

FOR IMMEDIATE RELEASE

Hitachi Automotive Systems Delivers Compact, High-Output Inverters and DC/DC Converters for the first Plug-in Hybrid from Mercedes Benz

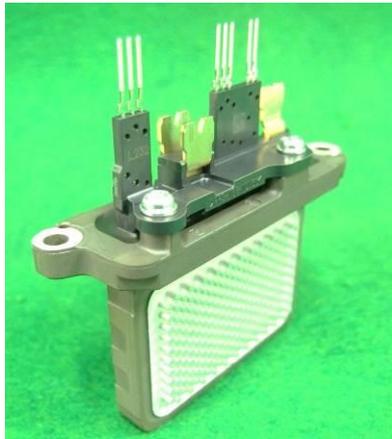
Tokyo, December 3, 2014 --- Hitachi Automotive Systems, Ltd. today announced that the company has begun to supply Daimler AG with compact, high-output inverters and DC/DC converters for use in Daimler's first plug-in hybrid, the S500 PLUG-IN HYBRID and S550 PLUG-IN HYBRID Long being marketed in Europe this autumn and Japan this month, respectively.

Automobile emissions such as carbon dioxide, nitrogen oxide and particulate matter are coming under progressively strict regulations worldwide. Meeting the increasingly severe requirements will require wider use of electric vehicles, including hybrid electric cars, and of high-efficiency electrified powertrains for better fuel economy. For this, implementation of still more compact, higher output inverters and other electric vehicle components is indispensable. As an industry leader in the development of small and powerful inverters and DC/DC converters, Hitachi Automotive Systems has moved aggressively ahead to meet this need by developing a third-generation inverter offering about 40% smaller size and higher output than the company's second generation product, and a high-output DC/DC converter with a maximum efficiency of 94%. The outstanding features and performance of these electric vehicle components are ideally matched to Daimler's dynamic approach to electric vehicle development and led Daimler to use them in the first plug-in hybrid car in the Mercedes Benz line up.

For reducing the size and increasing the power output of an inverter, it is essential to boost the heat dissipation performance of the power module, which integrates numerous high heat emitting power semiconductors. In second generation products, heat dissipation was improved by developing a directly water cooled power module that did away with the thermal grease that tended to impede heat radiation. In third generation products, the ability to eliminate heat was further improved by developing a direct double-sided cooling power module that involved switching from the conventional semiconductor one-side cooling structure to a structure for cooling both major semiconductor surfaces. The newly developed power module achieves a 35% improvement in heat dissipation performance over the second generation module by

utilizing a proprietary cooling structure that immerses the module in cold water. And it reduces size and increases power output by around 40%. A DC/DC converter that achieves a maximum efficiency of 94% was realized by installing a proprietary active clamp circuit, in combination with a high heat emitting transformer and a low loss, high heat dissipation choke coil structure.

Hitachi Automotive Systems is committed to continued development of increasingly sophisticated inverters, DC/DC converters, motors, lithium batteries and other electric vehicle key components. As in the past, it will also contribute to environmental preservation by supplying electric powertrain systems optimized by efficient, integrated control of these core products.



Direct double-sided water-cooled power module that underpinned the development of the compact, high-output third-generation inverter



DC/DC converter



■About Hitachi Automotive Systems, Ltd.

Hitachi Automotive Systems, Ltd. is a wholly owned subsidiary of Hitachi, Ltd., headquartered in Tokyo, Japan. The company is engaged in the development, manufacture, sales and services of automotive components, transportation related components, industrial machines and systems, and offers a wide range of automotive systems including engine management systems, electric power train systems, drive control systems and car information systems. For more information, please visit the company's website at <http://www.hitachi-automotive.co.jp/en/>.

■About Hitachi, Ltd.

Hitachi, Ltd. (TSE: 6501), headquartered in Tokyo, Japan, delivers innovations that answer society's challenges with our talented team and proven experience in global markets. The company's consolidated revenues for fiscal 2013 (ended March 31, 2014) totaled 9,616 billion yen (\$93.4 billion). Hitachi is focusing more than ever on the Social Innovation Business, which includes infrastructure systems, information & telecommunication systems, power systems, construction machinery, high functional materials & components, automotive systems, healthcare and others. For more information on Hitachi, please visit the company's website at <http://www.hitachi.com>.

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