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Mitsubishi Electric Develops World's Smallest SiC Inverter for HEVs

Will help to reduce energy loss, further miniaturize inverters and improve fuel efficiency in future

TOKYO, March 9, 2017 – Mitsubishi Electric Corporation (TOKYO: 6503) announced today that it has developed a working model of an ultra-compact silicon carbide (SiC) inverter for hybrid electrical vehicles (HEVs) that is believed to be the world's smallest SiC of its type at just five liters volume. It also is believed to offer the world's highest power density of 86 kVA / L for two-motor HEVs, thanks to incorporation of full-SiC power semiconductor modules that achieve superior heat dissipation. Mitsubishi Electric's unprecedented new inverter offers improved placement, fuel and energy efficiency, and frees up vehicle interior space. Commercialization for HEVs, electrical vehicles (EVs), and others is expected sometime around 2021.

Ultra-compact SiC inverter (working model)

With fuel-efficiency regulations growing increasingly stringent, the new ultra-compact SiC inverter is expected to help meet the increasing demand for HEVs by reducing the amount of on-board space that must

be allotted to electrical apparatus, such as inverters and motors. To develop this world's smallest inverter, Mitsubishi Electric created a superior heat dissipation structure that ensures long-term reliability by connecting the power semiconductor modules and heat sink with solder.

Going forward, Mitsubishi Electric will continue developing its super-compact SiC inverter for mass production, aiming for commercialization around 2021.

This development has been partially supported by Japan's New Energy and Industrial Technology Development Organization (NEDO).

Technical details will be presented during the National Convention of the Institute of Electrical Engineers (IEEJ) from March 15-17, 2017.

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About Mitsubishi Electric Corporation

With over 90 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavors to be a global, leading green company, enriching society with technology. The company recorded consolidated group sales of 4,394.3 billion yen (US$ 38.8 billion*) in the fiscal year ended March 31, 2016. For more information visit:
www.MitsubishiElectric.com

*At an exchange rate of 113 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2016