



Tiny Sub-1 μ A I_Q Shunt Battery System Charges & Protects Li-Ion/Polymer Batteries

MILPITAS, CA – February 16, 2010 – Linear Technology Corporation introduces the LTC4070, an easy-to-use, tiny shunt battery charger system IC for Li-Ion/Polymer batteries. The LTC4070, with its 450nA operating current, charges and protects batteries from previously unusable very low current, intermittent or continuous charging sources. The LTC4070's charge current may be boosted from 50mA up to 500mA with the addition of an external PMOS shunt device. An internal thermal battery conditioner reduces the float voltage to protect Li-Ion/Polymer cells at elevated battery temperatures. Multiple-cell battery stacks can be charged and balanced by configuring several LTC4070s in series. Housed in a low profile (0.75mm) 8-lead 2mm x 3mm DFN package, the LTC4070 provides a complete and ultra-compact charger solution with only a single external resistor required in series with the input voltage. The device's feature set is well suited for continuous and intermittent, lower power charging source applications, including Lithium-Ion/Polymer battery backup, thin film batteries, coin cell batteries, memory backup, solar-powered systems with backup, embedded automotive and energy scavenging/harvesting.

With pin-selectable settings of 4.0V, 4.1V, or 4.2V, the LTC4070's 1% accurate battery float voltage allows the user to optimize the balance between battery capacity and lifetime. Independent low battery and high battery supervisory status outputs indicate a discharged or fully charged battery. In conjunction with an external PFET in series with the load, the low battery status output enables a latch-off function that automatically disconnects the system load from the battery to protect the battery from deep discharge.

In addition to its compact 2mm x 3mm 8-lead DFN package, the LTC4070 is also offered in an 8-lead MSOP package. The devices are rated for operation from -40°C to 125°C. Pricing starts at \$2.06 and \$2.31 each in 1,000-piece quantities for both packages, in E and I grades, respectively. For more information, visit www.linear.com.


Photo Caption: Shunt Battery Charger System

Summary of Features: LTC4070

- Low Operating Current: 450nA
- 1% Float Voltage Accuracy Over Full Temperature & Shunt Current Range
- 50mA Maximum Internal Shunt Current (500mA with External PFET)
- Pin-Selectable Float Voltage Options: 4.0V, 4.1V, 4.2V
- Ultralow Power NTC Float Voltage Conditioning for Li-Ion/Polymer Protection
- Suitable for Intermittent, Continuous & Very Low Power Charging Sources
- Low & High Battery Status Outputs
- Simple Low Voltage Load Disconnect Application
- Thermally Enhanced, Low Profile 8-Lead DFN (2mm x 3mm x 0.75mm) & MSOP Packages

About Linear Technology

Linear Technology Corporation, a manufacturer of high performance linear integrated circuits, was founded in 1981, became a public company in 1986 and joined the S&P 500 index of major public companies in 2000. Linear Technology products include high performance amplifiers, comparators, voltage references, monolithic filters, linear regulators, DC-DC converters, battery chargers, data converters, communications interface circuits, RF signal conditioning circuits, uModule[®] products, and many other analog functions. Applications for Linear Technology's high performance circuits include telecommunications, cellular telephones, networking products such as optical switches, notebook and desktop computers, computer peripherals, video/multimedia, industrial instrumentation, security monitoring devices, high-end consumer products such as digital cameras and MP3 players, complex medical devices, automotive electronics, factory automation, process control, and military and space systems.

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