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## **500mA, 2.25MHz Synchronous Step-Down DC/DC Converter with a 300mA VLDO Regulator**

MILPITAS, CA – January 24, 2007 – Linear Technology announces the LTC3541, a 500mA high efficiency, 2.25 MHz, synchronous buck regulator and a 300mA VLDO™ in a single package. The LTC3541 provides two high efficiency voltage rails from a single input requiring only a single inductor. The synchronous buck regulator delivers up to 95% efficiency, whereas the VLDO output offers very low noise. The input voltage range of 2.7V to 5.5V makes the device ideal for single cell Li-Ion/Polymer or multicell alkaline/NiCad/NiMH powered applications. The LTC3541 can generate output voltages as low as 0.8V from the buck regulator and 0.4V from the VLDO, enabling it to power the latest generation of microcontrollers. The buck regulator's 2.25MHz switching frequency and the VLDO design enable the utilization of tiny, low cost externals, providing a very compact solution footprint for handheld applications.

All versions of the LTC3541 can be programmed via an external pin to have the synchronous buck power up independently or simultaneously with the VLDO. Additionally, when both the synchronous switcher and the VLDO are enabled, an automatic start-up sequencing feature brings up either the switcher or the VLDO in a specific order. The LTC3541 and LTC3541-2 have an automatic start-up feature that brings the buck output into regulation prior to enabling the VLDO regulator. Alternatively, the LTC3541-1 and LTC3541-3 bring the VLDO into regulation prior to enabling the switching regulator. The VLDO can either be operated directly from the output of the switching regulator, for maximum efficiency, or from a separate input from 0.9V to 4.1V. An automatic Burst Mode® feature reduces quiescent current in the switcher to only 85uA, thereby maximizing battery run-time. For applications that are particularly noise sensitive, the Burst Mode feature can be disabled and replaced with either a pulse skipping or continuous switching operation. Other features include a power-good output and over-temperature protection.

All versions of the LTC3541 are available from stock in a 10-Lead 3mm x 3mm DFN package. Pricing starts at \$1.95 each in 1,000-piece quantities.

**Photo Caption:** 500mA Synchronous Step-Down with 300mA VLDO

### Summary of Features: LTC3541

- High Efficiency, 500mA Buck Plus 300mA VLDO Regulator
- Independent High Efficiency, 500mA Buck (VIN: 2.7V to 5.5V)
- 300mA VLDO Regulator with 30mA Standalone Mode
- No External Schottky Diodes Required
- Buck Output Voltage Range: 0.8V to 5V
- Selectable Fixed Frequency, Pulse-Skip Operation or Burst Mode® Operation
- Current Mode Operation for Excellent Line and Load Transient Response
- Constant Frequency Operation: 2.25MHz
- Low Dropout Buck Operation: 100% Duty Cycle
- VLDO Input Voltage Range (LVIN): 0.9V to 5.5V
- VLDO Output Voltage Range VLDO: 0.4V to 4.1V
- Short-Circuit Protected
- Small, Thermally Enhanced, 10-Lead (3mm x 3mm) DFN Package

### 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. For more information, visit [www.linear.com](http://www.linear.com)

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