

Isolated Gate Driver Board Drives And Protects The Latest SiC Power Modules

[Silicon Labs’](#) Si823Hx gate driver board is an all-in-one isolation solution well suited for the recently launched Wolfspeed WolfPACK power module. Wolfspeed power modules are used across numerous power applications, including EV chargers and motor drives in the industrial and automotive markets. Featuring the Si823Hx isolated gate driver and Si88xx digital isolator with integrated dc-dc converter, the board delivers excellent performance in a compact and cost-effective design, optimized for a wide range of modules (see the figure).

Silicon Labs’ isolated gate driver technology is leveraged for a variety of power applications including high-power converters and inverters, motor and traction drives and electric vehicle (EV) chargers. According to the vendor, the Si823Hx gate driver board delivers superior performance to efficiently drive and protect power modules employing any switch technology, including advanced SiC-based modules, used in the most demanding high-power applications.

The two-channel Si823Hx isolated gate driver features built-in dead-time control and overlap protection in a small package, enabling it to drive a half-bridge topology safely and with minimal design effort. The highly integrated Si88xx device not only communicates power module temperature to the controller, but also generates all the power supplies for the board, further reducing costs and simplifying the design. The Si823Hx gate driver board is available with 1-Ω gate driver resistors (Si823H-AAWA-KIT) or 4- Ω gate driver resistors (Si823H-ABWA-KIT).

A complete suite of design resources, developed in partnership with Wolfspeed, are available to jump-start your Wolfspeed WolfPACK evaluation and development including a reference design, evaluation test fixture, and system test report. For more information about the Si823Hx, visit Wolfspeed partner designs [page](#).

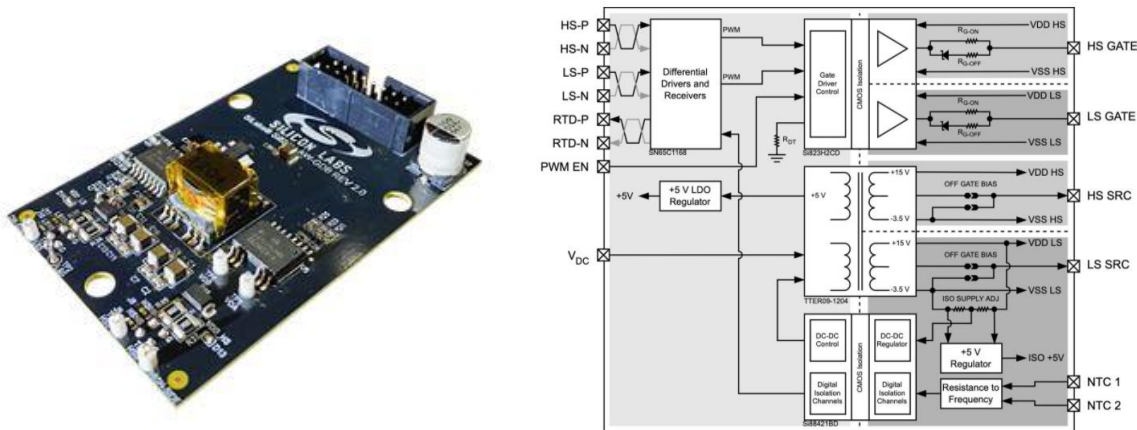


Figure. Measuring 3 x 2 in., the Si823Hx gate driver board (shown on the left) offers a compact solution for driving power modules and discrete transistors such as those used in EV chargers and motor drives in the industrial and automotive markets. The gate driver board is described as an all-in-one isolation solution perfectly suited for the recently launched Wolfspeed WolfPACK power module. This two-channel isolated gate driver solution features a differential digital interface, optimized on-board isolated power supply, and user-configurable turn-on and turn-off gate resistors. Status indicator LEDs and test points ease evaluation and prototyping. An internal block diagram of the gate driver board is shown in (b).