

NEWS RELEASE

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Summit SMB139 Digitally Programmable Linear Li-Ion Charger IC Provides Smallest Solution Size and Unparalleled Design Flexibility

***I²C non-volatile programmability allows for design flexibility while advanced
battery protection features meet industry's strictest safety standards.***

San Jose, Calif. – June 12, 2007 - Summit Microelectronics has further expanded its family of Programmable Battery Charger integrated circuits (ICs) with the introduction of the SMB139 single-cell, Li-Ion and Li-Polymer linear battery charger. The device's battery charging profile can be configured to adapt easily to new system designs and battery types. Furthermore, the SMB139's tiny size makes it ideal for portable applications that require the smallest possible charging footprint. The SMB139 integrates many protection features, thereby ensuring the highest level of safety and eliminating the need for additional external components.

The SMB139's tiny 1.3mm x 2.1mm chip-scale package delivers a charging solution that occupies significantly smaller board space than traditional implementations. The flexible programmability with the I²C interface allows convenient parametric and functional control and provides unlimited design flexibility, both in-system and during the development stage. Unlike other linear chargers offered in packages with a limited number of pins, the SMB139's chip-scale package allows the integration of a higher number of features, including critical charging protection functionality. Overall, the SMB139 enables new standards for performance, mobility and safety in portable consumer electronics.

“Reducing footprint requirements while maintaining high performance and design flexibility allows the SMB139 to set new standards for charging small- and medium- capacity Li-Ion and Li-Polymer batteries,” stated George Paparrizos, Summit marketing director.

“The SMB139 offers the highest number of advanced safety functions, further reducing the number of components and the board space required to safely charge the new generation of portable electronic devices.”

Features

The SMB139 comprises a highly integrated, 210mA linear charging solution that utilizes a fully programmable algorithm for single-cell Li-Ion and Li-Polymer cells. All charging parameters - pre-charge/fast-charge/charge termination current, cell float/pre-charge voltage, battery temperature/timer safety limits - are configurable via the I²C/SMBus interface, enabling a wide variety of algorithms without hardware changes. Real-time adjustment of the charging profile also minimizes charging time and maximizes safety.

The SMB139 can be programmed either dynamically (real-time using volatile registers), by a microcontroller and software via the I2C/SMBus port, or statically (pre-programmed using non-volatile registers). If the static programming mode is used there is no need for software to access the I²C/SMBus interface and the SMB139 functions independently as a customized, but parametrically fixed solution. Static configurability allows the same product to be used in different system designs and/or with different battery types and technologies, resulting in significantly lower qualification/inventory costs and sourcing risks.

The SMB139 operates from a +4.35V to +6.5V input making it ideally suited for either USB or AC adapter power sources. However, for applications where the AC adapter may be poorly regulated and/or an aftermarket or counterfeit product is used, the SMB139 will tolerate +10V inputs without damage. Ensuring long battery life when not connected to a DC power source, the reverse leakage current is less than 2microA. In addition, when the I2C/SMBus port is not utilized for charge control/monitoring, the SMB139 provides a CHGSET control pin for real-time, two-level charge current configuration, as well as a STATUS output to drive an LED for indicating charge status and fault conditions.

Enhancing system reliability, the SMB139 integrates input/output over-voltage, short-circuit and thermal protection circuits. A variety of fault and status registers are also available for real-time monitoring charging and system operation. The SMB139 also protects the battery

pack with a programmable battery temperature monitor and charge safety timers to prevent dangerous charging conditions. Furthermore, to protect deeply discharged cells, the SMB139 has a 3mA “trickle charge” mode below 2.0V. This mode allows safe, controlled recovery of the deeply discharged cell until it can accept normal charging currents. All these protection features allow designs to meet strict industry safety standards without the need for additional external components and cost.

Applications

The SMB139 is well suited for a wide range of space-constrained handheld consumer devices such as Bluetooth headsets, stereo headsets, flash-based portable music players, noise-cancellation headphones, robotic toys and wrist watches/PDAs. In particular, it is the ideal battery charging solution for applications that utilize small-capacity Li+ batteries and/or use a single USB connector to provide both data and power.

Pricing and Availability

The SMB139 has an operating temperature range of -30 degrees C to +85 degrees C and is available in the 1.3mm x 2.1mm 15-ball chip-scale (CSP™) package that is lead-free and RoHS-standards compliant. Available now in production quantities, the device is priced at \$0.85 each in quantities of 10,000 units.

Design Software and Programmer for Prototype Development

To speed user product development, Summit offers customers the SMB139EV companion evaluation board and a graphical user interface (GUI) software so designers can quickly see the features and benefits and design a prototype battery charger with the SMB139. This is a complete development tool that lets designers easily manipulate the characteristics of their systems. The SMB139EV design kit includes menu-driven Microsoft Windows (R) GUI software to automate programming tasks and also includes all necessary hardware to interface to the parallel or USB port of a laptop or PC.

Once a user completes design and prototyping, the SMB139EV automatically generates a HEX data file that can be transmitted to Summit for review and approval. Summit then assigns a unique customer identification code to the HEX file and programs the customer's production devices prior to final electrical test operations. This ensures that the device will operate properly in the end application. The design kit software can be downloaded today from Summit's website (www.summitmicro.com).

About Summit Microelectronics

Summit Microelectronics is the leader in flexible, highly integrated power management solutions combining precision power regulation with sophisticated digital control in a single chip. The Company's devices are found in a variety of consumer, communications and computing applications.

Summit's unique programmable, non-volatile mixed-signal IC technology combined with a convenient GUI development environment allows for unparalleled functional and parametric flexibility in power supply design. This flexibility applied to common problems such as dynamic voltage/current control and intelligent battery charging, allows for significant system performance improvement while realizing drastic reductions in design effort.

Digital programmability enables high integration and system flexibility in a single chip - impossible with conventional "hard-wired" analog power ICs. Additionally, this integration reduces the bill-of-materials yielding the lowest total system cost and size. Summit solutions address the biggest challenges facing OEM developers today: increasing system functionality, performance and complexity accompanied by shrinking development time cycles.

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The URL for this product is

http://www.summitmicro.com/prod_select/summary/SMB139/SMB139.htm

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