Power adapter chipsets achieve fast standby recovery

iWatt [1] has expanded its PrimAccurate [2] pulse width modulation (PWM) controller platform to include two new power adapter chipsets that offer the company's fastest standby recovery. The iW1766 [3] + iW628 [4] and iW1767 [5] + iW628 [4] chipsets provide ultra-low, <10mW standby power at up to 12W output power and <20mW standby at up to 24W output power (respectively), while giving designers the option for what the company believes is the industry's fastest dynamic load response(1). This combination of features makes these new chipsets greener, higher performance solutions for universal AC/DC adapters and chargers for next-generation media tablets and smart phones, as well as consumer electronic products and home networking devices that remain permanently plugged in to the wall in standby.

Power supplies that achieve low standby power typically do so by entering a standby operating mode. However, when a load is applied, they need to "wake up" quickly to keep the output voltage from dropping too low. Dynamic load response (DLR) is determined by the speed at which the system wakes up and responds to changes in the power load.

The iW628 is an adaptive voltage position monitor designed specifically for use with the iW1766 and iW1767 to improve DLR. It sits on the secondary side of an isolated power supply and provides an ultra-fast "wake-up" signal to the primary-side regulator in the event of a sudden power load change. The iW628 uses iWatt's patented "normally OFF" technology to eliminate the bias current associated with

conventional secondary-side controllers, thereby minimizing standby power consumption.

“The trade-off between dynamic load response and standby power is critical in power adapters and chargers,” said Zahid Rahim, vice president and general manager of iWatt’s AC/DC business unit. “We believe iWatt offers the broadest range of PWM controllers to address this trade-off and give designers more options to select the optimal DLR and standby power based on their system requirements.”

These new chipsets achieve what the company believes is the ultimate in DLR performance using the additional iW628 voltage position monitor. They join iWatt’s recently announced iW1699, iW1760, iW1761 and iW1762 controllers, which offer good DLR performance and low standby power without the need for an additional component.

All controllers in this platform exceed current energy standards in the markets in which the company competes, including the proposed stringent 2012 U.S. DoE[(2)]regulation requiring under 100mW AC/DC adapter standby power consumption and tighter efficiency requirements. Additionally, all six PWM controllers come in a standard, low-cost, 8-lead SOIC package and offer full protection from fault conditions, including output short-circuit, output over-voltage, output over-current, and over-temperature protection. The iW628 is packaged in a 3-lead SOT-23.

www.iwatt.com [6]

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