



## **80V Buck-Boost Lead Acid & Lithium Battery Charging Controller Actively Finds True Maximum Power Point in Solar Applications**

MILPITAS, CA – December 2, 2013 – Linear Technology Corporation announces the [LT8490](#), a synchronous buck-boost battery charging controller for lead acid and Lithium batteries, featuring automatic maximum power point tracking (MPPT) and temperature compensation. The device operates from input voltages above, below or equal to the regulated battery float voltage. The LT8490's full-featured battery charger offers many selectable constant-current constant-voltage (CC-CV) charging profiles, making it ideal for charging a variety of Lithium or lead acid chemistry types, including sealed lead acid, gel cells and flooded cells. All charge termination algorithms are provided onboard, eliminating the need for software or firmware and thus reducing design cycle time.

The LT8490 operates over a wide 6V to 80V input voltage range and can produce a 1.3V to 80V battery float voltage output using a single inductor with 4-switch synchronous rectification. The device is capable of charging currents as high as 10A depending on the choice of external FETs. The LT8490's MPPT circuit enables a sweep of the full operating range of a solar panel, finding the true maximum power point, even in the presence of local maxima points caused by partial shading of the panel. Once the true maximum power point is found, the LT8490 will operate at that point while using a dithering technique to quickly track changes in the local maximum power point. With this methodology, the LT8490 fully utilizes the power generated by a solar panel even in non ideal operating environments.

The LT8490 performs automatic temperature compensation of the battery charge voltage by sensing an external thermistor on the battery. The STATUS and FAULT pins can be used to drive LED indicator lamps. Charging current limits can be adjusted by changing as few as 1 or 2 resistors, and a charging time scale can be selected with the appropriate resistor divider. Other features of the device include: input and charge current limit pins, a 3.3V regulated LDO output, status pins and a synchronizable fixed switching frequency.

The LT8490 is available in a low profile (0.75mm) 64-pin 7mm x 11mm QFN package. The device is offered in both E and I grades which are guaranteed for operation from -40°C to 125°C. 1,000-piece pricing for the E grade starts at \$10.35 each. For more information, visit [www.linear.com/product/LT8490](http://www.linear.com/product/LT8490).

**Photo Caption:** 80V Solar Lead Acid & Lithium Battery Charger with MPPT

### **Summary of Features: LT8490**

- $V_{IN}$  Range 6V to 80V
- $V_{BAT}$  Range 1.3V to 80V
- Single Inductor Allows  $V_{IN}$  Above, Below, or Equal to  $V_{BAT}$
- Automatic Sweeps to Find True MPPT Point
- Support of Many Types of Lead Acid & Lithium Battery Types
- LED Drivers for Status Indication
- Battery Charging Algorithms Built-in
- Automatic Float Voltage Temperature Compensation
- Input & Output Current Monitor Pins
- Synchronizable Fixed Frequency: 100kHz to 400kHz
- 64-Pin 7mm x 11mm x 0.75mm QFN Package

## 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 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,  $\mu$ Module<sup>®</sup> subsystems, and wireless sensor network products. For more information, visit [www.linear.com](http://www.linear.com)

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