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STMicroelectronics Supports Drive for Inverters in Smaller Boxes Everywhere, from PHEV Battery Chargers to Solar Generators

New silicon-carbide (SiC) diodes with increased surge-versus-normal current rating is well-suited for Little Box Challenge

Geneva, November 18, 2014 – STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications and a top-ranking supplier of power components, has revealed [new automotive-qualified silicon-carbide \(SiC\) diodes](#) for advanced on-board battery chargers (OBCs) in electric vehicles such as Plug-in Hybrids (PHEVs) that demand high power-handing capability within a confined space.

These diodes allow designers to build smaller power modules, which is good for automotive applications and makes them also a strong choice for tackling the Little Box Challenge presented by Google and IEEE. ST is a device-manufacturer partner of this new \$1 million competition to design kW-scale inverters that are more than ten-times smaller than today's inverters for various applications, particularly solar micro-generators.

The diodes employ advanced technology to prevent high-current spikes from damaging the device. Until now, designers have typically over-specified the diodes for safety, whereas ST's new technology provides 2.5 times greater over-current capability versus rated current. This enables the use of lower-current diodes, which are smaller and more economical, without compromising reliability or losing efficiency.

ST's new SiC diodes are automotive qualified, and feature increased reverse-breakdown voltage of 650V, satisfying the voltage derating factors applied by designers and car manufacturers to ensure suitable safety margin between normal and short-term peak voltages across the semiconductors used in OBC.

The devices build on the known energy-efficiency advantages of SiC as a Wide Band-Gap (WBG) technology that enables lower switching losses and higher voltage ratings in relation to device size, compared to conventional silicon devices. The 650V devices introduced today include the 10A STPSC10H065DY in the TO-220AC power package and the 12A STPSC12H065DY in TO-220AC. In addition, the

STPSC20H065CTY in TO-220AB package and STPSC20H065CWY in TO-247 are 2x10A dual-diode devices that help maximize space utilization and reduce the weight of the OBC.

All the new parts are in production and ready for immediate delivery, priced from \$4.15 for 100 pieces of STPSC10H065DY.

For more information please go to www.st.com/sic-auto-diodes

About STMicroelectronics

ST is a global leader in the semiconductor market serving customers across the spectrum of sense and power and automotive products and embedded processing solutions. From energy management and savings to trust and data security, from healthcare and wellness to smart consumer devices, in the home, car and office, at work and at play, ST is found everywhere microelectronics make a positive and innovative contribution to people's life. By getting more from technology to get more from life, ST stands for life.augmented.

In 2013, the Company's net revenues were \$8.08 billion. Further information on ST can be found at www.st.com.

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