



Tiny Wireless NiMH Charger-Receiver Optimized for Space-Constrained Hearing Aid Applications

MILPITAS, CA – December 16, 2015 – Linear Technology Corporation introduces the [LTC4123](#) to further expand its offerings in wireless battery charging. The LTC4123 combines a 30mW wireless receiver with a constant-current/constant-voltage linear charger for NiMH batteries, such as Varta's power one ACCU plus series. An external resonant LC tank connected to the LTC4123 enables the IC to receive power wirelessly from an alternating magnetic field generated by a transmit coil. Integrated power management circuitry converts the coupled AC current into the DC current required to charge the battery. Wireless charging with the LTC4123 allows for a completely sealed product and eliminates the need to constantly replace primary batteries. Zn-Air (Zinc-Air) detection allows applications to work interchangeably with both rechargeable NiMH batteries and primary Zn-Air batteries with the same application circuit. Both battery types can directly power a hearing aid ASIC without the need for additional voltage conversion. By contrast, a 3.7V Li-ion battery requires a step-down regulator in addition to the LTC4123's functionality to power the ASIC.

The LTC4123 rectifies AC power from the receive coil, and can also accept a 2.2V to 5V input to power a full-featured constant-current/constant-voltage battery charger. Features of the charger include programmable charge current up to 25mA, a single-cell 1.5V battery charge voltage with $\pm 0.5\%$ accuracy, charge status indication and an onboard safety charge termination timer. A temperature-compensated charge voltage protects the NiMH battery and prevents overcharging. The LTC4123 prevents charging when batteries are inserted with reverse polarity and pauses charging if the temperature becomes too hot or too cold.

The LTC4123 is housed in a highly compact, low profile (0.75mm) 6-pin 2mm x 2mm DFN package with backside metal pad for excellent thermal performance. The device is guaranteed for operation from -20°C to 85°C in E grade, and 1,000-piece pricing starts at \$2.65 each. For more information, visit www.linear.com/product/LTC4123.

Photo Caption: Low Power Wireless NiMH Charger for Hearing Aids

Summary of Features: LTC4123

- Complete Low Power Wireless NiMH Charger
- Low Minimum Input Voltage: 2.2V
- 1.5V, 25mA Linear Single-Cell NiMH Charger
- Temperature Compensated Charge Voltage
- Integrated Rectifier with Overvoltage Limit
- Zinc-Air Battery Detection
- Reverse Polarity Protection
- Thermally Enhanced 6-Lead 2mm × 2mm DFN 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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