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## **36V Input (60V Transient), 1A Fault Tolerant Step-Down Regulator Requires Only 75uA of Quiescent Current**

MILPITAS, CA – September 3, 2009 – Linear Technology Corporation announces the LT3695, a fault tolerant 1A, 36V input step-down switching regulator. Its Burst Mode<sup>®</sup> operation keeps quiescent current under 75uA in no load standby conditions. The LT3695 operates from a 3.6V to 36V input voltage range and can safely sustain transient voltages up to 60V, making it ideal for load dump and cold-crank conditions commonly found in automotive applications. Its 1.45A internal switch can deliver up to 1A of continuous output current at voltages as low as 0.8V. The LT3695's Burst Mode operation provides ultralow quiescent current, well suited for applications such as automotive, industrial or telecom systems, which demand always-on operation and optimum battery life. Switching frequency is user programmable from 250kHz to 2.2MHz, enabling the designer to optimize efficiency while avoiding critical noise-sensitive frequency bands. The combination of its thermally enhanced MSOP-16 package and high switching frequency, which keeps external inductors and capacitors small, provides a very compact, thermally efficient footprint.

The LT3695 is designed to tolerate single fault conditions. Shorting two adjacent pins together or leaving one single pin floating does not raise  $V_{OUT}$  or cause damage to the LT3695 or any downstream electronics, enhancing system reliability.

The LT3695 utilizes a high efficiency 1.45A, 460mV switch, which can deliver efficiencies as high as 90%. Low ripple Burst Mode operation maintains high efficiency at low output currents while keeping output ripple below 15mV<sub>PK-PK</sub>. Special design techniques and a new high voltage process enable high efficiency over a wide input voltage range, and the LT3695's current mode topology enables fast transient response and excellent loop stability. Other features include external synchronization (from 300kHz to 2.2MHz), a power good flag and short circuit protection.

The LT3695EMSE pricing starts at \$3.25 each for 1,000 piece quantities. The LT3695IMSE is tested and guaranteed to operate from a -40°C to 125°C operating junction temperature and is priced at \$3.61 each in 1,000 piece quantities. Finally, the LT3695HMSE is tested and guaranteed to operate from a -40°C to 150°C operating junction temperature and is priced at \$3.86 each in 1,000 piece quantities. All versions are available from stock. For more information, visit [www.linear.com](http://www.linear.com).


**Photo Caption:** 36V, 1A (I<sub>OUT</sub>), Fault Tolerant Micropower Step-Down Switching Regulator

### Summary of Features: LT3695

- Wide Input Range: Operation from 3.6V to 36V, Overvoltage Lockout Protects Circuits Through 60V Transients
- FMEA Fault Tolerant: Output Stays at or Below Regulation Voltage
- During Adjacent Pin Short or When a Pin Is Left Floating
- 1A Output Current
- Low Ripple (< 15mV<sub>P-P</sub>) Burst Mode<sup>®</sup> Operation: I<sub>Q</sub> = 75uA for 12V<sub>IN</sub> to 3.3V<sub>OUT</sub> with No Load
- Adjustable Switching Frequency: 250kHz to 2.2MHz
- Short-Circuit Protected
- Synchronizable Between 300kHz and 2.2MHz
- Output Voltage: 0.8V to 20V
- Power Good Flag
- Small Thermally Enhanced 16-Pin MSOP 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, uModule<sup>®</sup> 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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