

## Plug-And-Play Gate Drivers Target Railway Applications

[Power Integrations'](#) SCALE-2 products are gate drivers for 130-mm x 140-mm single-IGBT high-power (IHM) modules, which are commonly used in railway and other long-life applications. Comprising the 1SP0630V2M1R main driver, the 1SP0635D2S1R peripheral driver and the ISO6125R-33 power supply, the new SCALE-2 plug-and-play gate drivers streamline system development and installation. These pc-board-style products are particularly beneficial in systems requiring parallel modules for additional power, providing simplicity and flexibility in both electrical and mechanical design (see Figs. 1 and 2).

The compact SCALE-2 gate drivers match the footprint of the smaller IHM single-channel IGBT-module formats with 1200-A to 1400-A output current and 3300-V IGBT blocking voltage. The 1SP063xxxx1R gate drivers are available to suit IHM modules from all major manufacturers, including Infineon, Mitsubishi, Hitachi and ABB.

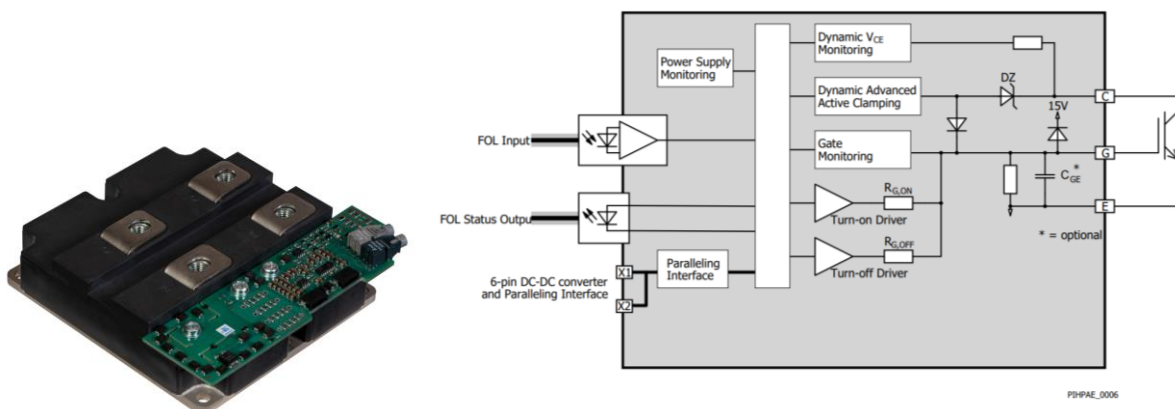
Power Integrations' SCALE-2 technology uses an ASIC chipset to reduce component count and size, with increased performance, scalability and reliability. The SCALE-2 gate drivers enable designers to optimize dynamic switching performance, accuracy and functionality and include advanced active clamping circuitry to protect the IGBT. The gate drivers also include protection features such as dynamic advanced active clamping, short-circuit and undervoltage lockout. Failure status output is also provided.

Francesco Fisichella, director of marketing for high-power industrial applications at Power Integrations, commented, "Rail customers demand robust solutions, and Power Integrations' SCALE-2 technology delivers what they need with high levels of integration and comprehensive protection features."

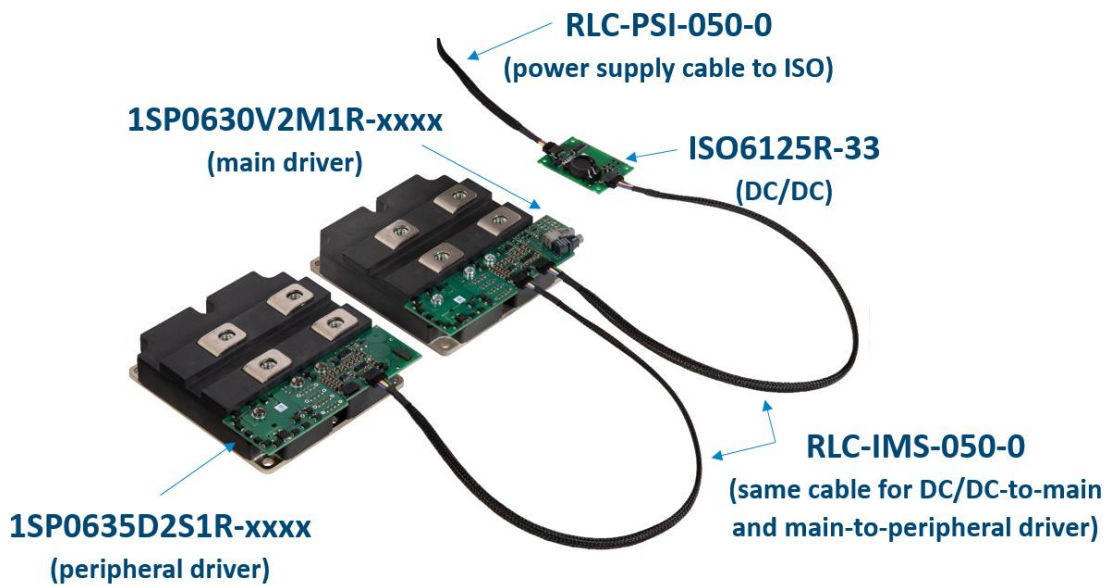
The 1SP063xxxx1R gate drivers meet IEC 61373 specifications for shock and vibration and IEC 60068-2-xx environmental requirements. Units are also EMC-qualified according to EN 50121-3-2 and IEC 6100-4-x.

With standard conformal coating, the gate drivers can also undergo burn-in on request for added reliability. Improved connectors increase interconnection security and facilitate fast release without tooling. Fiber-optic interfaces are provided. Naturally, long life is also a requirement in railway applications, and the 1SP063xxxx1R gate drivers offer a life expectancy of 20 to 30 years.

The new rail gate drivers are available now. For more information, see the 1SP0630 [page](#).



*Fig. 1. Mechanically ruggedized and electrically protected with comprehensive protection features to support use in railway applications, the SCALE-2 gate drivers are compact single-channel intelligent plug-and-play gate drivers optimized for 130- x 140-mm single-IGBT high power (IHM) modules with support for such modules from all major manufacturers.*



*Fig. 2. The gate drivers allow easy paralleling of up to three power modules. Two gate drivers (the 1SP0630V2M1R main driver and the 1SP0635D2S1R peripheral driver) are shown here in parallel with power supplied by the ISO6125R-33 power supply. Note that the same cable is used to interconnect the gate drivers and to power the modules. Robust connectors support easy maintenance, which is crucial in rail applications.*