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## **Triple Synchronous Step-Down DC/DC Converter with Dynamically Adjustable Outputs**

MILPITAS, CA – January 29, 2009 – Linear Technology announces the LTC3569, a triple channel, high efficiency 3MHz synchronous buck regulator that delivers up 1.2A of continuous output current from one channel and 600mA from each of the other two channels. Using a constant frequency current mode architecture, the LTC3569 operates from an input voltage range of 2.5V to 5.5V, making it ideal for single-cell Li-Ion/polymer, or multicell alkaline/NiCad/NiMH applications. Each of the three output voltages are independently programmable, by lowering the feedback voltage of each channel from 800mV to 425mV (in 25mV increments) by toggling the EN pin, enabling dynamic adjustment of each channel's output voltage. Additionally, each of the 600mA regulators can act as slave power stages to each other or to the 1.2A channel to support higher currents, thereby providing additional design flexibility.

The LTC3569's switching frequency can be programmed between 1MHz and 3MHz or set at 2.25MHz, enabling the designer to optimize efficiency while avoiding critical noise-sensitive frequency bands. The combination of its 3mm x 3mm QFN-20 (or TSSOP- 16E) package and high switching frequency keeps external inductors and capacitors small, providing a very compact and thermally efficient footprint.

The LTC3569's internal synchronous switches offer efficiencies as high as 95% while Burst Mode<sup>®</sup> operation minimizes quiescent current to only 100uA (all three channels) in no-load conditions. For applications demanding the lowest possible noise, the LTC3569 can run in a pulse skipping mode to minimize output ripple. The LTC3569 offers a Power Good indicator and is synchronizable to an external clock (1.2MHz to 3MHz) other features include internal compensation, over-temperature and short circuit protection.

The LTC3569EUD is available in a 3mm x 3mm QFN-20 package, and the LTC3569EFE is offered in a 16-lead thermally enhanced TSSOP package. Pricing starts at \$3.10 and \$3.20 each respectively, in 1,000-piece quantities. Industrial grade versions, the


LTC3569IUD and LTC3569IFE, are tested and guaranteed to operate to the -40°C to 85°C operating junction temperature and are priced at \$3.65 and \$3.75 each respectively, in 1,000-piece quantities. All versions are available from stock. For more information, visit [www.linear.com](http://www.linear.com).

**Photo Caption:** Triple, 3MHz Synchronous Step-Down DC/DC Converter with Dynamically Adjustable Outputs.

### Summary of Features: LTC3569

- Three Independent Current Mode Buck DC/DC Regulators (1.2A & 2x 600mA)
- Single Pin Programmable  $V_{FB}$  Servo Voltages from 800mV Down to 425mV (in 25mV Steps)
- Pull  $V_{FB}$  High to Make Each 600mA Buck a Slave for Higher Current Operation
- Pulse Skip or Burst Mode Operation
- Programmable (1MHz to 3MHz) or Fixed 2.25MHz
- $V_{IN}$  Range 2.5V to 5.5V
- Synchronizable (1.2MHz to 3MHz)
- All Regulators Internally Compensated
- PGOOD Output Flag
- Quiescent Current <100uA (All Regulators in Burst Mode Operation)
- Zero Shutdown Current
- Overtemperature & Short-Circuit Protection
- Tiny 3mm x 3mm 20-Lead QFN & Thermally Enhanced TSSOP FE-16 Packages

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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