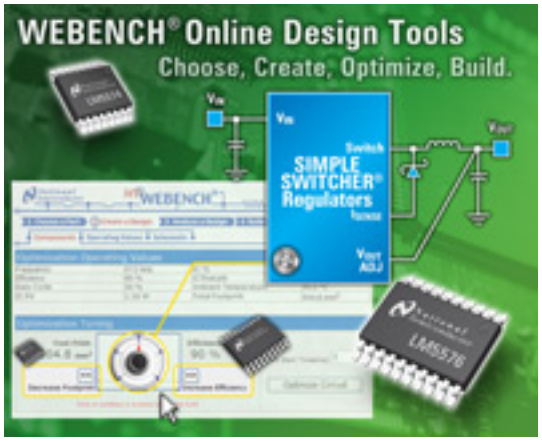
Designers Can Quickly Dial-in Performance



National Semiconductor Corporation announces the addition of six high-frequency buck regulators to its SIMPLE SWITCHER® product family along with a "dial-in performance" enhancement to its WEBENCH® design environment. The six new regulators feature a unique combination of high performance, flexibility and ease-of-use for DC/DC power supply designs.

National’s new buck regulators and enhanced WEBENCH suite of tools enable novice as well as seasoned power supply designers to easily "dial-in their size and efficiency requirements while also realizing fast time to market. Design results are verified by WEBENCH online electrical and thermal simulations and created for 24-48 hour delivery using the BuildIt&#153 custom prototype power supply kit.

The regulators operate with an input voltage range up to 75 V and deliver up to 3 A of continuous output current. The patented emulated-current-mode technology provides desirable load transient response in low duty cycle applications that are not addressable by traditional current mode control. Operating frequency is adjustable from 50 kHz to 1 MHz, providing industry-leading dynamic range. To reduce EMI, a frequency synchronization pin allows multiple ICs from the family to self-synchronize or to synchronize to an external clock. The regulators guarantee robustness with cycle-by-cycle current limit, short-circuit protection and thermal shut-down. Additional features that offer design flexibility include: frequency synchronization, adjustable soft-start and cycle-by-cycle current limit.

"Combined with National’s WEBENCH suite of tools, SIMPLE SWITCHER regulators allow design engineers to make decisions about their power supply design, such as the trade-off between size and efficiency, said Mal Humphrey, product line director for National’s Power Management Group. "Any engineer, including seasoned power supply designers, can create, optimize and analyze their design in just one minute."

Six products are included in the new line of SIMPLE SWITCHER regulators. The 0.5 A LM5574, 1.5 A LM5575 and 3.0 A LM5576 buck regulators feature a very wide input voltage range from 6 to 75 V and adjustable switching frequency between 50 and 500 kHz. The 0.5 A LM25574, 1.5 A LM25575 and 3.0 A LM25576 buck regulators feature wide input voltage range from 6 to 42 V and adjustable switching frequency

between 50 kHz and 1 MHz.

Offered in a 16-pin TSSOP package with exposed pad, the LM5575 integrates a 75 V, 330 mW, N-channel MOSFET and the LM25575 integrates a 42 V, N-channel MOSFET. Offered in a 20-pin TSSOP package with exposed pad, the LM5576 integrates a 75 V, 170 mW, N-channel MOSFET and the LM25576 integrates a 42 V, N-channel MOSFET. All of the new SIMPLE SWITCHER regulators are available for simulation on National's WEBENCH design tool.

For more information, visit switcher.national.com. National Semiconductor Corporation, 2900 Semiconductor Drive, Santa Clara, CA (800) 272-9959; www.national.com.

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