



## **42V, 3.5A ( $I_{OUT}$ ) Synchronous Step-Down Regulator with Operation to 175°C**

MILPITAS, CA – June 1, 2016 – Linear Technology Corporation announces the [LT8610AX](#), a 3.5A, 42V input capable synchronous step-down switching regulator, which operates in ambient temperatures up to 175°C. Synchronous rectification delivers efficiency as high as 95% while Burst Mode® operation keeps quiescent current under 3.5µA in no-load standby conditions. Its 3.7V to 42V input voltage range is ideal for high temperature applications such as down-hole drilling equipment with power sources ranging from 5V to 40V. The LT8610AX's electrical parameters are 100% tested at 175°C, offering a  $V_{REF}$  accuracy of 2% over the entire –40°C to 175°C temperature range. At ambient temperatures of 175°C, the LT8610AX offers over 90% efficiency (for 12V<sub>IN</sub> to 3.3V<sub>OUT</sub> conversions) over a wide load current range of 10mA to 1A, ideal for battery powered applications commonly found in down-hole drilling systems. The LT8610AX's Burst Mode operation offers ultralow quiescent current, well suited for applications requiring extended operating battery life. The LT8610AX's 16-lead thermally enhanced MSOP package provides a compact, thermally efficient footprint.

The LT8610AX utilizes internal top and bottom high efficiency power switches with the necessary boost diode, oscillator, control and logic circuitry integrated into a single die. This eliminates the need for any external Schottky diodes, which can be problematic at high temperatures. The LT8610AX's lack of thermal shutdown is ideal for high temperature environments. Low ripple Burst Mode operation maintains high efficiency at low output currents while keeping output ripple below 10mV<sub>p-p</sub>. The LT8610AX's current mode topology enables fast transient response and excellent loop stability. Specialized Cu/Ni/Au bond pad plating ensures long life in high temperature environments. Other features include internal compensation, a power good flag and output soft-start/tracking.

The LT8610AXMSE is packaged in a thermally enhanced MSOP-16 package, priced at \$125.00 each in 1,000-piece quantities and available from stock. For more information, visit [www.linear.com/product/LT8610AX](http://www.linear.com/product/LT8610AX).


**Photo Caption:** 175°C Capable 42V, 3.5A ( $I_{OUT}$ ) Synchronous Step-Down Converter**Summary of Features: LT8610AX**

- 100% Tested at 175°C
- $\pm 2\%$  Reference Accuracy Over  $-40^{\circ}\text{C}$  to  $175^{\circ}\text{C}$  Range
- Wide Input Voltage Range: 3.7V to 42V
- Ultralow Quiescent Current Burst Mode<sup>®</sup> Operation: 3.5 $\mu\text{A}$
- High Efficiency Synchronous Operation
  - 91% Efficiency at 0.5A, at  $175^{\circ}\text{C}$ , 3.3V<sub>OUT</sub> from 12V<sub>IN</sub>
  - 92% Efficiency at 0.5A, at  $175^{\circ}\text{C}$ , 5V<sub>OUT</sub> from 12V<sub>IN</sub>
- Adjustable & Synchronizable Frequency: 200kHz to 2.2MHz
- No Thermal Shutdown
- Internal Compensation
- Output Soft-Start & Tracking
- Power Good Flag
- Small Thermally Enhanced 16-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,  $\mu\text{Module}$ <sup>®</sup> subsystems, and wireless sensor network products. For more information, visit [www.linear.com](http://www.linear.com)

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