



## NEWS RELEASE

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### **Summit Switch-Mode Battery Chargers with Programmable JEITA Support for Highest System Safety are Industry Firsts**

*High-efficiency operation delivers shortest charging time, minimizes power dissipation and enables slim industrial designs*

**San Jose, Calif. – May 3, 2010 – Summit Microelectronics** has expanded its third-generation programmable battery charger integrated circuit (IC) family for single-cell Li-Ion, Li-Polymer, and Li-FePO4 powered systems. The SMB328A and SMB328B integrate the largest feature set in the industry, including compatibility with all relevant industry standards: USB 2.0 Specification, USB On-The-Go Supplement, JEITA Safety Guidelines, IEEE1725 Standard, Chinese USB Charging Specification, and others. Both products incorporate innovative functionality that allows automatic matching between the AC/DC adaptor's current capability and the portable device's charging requirements. High-efficiency operation allows for higher, continuous charging current levels, thereby ensuring battery charging even during high system load conditions. Like all Summit's solutions, digital, non-volatile programmability provides design and system flexibility at no additional cost.

#### **Features**

The SMB328A and SMB328B enable companies to create slim industrial designs with significantly faster charging times; two valuable differentiating factors for smart phones and other portable consumer products.

The devices are based on a 3MHz, switch-mode architecture, with minimal external components, which results in very efficient power delivery and extremely compact solution size. The SMB328A allows for I2C control of parametric and functional performance, while the SMB328B operates in a GPIO-controlled configuration. Summit's proprietary TurboCharge™ patent-pending technology is incorporated in both devices, enabling highest charging current levels (up to 750mA from 500mA USB source) from current-limited input power sources.

Like all products in Summit's 3<sup>rd</sup> generation family, the products provide the means to accomplish true, universal USB charging and to meet the various USB industry standards, without the need for additional hardware and software support. Automatic Input Current Limit (patent pending) detects the maximum current capability of the AC/DC adapter (can be as low as 300mA for Chinese chargers to more than 1.5A per USB charging specification) and automatically programs the device's input current limit accordingly. This unique functionality addresses system issues associated with the fact that "USB" AC/DC adapters can vary widely in current rating, while eliminating the need for additional software support or external components. The resulting improved user experience translates into fewer service calls, fewer merchandise returns and increased subscriber revenue for wireless carriers. Both products also support poorly regulated wall adapters by providing built-in input over-voltage protection and "pre-loading bias" to aid voltage regulation of such adapters.

The SMB328A and SMB328B incorporate the industry's widest range of safety features for the battery and the system. Both products adhere to the Japan Electronics and Information Technology Association (JEITA) safety guidelines, by preventing high charging voltage levels during certain low and high temperature ranges. Going a step further, battery pack temperature limits and charging voltage compensation levels are programmable, resulting in optimized operation for a given battery. In addition, the SMB328A and SMB328B support IEEE1725 by including dual redundant protection for input/output current and voltage, chip and battery thermal protection, hardware and software safety timers, battery missing detection and a variety of status and fault registers.

"Summit's commitment to enable designs to adhere to the latest efficiency and safety industry standards and to utilize the latest technologies continues with the introduction of

the SMB328A and SMB328B battery charging ICs. Both products support LiFePO<sub>4</sub> battery technologies, provide energy-efficient battery charging and incorporate unparalleled design support for exceeding the JEITA safety guidelines,” stated George Paparrizos, Summit Marketing Director. “Competing JEITA implementations typically provide fixed temperature limits and charging voltage adjustment levels, thereby creating a one-size-fits-all solution which does not optimize safety and performance.”

The SMB328A and SMB328B also incorporate an LDO that can provide instant-on power from the input source to critical system components, allowing them to wake-up and perform system functions, even with a deeply discharged (dead), or missing battery. Both products also allow the host to directly measure charge current in real-time, thereby allowing the system to recognize the operating mode it is in, and making necessary adjustments for increasing battery life, monitoring for safety and communicating information to the user. The SMB328A and SMB328B are also capable of supporting USB On-The-Go, by providing 5V and up to 500mA to VBUS, thereby also exceeding the requirements set by the USB OTG Supplemental Specification.

### **Applications**

The SMB328A and SMB328B are ideal for a wide range of portable devices such as mobile phones, smartphones, portable media/MP3 players (PMP), portable GPS navigation equipment, portable game consoles, and digital cameras/camcorders (DSC/DCC). The features and integration of the SMB328A and SMB328B make them especially suited for devices that include a USB interface because they allow a tiny, low-cost industry-standard micro USB connector to be the primary data and power/charging interface.

The SMB328A and SMB328B operate with an input range from +3.5V to +6.2V input and safely withstand continuous input over-voltage up to +20V (non-operating), while protecting downstream circuitry. Both products are offered in a tiny 2.2mm x 2.0mm, 20-ball, lead-free chip-scale (CSP) package with an operating temperature range of –30C to +85C.

### **Pricing and Availability**

Available now in production quantities, the SMB328A is priced at \$1.28 and the SMB328B is priced at \$1.23 each in quantities of 10,000 units.

## **Design Software and Programmer for Prototype Development**

To speed user product development, Summit offers customers the SMB328EV companion evaluation board and a graphical user interface (GUI) software (SMB328A only) so designers can quickly see the features and benefits and design a prototype battery charging solution with the SMB328A and SMB328B. This is a complete development tool that lets designers easily manipulate the characteristics of their systems. The SMB328EV 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 SMB328EV 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 URL for the SMB328A product is**

**[http://www.summitmicro.com/prod\\_select/summary/SMB328A/SMB328A.htm](http://www.summitmicro.com/prod_select/summary/SMB328A/SMB328A.htm)**

**The URL for the SMB328B product is**

**[http://www.summitmicro.com/prod\\_select/summary/SMB328B/SMB328B.htm](http://www.summitmicro.com/prod_select/summary/SMB328B/SMB328B.htm)**

**The URL for this news release is**

**[http://www.summitmicro.com/comp\\_info/press/10-0503](http://www.summitmicro.com/comp_info/press/10-0503)**

**The URL for the SMB328A and SMB328B product photo is**

**[http://www.summitmicro.com/prod\\_select/summary/SMB328A/SMB328.jpg](http://www.summitmicro.com/prod_select/summary/SMB328A/SMB328.jpg)**

**The URL for the SMB328A and SMB328B product application block diagram is**

**[http://www.summitmicro.com/prod\\_select/summary/SMB328A/SMB328\\_block.jpg](http://www.summitmicro.com/prod_select/summary/SMB328A/SMB328_block.jpg)**

**The URL for the product fact sheet is**

**[http://www.summitmicro.com/prod\\_select/summary/SMB328A/SMB328FactSheet.pdf](http://www.summitmicro.com/prod_select/summary/SMB328A/SMB328FactSheet.pdf)**

## **About Summit Microelectronics: “Programmable Power for a Digital World™”**

Summit Microelectronics is the leader in flexible, mixed-signal integrated power management solutions, for the consumer, communications and computing markets, combining high-performance analog power with powerful digital control in a single chip.

This integration and flexibility combined with a simple GUI-based development tool and non-volatile configuration yields the lowest total BoM cost while reducing system design time and effort. For more information visit [www.summitmicro.com](http://www.summitmicro.com).

**“MobileGreen Technologies™”**

Summit Microelectronics actively supports industry efforts towards creating a greener planet. The Company’s MobileGreen™ technologies significantly reduce the energy consumption and waste material footprint in our customers’ products. For more information visit [www.summitmicro.com/MobileGreen](http://www.summitmicro.com/MobileGreen).

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