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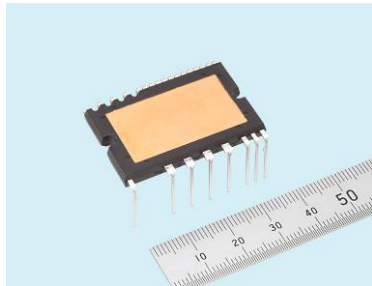
Mitsubishi Electric Launches SiC Power Semiconductor Modules

Reduce size and raise efficiency of home appliances, industrial equipment, railcar traction systems

TOKYO, May 9, 2013 – [Mitsubishi Electric Corporation](http://www.mitsubishielectric.com) (TOKYO: 6503) announced today the launch of three types of silicon carbide (SiC) power modules for home appliances, industrial equipment and railcar traction systems. The modules, which use schottky-barrier diodes (SBD) made with SiC, are expected to reduce the size, lower the weight and raise the efficiency of inverters in power electronics devices.

The hybrid SiC DIPPFCTM* for home appliances and hybrid SiC modules for railcar traction system will be exhibited at Power Conversion Intelligent Motion Europe 2013, which will be held in Nuremberg, Germany from May 14 to 16.

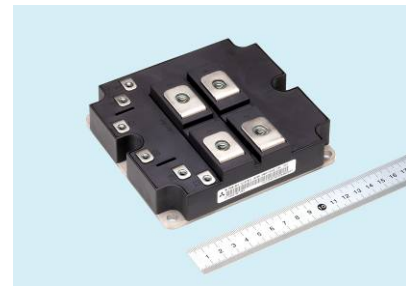
* DIPPFCTM: Transfer-mold-type IPM with for power-factor correction (PFC) circuits



SiC DIPPFCTM for home appliances



Hybrid SiC-IPM for industrial equipment



Hybrid SiC Modules for railcar traction system

Sale Schedule

Use	Product	Model	Shipment date
Home appliances	Hybrid SiC DIPPFCTM	PSH20L91B6-A	May 9, 2013
General industry	Hybrid SiC-IPM	PMH200CS1D060	
Tractions	Hybrid SiC Module	CMH1200DC-34S	

In recent years, inverters have come to be used in a wide variety of applications, including home appliances such as air conditioners and refrigerators, as well as industrial equipment and railcar traction systems. Power

semiconductors utilizing SiC can dramatically decrease power loss and enable high-speed switching, which is raising expectations from the point of view of energy efficiency.

Product Features

1) *Hybrid SiC DIPPFCTM for home appliances*

- SiC-SBDs reduce recovery current and decrease electromagnetic interference noise
- Realizes high-frequency switching of up to 30kHz, and contributes to the downsizing of reactors
- PFC circuit and drive IC reduces footprint and simplifies wiring pattern
- Package dimensions compatible with Mitsubishi Electric’s supermini DIIPMTM products

2) *Hybrid SiC-IPM for general industry*

- Diodes made with advanced SiC-SBD
- Reduces power loss by about 20% compared to Mitsubishi Electric’s PM200CS1D060 (S1-IPM) and enables smaller, more efficient equipment
- Package and control terminals compatible with Mitsubishi Electric’s PM200CS1D060 (S1-IPM)
- Same protections as those in Mitsubishi Electric’s PM200CS1D060 (S1-IPM)

3) *Hybrid SiC modules for traction systems*

- Diodes made with advanced SiC-SBD
- Reduces power loss by about 30% compared to Mitsubishi Electric’s CM1200DC-34N (N-series IGBT) and enables more efficient devices
- Package and terminals compatible with Mitsubishi Electric’s CM1200DC-34N (N-series IGBT)
- High reliability suitable for use in traction systems

Main Specifications

Application	Model	Voltage rating	Current rating	Connection	Package size (W×D)	Protection, etc.
Home appliances	PSH20L91B6-A	600V	20Arms	interleave	24×38mm	- Built-in drive circuit - Under-voltage protection - Over-current protection - Over-temperature protection
General industry	PMH200CS1D060	600V	200A	6in1	50×120mm	- Built-in drive circuit - Under-voltage protection - Short-circuit protection - Over-temperature protection (on-chip temperature sensor)
Traction systems	CMH1200DC-34S	1700V	1200A	2in1	140×130mm	—

Environmental awareness

These modules are compliant with the European Restriction of the use of certain Hazardous Substances in electrical and electronic equipment (RoHS).

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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 3,567.1 billion yen (US\$ 37.9 billion*) in the fiscal year ended March 31, 2013. For more information visit <http://www.MitsubishiElectric.com>

*At an exchange rate of 94 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2013

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