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## **42V, 2A/3A Peak ( $I_{OUT}$ ), Synchronous Step-Down Silent Switcher<sup>®</sup> 2 Delivers 93% Efficiency at 2MHz & Ultralow EMI/EMC Emissions**

MILPITAS, CA & NORWOOD, MA – June 29, 2017 – Analog Devices, Inc., which recently acquired Linear Technology Corporation, announces the [LT8609S](#), a 2A (3A Peak), 42V input synchronous step-down switching regulator. Its unique Silent Switcher<sup>®</sup> 2 architecture uses two internal input capacitors as well as internal BST and INTV<sub>CC</sub> capacitors to minimize the area of the hot loops. The LT8609S design dramatically reduces EMI/EMC emissions due to very well controlled switching edges, it's internal construction with an integral ground plane and the use of copper pillars in lieu of bond wires. This improved EMI/EMC performance is not sensitive to board layout, simplifying design and reducing risk even when using two-layer PC boards. The LT8609S easily pass the automotive CISPR 25, Class 5 peak EMI limits with a 2MHz switching frequency over its entire load range. Spread spectrum frequency modulation is available to lower EMI/EMC levels further.

The LT8609S's synchronous rectification delivers efficiency as high as 93% with a switching frequency of 2MHz. Its 3.0V to 42V input voltage range is ideal for automotive and industrial applications. The internal high efficiency switches deliver up to 2A of continuous output current and peak loads of 3A to voltages as low as 0.774V. The LT8609S's Burst Mode<sup>®</sup> operation offers only 2.5μA of quiescent current, well suited for applications such as automotive always-on systems, needed to extend operating battery life. The LT8609S's unique design maintains a minimum dropout voltage of only 400mV (at 1.5A) under all conditions, enabling it to excel in scenarios such as automotive cold crank. Furthermore, a fast minimum on-time of only 45ns enables 2MHz constant frequency, switching from a 16V input to a 1.5V output, optimizing efficiency while avoiding critical noise-sensitive frequency bands. The LT8609S's 16-lead, 3mm x 3mm LQFN package and high switching frequency, which keeps the external inductor and capacitors small, providing a compact, thermally efficient footprint.

The LT8609S utilizes internal top and bottom high efficiency power switches with the necessary boost diode, oscillator, control and logic circuitry integrated into a single die. Low

ripple Burst Mode operation maintains high efficiency at low output currents while keeping output ripple below 10mV<sub>P-P</sub>. Its switching frequency is programmable and synchronizable from 200kHz to 2.2MHz. Special design techniques and a new high speed process enable high efficiency over a wide input voltage range, and the LT8609S's current mode topology enables fast transient response and excellent loop stability. Other features include internal compensation, a power good flag, output soft-start/tracking and thermal protection.

The LT8609SEV is packaged in a 3mm x 3mm LQFN package. An industrial temperature version, the LT8609SIV, is tested and guaranteed to operate from a -40°C to 125°C operating junction temperature. Pricing starts at \$2.75 each for 1,000-piece quantities and both versions are available from stock. For more information, visit [www.linear.com/product/LT8609S](http://www.linear.com/product/LT8609S).

**Photo Caption:** 42V, 3A ( $I_{OUT}$ ), 2.2MHz Synchronous Step-Down with Reduced EMI/EMC Emissions Well Below CISPR 25, Class 5 Limits

### Summary of Features: LT8609S


- Silent Switcher® 2 Architecture
  - Ultralow EMI/EMC Emissions on Any PCB
  - Eliminates PCB Layout Sensitivity
  - Internal Capacitors for  $V_{IN}$ , BST,  $INTV_{CC}$  Reduce Radiated EMI
  - Spread Spectrum Frequency Modulation
- High Efficiency at High Frequency
- Up to 93% Efficiency at 2MHz
- Wide Input Voltage Range: 3.0V to 42V
- 2A Maximum Continuous, 3A Peak Output Current
- Ultralow Quiescent Current Burst Mode® Operation
  - <2.5µA  $I_Q$  Regulating 12V<sub>IN</sub> to 3.3V<sub>OUT</sub>
  - Output Ripple < 10mV<sub>P-P</sub>
- Fast Minimum Switch On-Time: 45ns
- Low Dropout Under All Conditions: 400mV at 1.5A
- Safely Tolerates Inductor Saturation in Overload
- Adjustable & Synchronizable: 200kHz to 2.2MHz
- Output Soft-Start & Tracking
- Small 16-Lead 3mm × 3mm LQFN Package

Pricing shown is for budgetary use only and may differ due to local duties, taxes, fees and exchange rates.

**Analog Devices just got more Powerful. On March 10, Analog Devices acquired Linear Technology, creating the premier high-performance analog company. More info at <http://lt.linear.com/07c>**

## About Analog Devices

Analog Devices (NASDAQ: ADI) is the leading global high-performance analog technology company dedicated to solving the toughest engineering challenges. We enable our customers to interpret the world around us by intelligently bridging the physical and digital with unmatched technologies that sense, measure, power, connect and interpret. Visit <http://www.analog.com>

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