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200-A Power Module Saves Space In MHEVs And LEVs

From [Vishay Intertechnology](#), Vishay Semiconductors' VS-HOT200C080 is a 200-A power module designed to save space and increase efficiency in 48-V traction inverters for light electric vehicles (LEVs) and belt-start generator/recuperation systems for mild-hybrid electric vehicles (MHEVs). In these applications, the VS-HOT200C080 reduces board space requirements by up to 15% compared to standard discrete solutions, according to the vendor. The company adds that the module's MOSFETs feature best-in-class on-resistance of 0.45 m Ω , reducing conduction losses by 32% compared to competing solutions.

The device integrates 80-V MOSFETs in a half-bridge configuration, a shunt resistor for current reading, bypass capacitors for improved switching performance, and an NTC for temperature sensing—all in an insulated 30-mm x 22.8-mm transfer-mold FlatPAK HC0 package with an electrically isolated exposed DBC substrate (see the figure).

The power module's transfer-mold technology enables highly reliable performance over a wide operating temperature range from -55°C to +175°C, especially during power cycling—allowing the device to meet severe AQG-324 reliability requirements.

The VS-HOT200C080's HC0 package features signal pins and power tabs at different heights. This allows designers to have separate power and signal PCBs, simplifying designs and allowing for better routing. To save additional board space, the signal and power PCBs can be stacked.

Samples and production quantities of the VS-HOT200C080 are available now, with lead times of 13 weeks. For more information, see the VS-HOT200C080 [page](#).

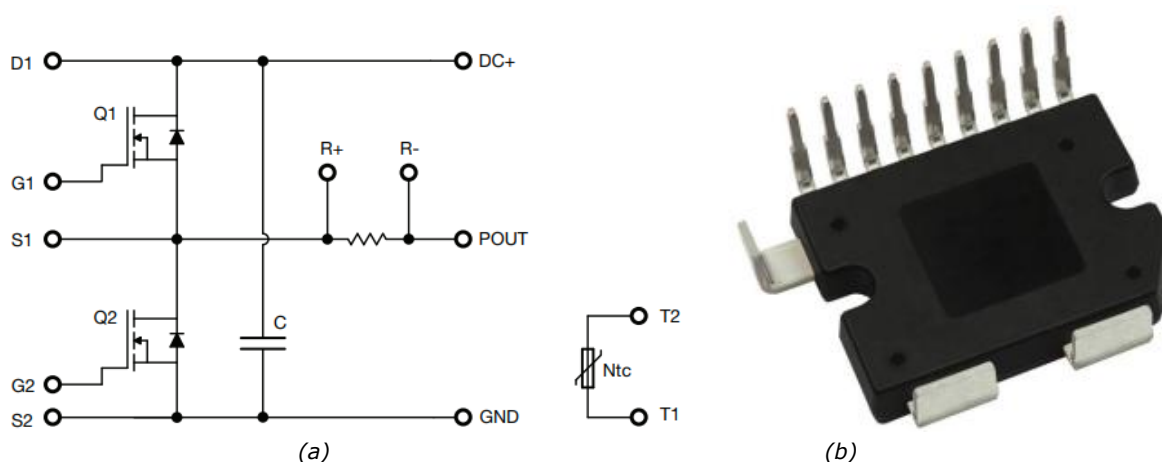


Figure. The VS-HOT200C080 power module integrates half-bridge MOSFETs with 0.45-m Ω $R_{DS(ON)}$ typ. in a 30-mm x 22.8-mm transfer-mold FlatPAK HC0 package. The module's internal block diagram (a) and package (b) are shown here.