SILICON LABS
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Silicon Labs Class D Amplifier Brings Affordable Fidelity to Consumer Audio

Power-Efficient, All-Digital Si270x Class D Technology Suppresses EMI for Smart Phone Friendly Amplifier Solution

AUSTIN, Texas, Sep 27, 2010 (BUSINESS WIRE) -- Silicon Laboratories Inc. (NASDAQ: SLAB), a leader in high-performance, analog-intensive, mixed-signal ICs, today introduced the industry's first 5 Watt stereo Class D amplifier that effectively mitigates electromagnetic interference (EMI), bringing affordable fidelity to consumer audio electronics. The first member of Silicon Labs' Class D amplifier family, the new Si270x amplifier is ideal for use in a wide range of price- and noise-sensitive consumer audio products including smart phone docking stations, tabletop radios, TV sound bars and monitors, boom boxes and battery-powered radios.

For years, consumer audio engineers have wanted to replace power-hungry analog Class A/B amplifiers with power-efficient digital Class D technology. Until now, two issues have impeded the adoption of Class D amplifiers: the high EMI emissions inherent to traditional Class D solutions, which interfere with AM/FM radio and smart phone operation, and the high cost of adding expensive filtering and shielding for EMI regulatory compliance. While other Class D suppliers have attempted some level of EMI protection, Silicon Labs' Si270x changes the shape of the audio amplifier market with power-efficient Class D technology that substantially suppresses EMI emissions for operation with radios using inexpensive filters.

"With its groundbreaking EMI mitigation technology, Silicon Labs has solved difficult Class D technical challenges for which no other semiconductor company appears to be developing an effective solution," said Susie Inouye, research director and principal analyst at Databeans. "Silicon Labs' new audio amplifier product combines a novel Class D implementation with sophisticated digital audio processing to enable cost-effective digital system designs for the growing consumer audio market. Silicon Labs has entered this market with a new product family that will greatly impact the consumer's experience with digital audio."

According to Databeans, the Class D amplifier market is expected to reach $347 million (USD) this year and is projected to grow 11 percent (CAGR) over the next five years, well over the industry average for the audio market.

Effective EMI Mitigation

The Si270x amplifier uses multi-layer EMI mitigation technology to suppress traditional Class D interference at its source, enabling easier EMI compliance, AM/FM radio co-existence and smart phone compatibility in consumer audio products. Compared to existing Class D solutions, the Si270x amplifier reduces radiated interference by 10X in the EMI compliance band, by 100X in the FM radio band and by 1000X across the AM band.

"The Si270x Class D amp is groundbreaking technology for consumer audio designers who have been forced to use inefficient Class A/B amplifiers to avoid EMI headaches or to spend extra bill of materials and design time on shielding to cope with inadequate approaches from existing Class D amplifiers," said James Stansberry, general manager of Silicon Labs' Audio products. "The Si270x's smart phone-friendly digital architecture is a game changer for the audio industry."

Smart Phone-Friendly Digital Architecture

Traditional Class D amplifiers emit large amounts of EMI radiation in the 900 MHz transmission and reception band, which undermines the over-the-air (OTA) transmission and reception quality of smart phones and docking stations. In addition, analog architectures employed by most docking platforms are highly susceptible to time division multiple access (TDMA) transmission noise pickup. The Si270x amplifier's smart phone-friendly all-digital architecture is inherently immune to radiated noise pickup, and Silicon Labs' EMI mitigation technology enhances OTA performance and compliance.

Power-Efficient, Battery-Saving Design

To avoid the EMI generated by traditional Class D amplifiers, audio engineers often resort to using low-cost but inefficient Class A/B amplifiers, which require larger, costlier power supplies and heat sinks - some with 9 or 12 V battery configurations. The Si270x amplifier allows developers to use smaller, cost-effective power supplies and fewer batteries in portable audio systems such as boom boxes without sacrificing performance.

The Si270x Class D amplifier can enable a 2.5X increase in play time over Class A/B-based systems while using only half the number of batteries (four instead of a typical eight). For example, a consumer audio system based on the Si270x amplifier can provide up to 8.4 hours of play time using four AA alkaline batteries.

Complete Consumer Audio Platform Solutions

The Si270x Class D amplifier is designed to be combined seamlessly with Silicon Labs' popular Si473x AM/FM radio tuner products to enable complete consumer audio platform solutions. The latest Si473x devices offer a stereo analog input and internal analog-to-digital converters (ADCs) multiplexed with the radio tuner front-end to support auxiliary analog system inputs without the need for additional external ADCs. The complementary Si270x and Si473x combination provides a cost-effective platform solution for a wide range of consumer audio products such as tabletop radios, docking stations, boom boxes and mini-stereo systems.

Pricing and Availability

Samples and pre-production quantities of the Si270x Class D audio amplifiers are available today in a 24-pin QFN package. Pricing in 10,000-unit quantities for the Si270x amplifiers begins at $1.17 (USD). To help accelerate application development, Silicon Labs offers audio engineers a full-featured Si270x-A-EVB evaluation board priced at $325 (USD).

For additional Si270x product information, please visit www.silabs.com/pr/ClassD.

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.

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