

News Release

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Summit Hot-Swap Controller Minimizes Power Dissipation, System Cost and Board Space

Industry's First Programmable Dual Active OR'ing Hot-Swap Controller eliminates need for passive OR'ing diodes.

San Jose, Calif. – September 27, 2005 – **Summit Microelectronics** has expanded its programmable power management family with the introduction of an innovative, dual-feed active OR'ing hot-swap controller. The SMH4814 device can monitor and control two independent –48V feeds, allowing for redundant power supply control. Furthermore, it eliminates the need for passive OR'ing diodes, which are bulky and significantly contribute to system power dissipation. Using Summit's GUI-based, non-volatile programming technology, system designers can customize the SMH4814 to address their specific power management and control requirements while using a single part number for different platforms.

The SMH4814 provides precise current and voltage control during turn-on and operation while an internal shunt regulator allows compatibility with a very wide input voltage range. Unlike traditional implementations that utilize OR'ing diodes to connect redundant power supplies, the SMH4814 controls external N-channel field effect transistors (FETs), thereby significantly reducing total system power dissipation. This in turn minimizes costs and board space associated with cooling fans and heat-sinks. Lower power levels also eliminate the need for through-hole components, so manufacturing complexity is reduced.

The SMH4814 offers a variety of protection features that increase system performance and reliability. Included are soft-start power-up, "over-current circuit-breaker" functions and integrated over-voltage and under-voltage monitors, allowing for full protection from system failures. The over-current trip levels, forced shutdown mode, and over-voltage/under-voltage monitor thresholds are fully programmable allowing for a high degree of design flexibility. Additionally, a programmable glitch filter is provided on the monitor circuits to prevent false alarms during transients.

The SMH4814 continuously monitors the incoming feeds and switches to the most negative feed as necessary. In addition, it hot-swaps and sequences up to four independent downstream DC-DC converters with programmable sequence order and delay times. The SMH4814 ensures that a series of conditions are met before the external power MOSFET is turned on and the supply voltage is ramped up in a controlled, well-behaved manner. The device's integration, versatility and high-performance meet the most stringent requirements for high-end systems requiring maximum up-time. Furthermore, all these features are offered in a space-saving 5x5mm QFN package, providing an 85% footprint reduction over the traditional SOIC-28 package.

The SMH4814 allows a variety of add-in cards to be removed from or inserted into a fully powered host platform without an interruption in the system's operation and without damage to any of the devices on the board. Typical applications are those with -48V power distribution, including high-availability servers, wireless base stations, central office switches, and telecommunications line cards that demand both on-the-fly configurability and redundant power supply to the system. Other applications include systems designed to support the Advanced Telecom Computing Architecture (AdvancedTCA™) specifications, especially the ones with increasing power levels.

Programming is achieved via the convenient I²C bus and configuration data is safely stored in non-volatile EEPROM memory of which 256 bytes are available for user data storage. The devices can be programmed during development and then used in a "fixed" configuration or they may be re-programmed in-system via the I²C interface.

Packaging, Pricing, and Availability

The SMH4814 is offered in both the commercial and the industrial operating temperature range and is packaged in the space-saving 5x5 28-pad QFN and 28-pin SOIC packages. Available now in production quantities, the SMH4814 is priced at \$4.18 each in the commercial temperature range, and at \$6.43 in the industrial temperature range for the SOIC package in quantities of 1,000 devices. Unit pricing for the QFN package is at \$4.37 in the commercial temperature range and \$6.75 in the industrial temperature range in quantities of 1,000 units.

Design Software and Programmer for Prototype Development

To speed user product development, Summit offers customers the SMH4814 companion evaluation board providing a graphic user interface (GUI) software so designers can quickly see the features and benefits and design a prototype power supply with the

SMH4814. This is a complete development tool that lets designers easily manipulate the characteristics of their systems. The SMH4814EV design kits includes menu-driven Microsoft Windows® graphic user interface (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 SMH4814 kit 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).

URL:

http://www.summitmicro.com/prod_select/summary/SMH4814/smh4814.htm

About Summit Microelectronics: “Programmable power for a digital world”. Summit Microelectronics supplies semiconductors that manage and provide power functions in networking/communications, storage/computing, industrial, military, and consumer products. Customers can very rapidly tailor Summit's programmable analog technology to multiple applications by programming the same part.

Founded in 1997, Summit is headquartered in San Jose, California. The Company is ISO 9001 certified.

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