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**FOR IMMEDIATE RELEASE**

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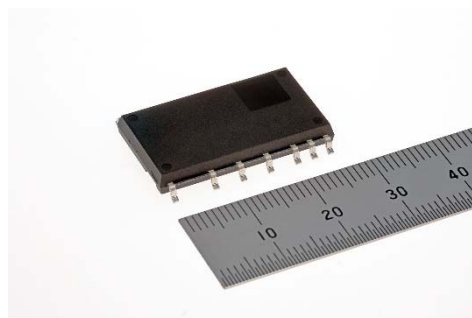
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## **Mitsubishi Electric to Launch MISOP Surface-mount Package IPM**

*Will realize inverter systems that are smaller, simpler and easier to install*

**TOKYO, April 16, 2018**– [Mitsubishi Electric Corporation](http://www.MitsubishiElectric.com) (TOKYO: 6503) announced today that it would launch a MISOP™ (Mitsubishi Electric Intelligent Small Outline Power Module) surface-mount package intelligent power module (IPM) that will facilitate the implementation of low cost inverter systems, thanks to its compact and easily soldered package design. Featuring a well-arranged pin layout, integrated driver ICs and protection circuits, the new MISOP is expected to lead to inverter systems with smaller and simpler designed printed circuit board (PCB). In addition, PCB mounting using reflow soldering will allow easier and lower-cost assembly compared to products requiring through-hole mounting. It will be launched on September 1.

Mitsubishi Electric's new MISOP will be exhibited at major trade shows, including MOTOR TECH JAPAN 2018 during TECHNO-FROTIER 2018 in Makuhari, Japan from April 18 to 20, PCIM Europe 2018 in Nuremberg, Germany from June 5 to 7, and PCIM Asia 2018 in Shanghai, China from June 26 to 28.



MISOP surface-mount package IPM

In line with increasing global measures for environmental protection and energy savings, inverter systems are even being incorporated in small fan motors, including the indoor and outdoor units of air conditioning systems. Mitsubishi Electric's new MISOP surface-mount package IPM is designed for such inverter systems, which must use low-power semiconductor modules and be easy to assemble.

## **Product Features**

### ***1) Simplified design for inverter systems***

- Surface-mount package IPM allows reflow soldering
- Small footprint on PCB

### ***2) Helps to downsize and simplify inverter systems***

- Reverse-conducting IGBT (power semiconductor with IGBT and diode on one chip) with seventh-generation thin-layer structure enables smaller IGBT chip and less space between the chips
- Fewer external components thanks to embedded gate driver ICs with protection functions and bootstrap diode (BSD\*) with current-limiting resistor
- Optimized terminal layout enables simple and easy designed PCB and brings smaller inverter systems

\* High voltage diode used in charge-pump circuit to get multiple power supply from single voltage source

### ***3) Protection functions for more flexible inverter-system designs***

- Overheating protection and analog signal for monitoring IC control temperature
- Short-circuit protection utilizing external shunt resistor and PWM input interlocking function, enables flexible protection-circuit designs

## **Sale Schedule**

Product	Model	Voltage	Current	Shipments
Surface-mount MISOP series	SP1SK	600V	1A	September 1
	SP3SK		3A	

## **Main Specifications**

Model	SP1SK	SP3SK
Voltage	600V	
Current	1A	3A
Dimensions	15.2×27.4×3.3mm	
Built-in chips	Three-phase inverter bridge with built-in RC-IGBT (IGBT+FWD), HVIC, LVIC, and BSD chips	
Integrated functions	<ul style="list-style-type: none"><li>- Short-circuit protection through external shunt resistor</li><li>- Power-supply low-voltage protection</li><li>- Fo output on N-side protection</li><li>- Overheating protection</li><li>- Analog temperature voltage output</li><li>- Interlock</li></ul>	
Other	Inverter with divided-emitter N-side (3 shunts)	
Applications	Blower motors, water pumps and dish washers	

## **Environmental Awareness**

The products mentioned in this release are compliant with the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) directive 2011/65/EU

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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 4,238.6 billion yen (US\$ 37.8 billion\*) in the fiscal year ended March 31, 2017. For more information visit:

[www.MitsubishiElectric.com](http://www.MitsubishiElectric.com)

\*At an exchange rate of 112 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2017

*MISOP is a trademark of Mitsubishi Electric Corporation*