

NEWS RELEASE

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Summit Introduces 10A Synchronous DC/DC Controller with Digital Power Control in Tiny Packages

High-power output and integrated digital power control functions address increasingly complex and challenging power management requirements

Sunnyvale, Calif. – September 23, 2009 – Summit Microelectronics has expanded its family of Programmable Power Manager (PPM) integrated circuits (ICs) with the SMB211 single-channel, synchronous DC/DC controller. The SMB211 continues Summit’s innovative approach to power supply design by combining flexibility, features and performance with ease-of-use. With a serial digital interface, the SMB211 can be easily configured during development (on-board, non-volatile memory) and re-programmed in system by host software. The result is a high-performance digitally controlled power supply design that is easily customizable without tedious hardware design cycles or complex microcontroller-style software coding.

The SMB211 combines high-performance power conversion and digital control in a single, space-saving device. The integration of advanced power control functions eliminates external components and cost, improves functionality and performance, and minimizes development time. Summit’s non-volatile configurable technology enables the implementation of flexible “platform solutions” that can be easily modified for different designs without any hardware changes.

“Summit is expanding its portfolio of intelligent DC/DC controllers to address the industry’s increasing demands for high performance, ease-of-use, and reduced Bill of Materials, size and cost. The SMB211’s efficient operation combined with its sophisticated power control enable complex system designs to meet Energy Star™ and other energy-saving standards,” stated George Paparrizos, Summit marketing director.

Features

The SMB211 integrates a synchronous DC-DC step-down (buck) converter with a useful set of digital control functions. The device’s high current drive capability allows over 10A of output, while using a wide variety of industry-standard MOSFETs. The SMB211 can operate at four different, programmable frequencies, allowing optimization of efficiency and component size. Soft-start and power-on delays are also selectable to address various system requirements, especially in multi-power supply applications.

The SMB211’s output voltage accuracy is better than +/- 1 percent and supports dynamic voltage scaling as well as margin high/low control via the serial digital interface. The output voltage can be digitally set from +0.5V to +2.5V in 10mV steps, or from +1.0V to +5.0V in 20mV steps. The output voltage is monitored for both over- and under-voltage conditions, thereby increasing system reliability. A configurable logic output that can be used as a RESET, POWER GOOD or SMBAlert output signal, is also available for notifying the system of out-of-regulation conditions. The device can operate in forced-PWM for noise-sensitive applications, as well as in automatic PWM/PFM mode for maximum light-load efficiency.

The SMB211 incorporates a pulse-by-pulse current limit by monitoring the voltage drop across the upper N-FET. Various current limit thresholds as well as several over-current response modes are available for maximum design flexibility. An Enable input allows the SMB211 to enter a low-power shutdown mode (less than 10uA). A standby mode, via an I2C command, is also available for reducing current consumption while keeping the serial interface active. Additionally, the SMB211 provides complete power system diagnostics by digitally flagging a variety of fault conditions (output OVLO, output UVLO, IC temperature, over-current, input UVLO and others).

The SMB211 operates directly from an input voltage of +4.5V to +13.5V, however the external FETs can be powered from a lower voltage supply, as low as 3.3V, if necessary. The rated operating temperature range is -30C to +85C. Programming is achieved via an industry-standard serial interface and configuration data is safely stored in non-volatile OTP memory.

Applications

The SMB211 is well suited for increasingly complex consumer, computing and infrastructure electronics applications such as printers, RAID cards, ADSL/Cable modems/routers, switches/routers, digital televisions, digital set-top boxes (STB) and digital video recorders (DVRs).

Pricing and Availability

The SMB211 is offered in a thermally-enhanced, lead-free 3mm x 3mm QFN-20. Available now in production quantities, the SMB211 is priced at \$0.66 each for the QFN package in quantities of 10,000 units.

Design Software and Programmer for Prototype Development

To speed user product development, Summit offers customers the SMB211EV companion evaluation board and a graphical user interface (GUI) software so designers can quickly see the features and benefits and design a prototype intelligent power supply solution with the SMB211. This is a complete development tool that lets designers easily manipulate the characteristics of their systems. The SMB211EV 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 SMB211EV 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.

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.

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. Visit www.summitmicro.com/MobileGreen for more information.

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