Three-Phase Gate-Drive IC Serves Automotive Applications

International Rectifier today introduced the automotive-qualified AUIRS20302S three-phase gate driver IC for 12V, 24V and 48V vehicle applications including high-voltage air conditioner compressors, pumps, BLDC motor drives up to 600W and high-voltage motor drives.

The AUIRS20302S targets 12V, 24V and 48V boardnet automotive platforms operating at voltages up to 200V maximum. The new device features an external pre-regulator to generate its own supply voltage to ensure that the gate drives do not exceed 17V even during load dump conditions. The pre-regulator VPR pin can also supply the surrounding system components if the total consumption does not exceed 100mA.

“With its comprehensive set of protection features and a pre-regulator to sustain load dumps, the AUIRS20302S is a robust 3-phase gate driver tailored specifically for car and truck applications ranging from 12V to 48V,” said Davide Giacomini, Product Marketing Director, IR’s Automotive Products Business Unit.

The AUIRS20302S is capable of driving 6 N-channel power MOSFETs or IGBTs using a bootstrap technique to supply the high-side driving circuitry. The device also features embedded deadtime and cross-conduction prevention functions and under-voltage and over-current protection with diagnostics.

Proprietary HVIC and latch immune CMOS technologies enable ruggedized monolithic construction. The logic input is compatible with standard CMOS or LSTTL outputs, down to 3.3V logic. The output driver features a high pulse current buffer

stage designed for minimum driver cross-conduction. Propagation delays are matched to simplify use in high frequency applications.

IR's automotive grade IC products are subject to dynamic and static part average testing combined with 100 percent automated wafer level visual inspection as part of IR’s automotive quality initiative targeting zero defects. The devices are qualified according to AEC-Q100 standards, feature an environmentally friendly, lead-free and RoHS compliant bill of materials.

Specifications

Part Number	Package	Topology	High Side Supply Max Offset Voltage	Vcc and Vbs voltage range	Output Source/Sink Current	Additional Featu
AUIRS20302S	SOIC 28WB	3-phase gate driver	200V	8V-17V with Under Voltage Lockout	0.2A source; 0.35A Sink	Pre-regulator; Current Sense Comparator;Faul

Datasheets and qualification standards are available on the International Rectifier website at www.irf.com [1]. A reference design is available on request.

Availability and pricing

Pricing for AUIRS20302S begins at US $1.58 each in quantities of 10,000-units. Production quantities are available immediately. The devices are lead free and RoHS compliant.

Prices are subject to change.

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