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Microchip Technology Announces 2 MHz Pulse-Width Modulator (PWM)

High-Speed PWM Closes Feedback Loop in Intelligent Power Supplies

CHANDLER, Ariz.--(BUSINESS WIRE)--

Microchip Technology Inc. (NASDAQ:MCHP), a leading provider of microcontroller and analog semiconductors, today announced the MCP1631 2.0 MHz, high-speed Pulse Width Modulator (PWM). The highly integrated device contains a 1 Ampere (A) integrated MOSFET driver, high-speed comparator for over-voltage protection, and both battery-current and voltage-sense amplifiers in one small package. Protection features, such as Under Voltage Lock Out (UVLO) and overtemperature protection, come standard with the PWM, which is capable of charging multiple battery chemistries, including Li-Ion, NiHM, NiCd and Lead Acid.

The MCP1631 PWM provides a means to close the feedback loop in Switch-Mode Power Supplies (SMPSs) that use microcontrollers for general system intelligence and control. The integration of the PWM's SMPS input and output interface via its voltage comparator, battery-voltage and current-sense amplifiers, plus its 1A MOSFET driver, enable designers to use this single device to perform many different functions in their designs. The result is a smaller design footprint and lower overall cost.

Additionally, the MCP1631 is controlled by an easily-programmable microcontroller, meaning that exact charge profiles for a variety of battery-charging systems can be accurately met, while closing the feedback loop with the speed and precision needed for safe charging and long battery life. The PWM's UVLO and overtemperature protection features enhance the safety of battery-charger designs.

"Microchip is pleased to again offer a device for the switch-mode power arena that recognizes and simplifies bringing digital control into the analog world," said Bryan Liddiard, vice president of marketing with Microchip's Analog and Interface Products Division. "This product further exemplifies Microchip's commitment to the intelligent power-supply and battery-charging markets."

"The MCP1631 PWM offers a unique partition of SMPS functions," continued Art Eck, senior product marketing manager with Microchip's Analog and Interface Products Division. "Recognizing the complexity of closing the feedback loop in such control architectures, the PWM provides a means for doing so, while using a microcontroller for system control."

High-voltage versions of the MCP1631 PWM are available (Part # MCP1631HV), which operate from 6V to 16V and include a Linear Regulator (LDO). The standard versions of the device operate from 3V to 5.5V, and do not include a LDO. Possible applications include handheld medical, consumer and industrial electronic devices that require power management and SMPS technology, with a focus on battery charging. Examples include

intelligent power supplies, smart battery chargers, RF remote devices, handheld scanners, parallel power supplies and AC power factor correction.

Development Support

The MCP1631 Battery Charger Reference Design (Part # MCP1631RD-MCC1) is available, to help designers evaluate the MCP1631HV in their applications. The design includes a PIC16F883 microcontroller, which generates the proper charge algorithm and selects the battery type and number of cells for the application. It operates from a 12V input and is capable of charging 1- or 2-cell Li-Ion, or 1 - 4 NiMH batteries in series. The reference design is available for purchase today at www.microchipdirect.com, for $50.

Packaging, Pricing & Availability

With availability in the ultra small 4 mm x 4 mm QFN package, as well as in standard 20-pin TSSOP and SSOP packages, the PWM meets the needs of compact, cutting-edge designs, as well as traditional designs. Prices range from $1.06 - $1.21 each in 10,000-unit quantities, depending upon device and package option. Samples are available today at http://sample.microchip.com, and the device can be purchased today at www.microchipdirect.com.

For applications where complete digital control of the power-conversion feedback loop is appropriate, Microchip offers a family of 16-bit dsPIC(R) Digital Signal Controllers (DSCs) for SMPSs and digital power conversion. More information on these devices can be found at www.microchip.com/SMPS.

For further information, contact any Microchip sales representative or authorized worldwide distributor, or visit Microchip's Web site at www.microchip.com/MCP1631.

Microchip Customer Support

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About Microchip Technology

Microchip Technology Inc. (NASDAQ:MCHP) is a leading provider of microcontroller and analog semiconductors, providing low-risk product development, lower total system cost and faster time to market for thousands of diverse customer applications worldwide. Headquartered in Chandler, Ariz., Microchip offers outstanding technical support along with dependable delivery and quality. For more information, visit the Microchip website at www.microchip.com.

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