



Nanopower Buck-Boost DC/DC with Energy Harvesting Battery Life Extender

MILPITAS, CA – August 5, 2013 – Linear Technology announces the [LTC3330](#), a complete regulating energy harvesting solution that delivers up to 50mA of continuous output current to extend battery life when harvestable energy is available. The LTC3330 requires no supply current from the battery when providing regulated power to the load from harvested energy and only 750nA operating when powered from the battery under no-load conditions. The LTC3330 integrates a high voltage energy harvesting power supply, plus a synchronous buck-boost DC/DC converter powered by a primary cell battery to create a single non-interruptible output for energy harvesting applications such as those in wireless sensor networks. The energy harvesting power supply, consisting of a full-wave bridge rectifier accommodating AC or DC inputs and a high efficiency buck converter, harvests energy from piezoelectric (AC), solar (DC) or magnetic (AC) sources. The primary cell input powers a buck-boost converter that operates from 1.8V to 5.5V at its input when harvested energy is not available to regulate the output whether the input is above, below or equal to the output. The LTC3330 automatically transitions to the battery when the harvesting source is no longer available.

The LTC3330's energy harvesting inputs operate from a voltage range of 3V to 19V, AC or DC, making it ideal for a wide array of piezoelectric, solar or magnetic energy sources. Its input undervoltage lockout threshold settings are programmable between 3V and 18V, enabling the application to operate the energy harvesting source at its peak power transfer point. Other features include programmable DC/DC and LDO output voltages, buck-boost peak current limits, supercapacitor charger/balancer and an input protective shunt (up to 25mA at $V_{IN} \geq 20V$).

The LTC3330EUH is available in a 5mm x 5mm QFN package. Pricing starts at \$3.55 each for 1,000-piece quantities. An industrial temperature grade version, the LTC3330IUH, is also available. Pricing starts at \$3.90 each for 1,000-piece quantities. All versions are available from stock. For more information, visit www.linear.com/product/LTC3330


Photo Caption: Energy Harvesting DC/DC Battery Life Extender

Summary of Features: LTC3330

- Dual Input, Single Output DC/DCs with Input Prioritizer
 - Energy Harvesting Inputs: 3.0V to 19V Buck DC/DC
 - Primary Cell Input: 1.8V to 5.5V Buck-Boost DC/DC
- Zero Battery I_Q when Powering Load from Harvested Energy
- Ultralow Quiescent Current: 750nA at No-Load when Powered from Battery
- Low Noise LDO Post Regulator
- Integrated Supercapacitor Balancer
- Up to 50mA of Output Current
- Programmable DC/DC & LDO Output Voltages, Buck UVLO & Buck-Boost Peak Input Current
- Integrated Low Loss Full-Wave Bridge Rectifier
- Input Protective Shunt – Up to 25mA at $V_{IN} \geq 20V$
- 5mm × 5mm QFN-32 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 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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