

News Release

FOR IMMEDIATE RELEASE

Hitachi Power Semiconductor Device, Ltd. has developed High-Voltage Motor Driver IC products, for home appliances such as room air-conditioners, which endure steep variation of supply voltage
To help improve the energy-efficiency/energy-saving of home appliances that are used in the area suffering from unstable power supply voltage



Motor Driver IC 'ECN30216(Left)' & 'ECN30624(Right)'

Tokyo, June 7, 2022 – Hitachi Power Semiconductor Device, Ltd. (HPSD) has developed two High-Voltage Motor Driver ICs primarily for room air-conditioners. The single-chip IC products 'ECN30216' & 'ECN30624' are able to tolerate large variation of supply voltage. Both products possess the function of shutting down all the output devices when overvoltage is detected in the motor drive state and thereby achieves the withstanding voltage of 1,000V. 'ECN30216' is mainly for the fan-motors used for in-room units of air-conditioners, and 'ECN30624' is principally for those of exterior units. The products are to be shipped out as of Jun. 2022. Through providing these products, HPSD will globally support the energy-efficiency/energy-saving of home appliances including room air-conditioners in order to contribute to realizing Carbon-Free Society.

A High-Voltage Motor Driver IC is one of those components mounted on an inverter control board which keeps proper operation of motors installed in home appliances such as room air-conditioners or air-cleaners, and is indispensable power semiconductor device for highly efficient, energy-saving home appliances. On the other hand, in some areas where rapid increase of demand for inverter air-conditioners is expected, it is required to develop the power semiconductor devices which bear sizable fluctuation of power supply voltage.

This time, HPSD has developed the High-Voltage Motor Driver IC having the withstanding voltage of 1000V which is realized by implementing the function to disable all the output devices which supply the driving power to the motor upon detecting excessive power supply voltage in the motor drive state. In addition, unique design of new upper arm^{*1} drive circuit has made it possible to include the capacitor inside the driver IC, eliminating two external capacitors required for conventional such products, and thereby saving space to improve customer's freedom of designing motor or inverter control board for home appliances.

*1 High side power semiconductor device of an inverter circuit.

HPSD has supplied its power electronics products for Mobility application such as Traction, and EV so far, but is accelerating its development activities of the products having high environmental values for the realization of Carbon-Free Society. The company will continue to contribute to actualizing Carbon-Free Society through developing and providing the power semiconductor devices that help cut down the power consumption, and CO₂ emission.

Specifications of new products

Type name	Device withstanding voltage ^{*2}	Withstanding voltage when all outputs are shut down ^{*3}	Current rating ^{*4}	Shipment schedule
ECN30216	600V	1,000V	IDC=0.7A、 IP=1.5A	Jun. 2022
ECN30624	600V	1,000V	IDC=2.0A、 IP=3.0A	Jun. 2022

*2 Each inverter phase has two power semiconductor devices to drive a motor, and this is the withstanding voltage of individual power semiconductor device.

*3 Withstanding voltage against the supply voltage of an inverter.

*4 IDC: Output current (DC) 、 IP: Output current (Pulse)

- End -

About Hitachi Power Semiconductor Device, Ltd.

HPSD with its long history/achievement of power semiconductor product development combined with its innovative device technology keeps contributing to the growing business of social innovation. It has three main product categories that are 'IGBT/SiC', 'High Voltage IC' and 'Diodes'. It is our commitment to develop high environmental value products utilizing our high-voltage, and low-loss technology. For more details, please visit our website at <https://www.hitachi-power-semiconductor-device.co.jp/en/index.html>.

About Hitachi, Ltd.

Hitachi drives Social Innovation Business, creating a sustainable society with data and technology. We will solve customers' and society's challenges with Lumada solutions leveraging IT, OT (Operational Technology) and products, under the business structure of Digital Systems & Services, Green Energy & Mobility, Connective Industries and Automotive Systems. Driven by green, digital, and innovation, we aim for growth through collaboration with our customers. The company's consolidated revenues for fiscal year 2021 (ended March 31, 2022) totaled 10,264.6 billion yen (\$84,136 million USD), with 853 consolidated subsidiaries and approximately 370,000 employees worldwide. For more information on Hitachi, please visit the company's website at <https://www.hitachi.com>.

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Inquiry Form

<https://www8.hitachi.co.jp/inquiry/hpsd/en/general/form.jsp>