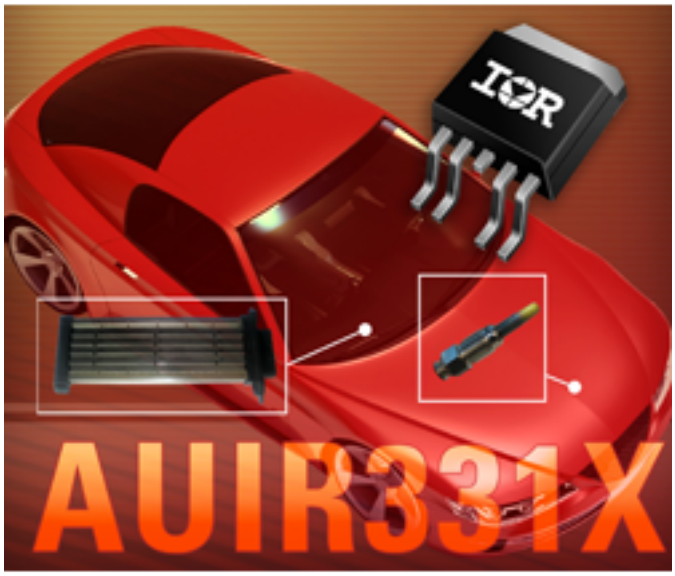
Intelligent Power Switch Family Features Current Sensing for Automotive Applications



International Rectifier today introduced the AUIR331x family of high-side intelligent power switch (IPS) devices with accurate current-sensing and built-in protection circuits for automotive applications. The new IPS devices enhance reliability in intelligent glow-plug controls, auxiliary positive temperature coefficient (PTC) heaters, engine cooling fan drivers and interior fan controllers.

The current-sensing accuracy, particularly at low current, enables precise monitoring of load current in order to provide additional data to the microcontroller for diagnostic applications. Typical examples include open-load detection, early warning of overload conditions or stall motor condition. In addition, the AUIR3316S provides a slow-switching version of the AUIR3313S, which helps minimize noise in EMI-sensitive automotive applications.

"The AUIR331x family includes all protection functions to ensure safe and reliable automotive application up to 30 A continuous and 90 A peak. The accurate current-sensing function adds value to microprocessor-based systems and modules by improving diagnostic capabilities," said David Jacquinod, product marketing manager, IR’s Automotive Products Business Unit.

In addition to current-sense feedback, the AUIR331x family of devices integrates over-temperature and over-current shutdown to offer capability to operate repetitively under short circuit conditions according to the latest AEC Q100-012 standard. In many applications, additional protection devices such as fuses can be eliminated. The over-current shutdown protection feature is programmable which

allows optimization according to the requirements of the load or the application.

In the case of a reverse battery condition, an integrated protection circuit turns the main MOSFET switch on, helping to relieve the intrinsic body diode, reducing or eliminating thermal problems. Additional features such as ESD protection and an active clamp circuit guarantee safe operation and protection under harsh automotive operating conditions.

IR's automotive grade IPS 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**	**Rdson (max at 25C)**	**Programmable Overcurrent shutdown**	**TJ**	**Breakdown voltage (min.)**	**OC/OT Protection type**
AUIR3313S	D2PAK	7mohm	10 to 90A	165°C	40V	shutdow
AUIR3313	TO-220	7mohm	10 to 90A	165°C	40V	shutdow
AUIR3314S	D2PAK	12mohm	6 to 58A	165°C	40V	shutdow
AUIR3314	TO-220	12mohm	6 to 58A	165°C	40V	shutdow
AUIR3315S	D2PAK	20mohm	3 to 30A	165°C	40V	shutdow
AUIR3315	TO-220	20mohm	3 to 30A	165°C	40V	shutdow
AUIR3316S	D2PAK	7mohm	10 to 90A	165°C	40V	shutdow
AUIR3316	TO-220	7mohm	10 to 90A	165°C	40V	shutdow

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

Availability and Pricing

Prices range from US $0.89 for the AUIR3315S to US $1.20 for the AUIR3313S in 100,000-unit quantities. Prices are subject to changes.

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http://www.ecnmag.com/product-releases/2011/07/intelligent-power-switch-family-features-current-sensing-automotive-applications?qt-recent_content=0

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