

NEWS RELEASE

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Summit SMB138: 1.25A Programmable USB/AC Li-Ion Charger Cuts Charging Time, Heat and Size by 50%-80%, Supports USB On-The-Go

Automatic TurboCharge™ with input current limiting meets USB 2.0 specification while I²C interface and non-volatile programmability offer design flexibility

San Jose, Calif. – May 23, 2007 – Summit Microelectronics has expanded its family of Programmable Battery Charger integrated circuits (ICs) with the introduction of the SMB138 targeted at the latest portable consumer electronics applications. Specially designed to optimize battery charging from any power source, including the popular Universal Serial Bus (USB) and other current-limited sources, the SMB138 is the most complete and flexible solution for the latest mobile devices.

The SMB138 delivers significant value at system level by dramatically reducing charge time and power dissipation – improving end user convenience and perception. In addition, the SMB138's built-in flexibility to adjust to any input power source (100mA/500mA USB or 900mA AC/DC) allows the use of a low-profile, single mini/micro USB data/power connector, thereby reducing size, complexity and cost. Another feature that adds value for the end user is USB On-the-Go support that enables one USB device to supply power to and communicate with another USB device directly – without the presence of a PC. The SMB138 supplies up to 500mA at +5V, providing full compliance with the latest USB-OTG specification. Finally, the flexible programmability with I²C interface allows convenient parametric control and enables compliance with the USB 2.0 and Chinese USB Battery Charging Specifications.

“Packed with useful features such as second generation TurboCharge™, USB-OTG support and Summit’s programmable flexibility, the SMB138 creates a new performance standard in single-cell Li-Ion battery charger ICs. Ultra-high integration, eliminating all but a few external components, and CSP packaging yields the smallest solution size possible, making the SMB138 the overall best choice for today’s mobile designs.” stated George Paparrizos, Summit’s Director of Marketing.

Features

The SMB138 is the most integrated single-cell Li-Ion charger in the industry with a high performance 3MHz switch-mode converter at its core. The charger output rating is up to 1.25A with over 90% typical efficiency, maximizing charge current while minimizing power dissipation – up to 50% to 80% improvement over typical linear charging solutions. Second generation TurboCharge™ technology automatically boosts output current while precisely limiting input current for USB 2.0 compliance – up to 750mA charger output from a 500mA USB 2.0 port or 1.25A from a 900mA AC/DC adapter.

USB functionality is enhanced with proprietary technology that supports USB On-the-Go. The SMB138’s step-down converter that normally runs in “forward mode” to charge the battery can also run in reverse to boost the battery voltage and output the voltage back to the input. Unlike competing solutions no additional external boost circuit components are required. The USB-OTG output is rated at +5V at 500mA and is compliant with the USB On-the-Go specification.

I²C digital interface and volatile/non-volatile programmability allow for a high degree of flexibility in charger parameters. The SMB138 can be “custom” programmed in manufacturing and used “standalone” without the need for system interaction. Alternatively, with the I²C interface, virtually all charging parameters can be adjusted “on-the-fly” to optimize battery charging with software depending on system needs. Parameters that are programmable include: input and output current limiting, pre-charge/fast-charge/termination current settings, float voltage, pre-charge voltage threshold and OTG current limit.

The SMB138 operates with an input range from +3.5V to +9V input and tolerates input over-voltage up to +16V (non-operating). The operating temperature range is –30C to +85C.

Applications

The SMB138 is ideal for applications in a wide range of devices such as mobile phones, smartphones/PDAs, portable media/MP3 players (PMP), portable GPS navigation and digital cameras/camcorders (DSC/DCC). The features and integration of the SMB138 make it especially suited for devices that include a USB interface because it allows a tiny mini/micro USB connector to be the primary data and power/charging interface.

Pricing and Availability

The SMB138 is offered in a 2.1mm x 3.15mm 19-ball or 20-ball chip-scale (CSP) package and a 5mm X 5mm, 32-pad QFN package. Both packages are lead-free and RoHS-standard compliant. Available now in production quantities the SMB138 is priced at \$1.69 each for the CSP-19/20 or QFN-32 in quantities of 10,000 units.

Design Software and Programmer for Prototype Development

To speed user product development, Summit offers customers the SMB138EV companion evaluation board and a graphical user interface (GUI) software so designers can quickly see the features and benefits and design a prototype power supply with the SMB138. This is a complete development tool that lets designers easily manipulate the characteristics of their systems. The SMB138EV design kit includes menu-driven Microsoft Windows (R) GUI software to automate programming tasks and also includes all necessary hardware to interface to the USB port of a laptop or PC.

Once a user completes design and prototyping, the SMB138EV 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 URLs for these products are

http://www.summitmicro.com/prod_select/summary/SMB138/SMB138.htm

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