



Silicon Labs Introduces Advanced Audio Drivers for High-Power Digital Audio Designs

November 3, 2010 12:00 PM EDT

AUSTIN, Texas--(BUSINESS WIRE)-- [Silicon Laboratories Inc.](#) (NASDAQ: SLAB), a leader in high-performance, analog-intensive, mixed-signal ICs, today introduced a family of isolated gate drivers designed for high-power Class D audio systems with output power ranging from 30 Watts to 1,000 Watts. The new Si824x Class D audio driver family provides exceptional high-fidelity performance, robust noise tolerance and precise dead-time control for a wide range of digital audio applications such as home entertainment systems, powered speakers, guitar amplifiers, public address and outdoor speaker systems, alarms and sirens, and car stereos.

Class D amplifiers - the solution of choice for low-power audio designs - are rapidly replacing Class AB amplifiers in high-power audio applications. As the high-fidelity market increasingly adopts digital audio technology and high-efficiency standards, developers are designing energy-efficient "green" systems that meet Energy Star guidelines while delivering exceptional audio performance and enabling BOM cost reductions. Silicon Labs' Si824x audio drivers provide an ideal solution for these emerging high-power Class D audio designs.

Digital signals in high-power Class D designs require careful control of the "dead time" between pull-up and pull-down stages to optimize performance. Too little dead time can result in wasted power, while too much can cause high total harmonic distortion (THD). Optimal dead-time control is critical to achieving the ultra-low THD performance required by high-fidelity audio systems. While competing audio drivers provide limited capabilities to tweak dead time, the Si824x ICs support precise dead-time control based on the value of an external resistor. The developer can adjust the dead time simply by changing the resistor value, making it easy to meet varying audio design requirements.

Based on Silicon Labs' proven [digital isolation technology](#), the Si824x audio drivers provide high-voltage isolation of up to 2.5 kV between input and output stages, enabling the input stage to be driven by low-voltage Class D control signals while the output drives the high-voltage, high-current output-stage transistors. Isolating the input stage from the output stage prevents noise and transients from corrupting sensitive signals. The high- and low-side outputs are isolated from each other and can be driven up to 1500 V, enabling the Si824x ICs to support high-power audio requirements.

By isolating input and output stages, the Si824x architecture offers the advantage of built-in level shifting. The gate driver's isolated architecture allows the audio system to seamlessly interface the high-voltage power stage with the low-voltage DSP/modulator stage without requiring any extra BOM components. In addition, the power voltages can be arbitrarily chosen, which eliminates the need for costly dc-blocking capacitors often required by competitive solutions.

Designed to operate in noisy environments, the Si824x drivers are inherently immune to power supply transients that can cause damage-inducing "latch-up." This built-in latch-up immunity enables superior manufacturing and operational reliability and lower BOM costs. Some audio amplifier designs based on competing audio drivers contain up to 20 discrete components to protect the driver ICs from latch-up.

"Offering significant advantages over existing audio driver solutions, the Si824x family sets a new high-fidelity performance standard for high-fidelity Class D audio designs," said Diwakar Vishakhadatta, isolation product line director at Silicon Labs. "The combined benefits of built-in digital isolation, precise dead-time control to minimize THD, and high immunity to latch-up and noise make the Si824x ICs an ideal match for high-power Class D audio applications."

In addition to the new Si824x audio drivers, Silicon Labs provides a wide range of IC products for the audio market including [multi-band receivers](#), [radio data system \(RDS\) data receivers](#), [FM receivers](#), [FM transmitters](#), [FM transceivers](#) and the recently announced EMI-mitigating [Si270x Class D amplifiers](#) for low-power (up to 5 Watts) audio designs.

Pricing and Availability

Samples and pre-production quantities of the Si824x Class D audio drivers are available today in a 16-pin SOIC narrow body package. Pricing for the Si824x ICs in 10,000-unit quantities begins at \$1.82 (USD). To ease application development, Silicon Labs offers the full-featured Si824xClassD-KIT evaluation board priced at \$250 (USD). For additional Si824x product information, please visit www.silabs.com/pr/audio-driver.

Silicon Laboratories Inc.

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

Cautionary Language

This press release may contain forward-looking statements based on Silicon Laboratories' current expectations. These forward-looking statements involve risks and uncertainties. A number of important factors could cause actual results to differ materially from those in the forward-looking statements. For a discussion of factors that could impact Silicon Laboratories' financial results and cause actual results to differ materially from those in the forward-looking statements, please refer to Silicon Laboratories' filings with the SEC. Silicon Laboratories disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

Note to editors: Silicon Laboratories, Silicon Labs, the "S" symbol, the Silicon Laboratories logo, and the Silicon Labs logo are trademarks of Silicon Laboratories Inc. All other product names noted herein may be trademarks of their respective holders.

Follow Silicon Labs on Twitter at <http://twitter.com/silabs>.

Silicon Laboratories Inc.

Dale Weisman, +1-512-532-5871
dale.weisman@silabs.com

Source: Silicon Laboratories Inc.

News Provided by Acquire Media