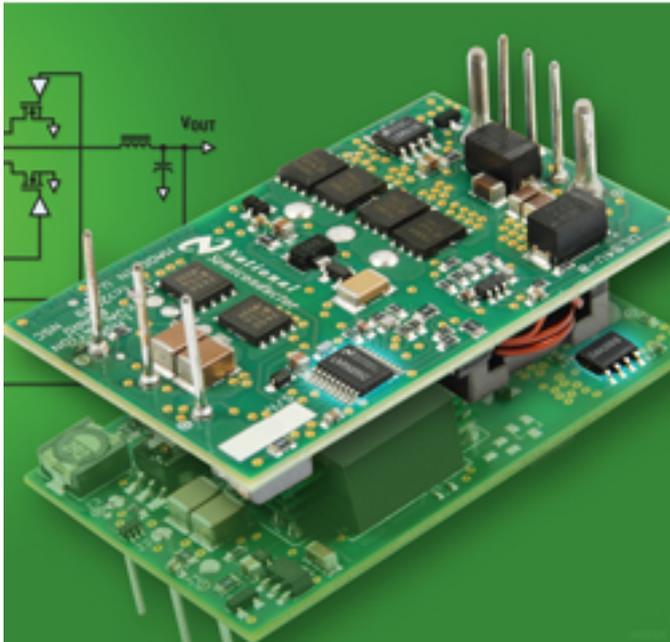


DC-DC Converter Tools Increase Power Density of Modular and Embedded Power Supplies



National Semiconductor Corp. (NYSE:NSM) and Silicon Laboratories Inc. (Nasdaq:SLAB) announced a new quarter-brick isolated DC-DC converter evaluation board and reference design to help power supply designers get higher power density in networking, communications and high-end server applications.

Featuring National Semiconductor's LM5035C pulse-width modulation (PWM) controller and Silicon Labs' Si8420 ISOpro™ digital isolator, the isolated DC-DC converter evaluation board provides power supply designers with a highly efficient 100W reference design in a quarter-brick form factor. The evaluation board reduces the time required for product characterization and design adaptation to the customer's specific requirements.

"National's LM5035C half-bridge PWM controller enables industry leading power density and performance advantages for small form factor DC-DC converters by integrating the bias regulator, gate drivers and synchronous rectifier controls into a single IC," said Jim MacDonald, marketing director for National Semiconductor's Infrastructure Power business unit. "The reference design with Silicon Labs enables even further power density improvements by combining industry-leading power control and isolation technology."

The reference design demonstrates a viable 36V to 75V input half-bridge converter for power module or embedded power applications. The design survives input transients up to 100V as commonly required in communications equipment and protects the power distribution system with hiccup-mode fault protection.

“Silicon Labs’ patented ISOpro digital isolation products provide significant performance advantages including lower power, industry-leading EMI performance and world-class reliability using standard CMOS process technology,” said Mark Thompson, vice president and general manager of Silicon Labs’ Embedded Mixed Signal products. “The reference design with National Semiconductor validates our industry-leading digital isolation technology and puts our customers on the fast track to developing power modules for their embedded applications.”

National Semiconductor LM5035C PWM Controller

National’s LM5035C half-bridge PWM controller delivers power density and performance advantages for small form factor isolated DC-DC converter modules. The LM5035C has been optimized for use with digital isolators to provide further power density improvements.

National’s LM5035C PWM controller includes integrated 2A half-bridge gate drivers and SyncFET outputs that control the secondary-side synchronous rectifier MOSFETs through the Si8420 digital isolator. Dead time between the main and synchronous rectifier on/off transitions is adjustable with a single external resistor. For more information about National’s LM5035C PWM controller, visit <http://www.national.com/pf/LM/LM5035C.html> [1]. Watch a video of the LM5035C at <http://bit.ly/LM5035C> [2].

Silicon Labs Si8420 ISOpro Digital Isolator

Silicon Labs’ ISOpro family of digital isolators employs digital RF technology to communicate data across an isolation barrier. Using the Silicon Labs Si8420 digital isolator in place of pulse transformers eliminates numerous design issues such as duty cycle limitations and non-monotonic decay of output during shutdown. In addition, use of digital isolators improves efficiency and saves board space by eliminating the need for pulse transformers.

For more information about digital isolators from Silicon Labs, visit <http://www.silabs.com/pr/isopro> [3].

Availability and Pricing

The quarter-brick reference design is available now at no charge for download from <http://www.national.com/rd/RDhtml/RD-183.html>. The evaluation board is priced at \$135. To purchase the evaluation board, visit http://www.national.com/store/view_item/index.html?nsid=LM5035CEVAL [4].

About National Semiconductor

National Semiconductor is a leader in analog power management technology. Its products include easy-to-use integrated circuits, PowerWise products that enable more energy-efficient systems, and SolarMagic products which improve the energy output of solar arrays. The company celebrated its 50th anniversary last May. Headquartered in Santa Clara, Calif., National reported sales of \$1.46 billion for fiscal 2009. Additional information is available at www.national.com [5].

About Silicon Laboratories

Silicon Laboratories is an industry leader in the innovation of high-performance,

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analog-intensive, mixed-signal ICs. Developed by a world-class engineering team with unsurpassed expertise in mixed-signal design, Silicon Labs' diverse portfolio of highly-integrated, easy-to-use products offers customers significant advantages in performance, size and power consumption. These patented solutions serve a broad set of markets and applications including consumer, communications, computing, industrial and automotive.

Headquartered in Austin, TX, Silicon Labs is a global enterprise with operations, sales and design activities worldwide. The company is committed to contributing to our customers' success by recruiting the highest quality talent to create industry-changing innovations. For more information about Silicon Labs, please visit www.silabs.com [6].

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Links:

[1] <http://www.national.com/pf/LM/LM5035C.html>

[2] <http://bit.ly/LM5035C>

[3] <http://www.silabs.com/pr/isopro>

[4] http://www.national.com/store/view_item/index.html?nsid=LM5035CEVAL

[5] <http://www.national.com>

[6] <http://www.silabs.com>