V to 38V. The strong on-board N-channel MOSFET driver allows the use of high power external MOSFETs to produce output currents up to 20A with an efficiency as high as 95%, making them well suited for distributed power supplies, embedded computing and other point-of-load regulation applications.

The LTC3878 has an output voltage range of 0.8V to 90% of V_{IN} , whereas the LTC3879 has an output range of 0.6V to 90% of V_{IN} . Both parts are designed to be stable with all-ceramic output capacitor designs for space constrained applications. The operating frequency is programmed with an external resistor and allows for up to 1MHz switching. No sense resistor is required, and the output current is measured by sensing the voltage drop across the synchronous MOSFET.

Selectable continuous or discontinuous mode operation provides high efficiency at light load and safely powers up into pre-biased outputs. Both parts have programmable current limit and the output current folds back during an overload condition. They have a $\pm 1\%$ accurate voltage reference over a -40°C to 85°C operating temperature range. System supervisory ICs, Microcontrollers and Digital Signal Processors all benefit from the LTC3879's output voltage tracking for flexible start-up and shutdown sequencing. Additional features include programmable soft start, a power good output and over voltage protection.

The LTC3878 is housed in a narrow 16-pin SSOP package and is pin-to-pin compatible with the LTC1778 for an easy upgrade path. The LTC3879 is offered in thermally enhanced 3mm x 3mm QFN-16 and MSOP-16E packages. Pricing starts at \$2.20 each in 1,000-piece quantities. For more information, visit www.linear.com.

Photo Caption: Extremely Fast Wide Input Range Controller**Summary of Features: LTC3878/LTC3879**

- Constant On-Time Valley Current Mode Control
- 43ns Minimum On-Time
- Extremely Fast Transient Response
- 4V to 38V Input Voltage Range
- Output Voltage Range from 0.6V to 90% of Input Voltage
- No Sense Resistor Required
- Optimized for High Step-Down Ratios
- Stable with Ceramic Output Capacitors
- Dual N-Channel MOSFET Synchronous Drive
- Output Voltage Tracking
- Power Good Output Voltage Monitor

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.

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