



1.5A Synchronous Step-Down DC/DC Converter Delivers 93% Efficiency at 2MHz & Operates from 3.0V to 42V Inputs

MILPITAS, CA – April 19, 2016 – Linear Technology Corporation announces the [LT8608](#), a 1.5A, 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 2.5 μ A in no-load standby conditions making it ideal for always-on systems. Its 3.0V to 42V input voltage range makes it ideal for automotive applications which 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 2A switches can deliver up to 1.5A of continuous output current. The LT8608 maintains a minimum dropout voltage of only 200mV (@500mA) under all conditions, enabling it to excel in scenarios such as automotive cold-crank. Spread spectrum frequency modulation and special design techniques offer low EMI operation to minimize noise concerns in automotive and industrial environments. Furthermore, a fast minimum on-time of only 45ns enables 2MHz constant frequency switching from a 16V input to a 1.5V output. The LT8608's 10-lead thermally enhanced MSOP package and high switching frequency keeps external inductors and capacitors small, providing a compact, thermally efficient footprint.

The LT8608 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 LT8608'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 LT8608EMSE is packaged in thermally enhanced MSOP-10 package. An industrial temperature version, the LT8608IMSE is tested and guaranteed to operate from a -40°C to 125°C operating junction temperature. Pricing starts at \$2.25 each in 1,000-piece quantities and both versions are available from stock. For more information, visit www.linear.com/product/LT8608.

Photo Caption: 42V, 1.5A, 2.2MHz Synchronous Step-Down DC/DC Converter Operates from 3.0V to 42V


Summary of Features: LT8608

- Wide Input Voltage Range: 3.0V to 42V
- Ultralow Quiescent Current Burst Mode® Operation:
 - $<2.5\mu\text{A}$ I_{Q} Regulating 12V_{IN} to 3.3V_{OUT}
 - Output Ripple $<10\text{mV}_{\text{P-P}}$
- High Efficiency 2MHz Synchronous Operation:
 - 93% Efficiency at 0.5A, 5V_{OUT} from 12V_{IN}
- 1.5A Maximum Continuous Output Current
- 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
- Small 10-Lead MSOP Package

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

About Linear Technology

Linear Technology Corporation, a member of the S&P 500, has been designing, manufacturing and marketing a broad line of high performance analog integrated circuits for major companies worldwide for over three decades. The Company's products provide an essential bridge between our analog world and the digital electronics in communications, networking, industrial, automotive, computer, medical, instrumentation, consumer, and military and aerospace systems. Linear Technology produces power management, data conversion, signal conditioning, RF and interface ICs, μ Module[®] subsystems, and wireless sensor network products. For more information, visit www.linear.com

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