



0V to 100V, 1% Accurate Energy Monitor Has 12-Bit Output

MILPITAS, CA – September 23, 2014 – Linear Technology Corporation introduces the [LTC2946](#), a high or low side charge, power and energy monitor for DC supply rails in the 0V to 100V range. An integrated $\pm 0.4\%$ accurate, 12-bit ADC and external precision time base (crystal or clock) enables measurement accuracy better than $\pm 0.6\%$ for current and charge, and $\pm 1\%$ for power and energy. A $\pm 5\%$ accurate internal time base substitutes in the absence of an external one. All digital readings, including minimums and maximums of voltage, current and power, are stored in registers accessible by an I²C/SMBus interface. An alert output signals when measurements exceed configurable warning thresholds, relieving the host of burdensome polling for data. The LTC2946 provides access to all the necessary parameters to accurately assess and manage board level energy consumption. In addition its wide operating range makes it ideal for monitoring board energy consumption in blade servers, telecom, solar and industrial equipment, and advanced mezzanine cards (AMC).

The LTC2946 can be powered from 2.7V to 5V directly, from 4V to 100V through an internal linear regulator, or beyond 100V through an internal shunt regulator. Two of the three general purpose input/output (GPIO) pins are configurable as an accumulator enable and alert output. The internal ADC operates in either a continuous scan mode or a snapshot mode. In shutdown mode, the device current consumption drops from 900 μ A to 15 μ A.

The LTC2946 is available in two options: the LTC2946 I²C interface has separate SDA input and output pins for standard or opto-isolated I²C, whereas the LTC2946-1 has an inverted

SDA output for inverting opto-isolator configurations. Specified over the commercial, industrial, automotive and military temperature ranges, the LTC2946 is offered in 16-pin MSOP and 4mm x 3mm DFN packages. 1,000-piece pricing starts at \$3.95 each. Device samples and evaluation circuit boards are available online or from your local Linear Technology sales office. For more information, visit www.linear.com/products/power_monitors

Photo Caption: 0V to 100V Energy, Power, Charge, Current & Voltage Monitor with I²C/SMBus


Summary of Features: LTC2946

- Monitors Supply Voltage, Current, Charge, Power & Energy Use
- 0V to 100V Monitoring Range, >100V with Internal Shunt Regulator
- 12-Bit ADC with Scan & Snapshot Modes
- I²C/SMBus Digital Interface
- Guaranteed Accuracy:
 - o ±0.4% for 12-Bit Voltage
 - o ±0.6% for 12-Bit Current & 32-Bit Charge
 - o ±1% for 24-Bit Power & 32-Bit Energy
- Internal ±5%, External or Crystal Time Bases
- Minimum & Maximum Value Recorder
- Bias Supply Range: 4V to 100V, or 2.7V to 5.9V
- Alerts on Exceeding Warning Thresholds
- Split SDA Eases Opto-Isolation
- Shutdown Mode with I_Q < 40μA
- 16-Pin MSOP & 4mm x 3mm DFN Packages

The USA list pricing shown is for budgetary use only. International prices 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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