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750mA, 42V_{IN} Synchronous Step-Down DC/DC Converter Delivers 93% Efficiency at 2MHz from a 2mm x 2mm DFN Package

MILPITAS, CA & NORWOOD, MA – June 19, 2017 – Analog Devices, Inc., which recently acquired Linear Technology Corporation, announces the [LT8607](#), a 750mA, 42V input synchronous step-down switching regulator. A unique synchronous rectification topology delivers 93% efficiency while switching at 2MHz, enabling designers to avoid critical noise-sensitive frequency bands, such as AM radio while using a very compact solution footprint. Burst Mode[®] operation keeps quiescent current under 3μA in no-load standby conditions, ideal for always-on systems. The device's 3.0V to 42V input voltage range is well suited for automotive applications that must regulate through cold-crank and stop-start scenarios with minimum input voltages as low as 3.0V and load dump transients in excess of 40V. Its internal 1.2A switches deliver up to 750mA of continuous output current. The LT8607 maintains a minimum dropout voltage of only 250mV (at 500mA) under all conditions, enabling it to excel in scenarios such as automotive cold-crank. Spread spectrum frequency modulation and special design techniques ensure low EMI operation, enabling it to meet CISPR25, Class 5 EMI limits required by many automotive and industrial applications. Furthermore, a fast minimum on-time of only 45ns enables 2MHz constant frequency switching from a 16V input to a 1.5V output. The LT8607's 8-lead thermally enhanced 2mm x 2mm DFN or 10-lead MSOP package and high switching frequency, which keeps the external inductor and capacitors small, provide a compact, thermally efficient footprint.

The LT8607 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_{P-P}. Unique design techniques and a new high speed process enable high efficiency over a wide input voltage range, and the LT8607'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 LT8607EDC is offered in a 2mm x 2mm 8-lead DFN package, whereas the LT8607EMSE is in a thermally enhanced MSOP-10 package. Industrial temperature versions, the LT8608IDC and LT8607IMSE, are tested and guaranteed to operate from a –40°C to 125°C operating junction temperature. Pricing starts at \$2.15 each in 1,000-piece quantities and all versions are available from stock. For more information, visit www.linear.com/product/LT8607.

Photo Caption: 42V, 750mA, 2.2MHz Synchronous Step-Down DC/DC Converter Operates from 3.0V to 42V

Summary of Features: LT8607


- Wide Input Voltage Range: 3.0V to 42V
- Ultralow Quiescent Current Burst Mode[®] Operation:
 - <3μA I_Q Regulating 12V_{IN} to 3.3V_{OUT}
 - Output Ripple <10mV_{P-P}
- High Efficiency 2MHz Synchronous Operation:
 - >93% Efficiency at 0.5A, 12V_{IN} to 5V_{OUT}
- 750mA Maximum Continuous Output
- Fast Minimum Switch-On Time: 45ns
- Adjustable & Synchronizable: 200kHz to 2.2MHz
- Spread Spectrum Frequency Modulation for Low EMI
- Allows Use of Small Inductors
- Low Dropout
- Peak Current Mode Operation
- Accurate 1V Enable Pin Threshold
- Internal Compensation
- Output Soft-Start & Tracking
- Tiny 2mm x 2mm 8-Lead DFN or 10-Lead MSOP 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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Press Contacts:

North America / Worldwide

John Hamburger, Director Marketing
Communications
jhamburger@linear.com
Tel: 408-432-1900 ext 2419

Doug Dickinson, Media Relations Manager
ddickinson@linear.com
Tel: 408-432-1900 ext 2233

UK & Nordic

Alan Timmins
a.timmins@ntlworld.com
Tel: +44-1-252-629937