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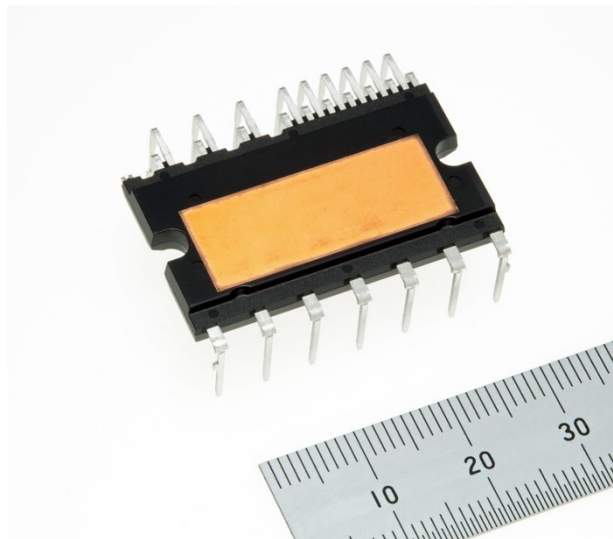
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## **Mitsubishi Electric to Launch “SLIMDIP-Z” Power Semiconductor Module**

*High rated current of 30A will help to simplify and downsize inverter systems in appliances*



SLIMDIP-Z

**TOKYO, December 13, 2022** – [Mitsubishi Electric Corporation](https://www.mitsubishielectric.com) (TOKYO: 6503) announced today that its new SLIMDIP-Z power semiconductor module, featuring an extra-high 30A rated current for use in inverter systems of home appliances, will be released in February 2023. The compact module will enable the SLIMDIP™ series to meet a wider range of power and size needs for inverter units, specifically by simplifying and downsizing systems for multifunctional and sophisticated products such as air conditioners, washing machines and refrigerators.

The demand is growing for power semiconductors capable of efficiently converting electric power to help realize a low-carbon world. In 1997, Mitsubishi Electric commercialized its first DIIPM™ as a high-performance intelligent power module with a transfer-mold structure incorporating a switching device and a control IC to drive and protect the switching element. Since then, DIIPMs have been widely adapted for use in large appliances and inverters for industrial motors, contributing to the downsizing and energy-efficiency of inverter boards.

## **Product Features**

### **1) *Extra-high 30A rated current will enable simpler, smaller inverter systems for appliances***

- Optimized frame shape expands Reverse Conducting IGBT (RC-IGBT) chip's mounting area.
- Insulation sheet reduces thermal resistance between chip junction and case by about 40% compared to existing SLIMDIP-L, which allowed the rated current to be increased to 30A.
- RC-IGBT temperature suppression will help to simplify and downsize the thermal designs of inverter systems.

### **2) *Low noise will help to realize smaller, lower-cost inverter systems***

- Noise-reduction technology deployed in the RC-IGBT helps to reduce the number of noise-suppression components, leading to smaller and lower-cost inverter systems.

### **3) *Compatibility with SLIMDIP series packages will contribute to shorter design times***

- SLIMDIP series package compatibility, including dimensions and pin layout (despite increased current rating), will help to shorten inverter-system design times.

## **Main Specifications**

Model	SLIMDIP-Z
Application	Home air conditioners, washing machines, etc.
Dimensions	18.8×32.8×3.6mm
Rating voltage	600V
Rating current	30A
Built-in chips	Three-phase inverter bridge with built-in RC-IGBT, HVIC, LVIC and bootstrap diode chips
Functions	<ul style="list-style-type: none"><li>- Short-circuit (SC) protection by means of outer shunt resistor</li><li>- Controlled power supply under-voltage (UV) protection: Fo output on N-side</li><li>- Over-temperature protection (on N-side)</li><li>- Analog temperature voltage output (VOT)</li></ul>
Shipments	From February 2023
Other	Open-emitter N-side IGBT

## **SLIMDIP Series Lineup**

Model	SLIMDIP-S	SLIMDIP-M	SLIMDIP-L	SLIMDIP-W	SLIMDIP-X	<b>SLIMDIP-Z</b>
Rating	5A/600V	10A/600V	15A/600V	15A/600V	20A/600V	<b>30A/600V</b>

## **Environmental Awareness**

This product is compliant with the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) directive 2011/65/EU and (EU) 2015/863.

*DIPM and SLIMDIP are trademarks of Mitsubishi Electric.*

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## **About Mitsubishi Electric Corporation**

With more than 100 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. Mitsubishi Electric enriches society with technology in the spirit of its "Changes for the Better." The company recorded a revenue of 4,476.7 billion yen (U.S.\$ 36.7 billion\*) in the fiscal year ended March 31, 2022. For more information, please visit [www.MitsubishiElectric.com](http://www.MitsubishiElectric.com)

\*U.S. dollar amounts are translated from yen at the rate of ¥122=U.S.\$1, the approximate rate on the Tokyo Foreign Exchange Market on March 31, 2022