Gate Drive IC Simplifies Power Train Design in Hybrid and Electric Vehicles

International Rectifier introduced the AUIR0815S automotive-qualified IC featuring very high output current in excess of 10 A to drive large IGBTs or MOSFETs in inverter stages for the power train of hybrid and electrical vehicles.

The AUIR0815S' very low output impedance and power losses allow operation in harsh and high temperature environments. Typical output resistance is 90 mOhm sink and 180 mOhm source. The device also features negative Vgs driving and continuous on-state capability as a result of an integrated PMOS output in parallel to the high-side pull-up NMOS. The OUTH and OUTL separated outputs allow selection of two different external resistors for charging and discharging the gate essential for controlling EMI and CdV/dT effect in high power motor driver and SMPS applications.

"The AUIR0815 simplifies the design of inverter systems by offering high current drive capability with all of the necessary protection features and qualification requirements for the harsh automotive drive train environment," said Davide Giacomini, Director of Product Management and Applications, IR's Automotive Products Business Unit.

At low input state on the IN pin, the OUTL is pulled down to VEE, allowing negative gate driving for margination and wide range of IGBT selection. Internal shoot-through prevention logic controls the OUTH and OUTL outputs to avoid simultaneous conduction to optimize dead time delay. In addition, a low current consumption mode can be activated through an LPM input pin, which reduces the IC

consumption at the expenses of slower operation delays.

The device is qualified according to AEC-Q100 standards, housed in an industry standard SO-8 package that features an environmentally friendly, lead-free and RoHS compliant bill of materials, and is part of IR’s automotive quality initiative targeting zero defects.

Specifications

Part Number	Package	Io	Vcc-VEE	Rout	Ton Toff	Tr Tf
AUIR0815S	SO-8	Io>10A	10V to 30V	90mOhm / 180mOhm typ	250ns typ	250ns/150ns max

Datasheets and qualification standards are available on the International Rectifier website at www.irf.com [1].

Availability and Pricing

Available in an 8-pin SOIC package, pricing for the AUIR0815S begins at US $0.99 each in 10,000-unit quantities. Production orders are available immediately. Prices are subject to change.

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[1] http://www.irf.com