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Mitsubishi Electric to Launch X-Series HVIGBT Module

Industry-leading power and operating temperature range for smaller, higher-capacity inverter systems

TOKYO, September 29, 2015– [Mitsubishi Electric Corporation](http://www.mitsubishielectric.com) (TOKYO: 6503) announced today the launch of a 6.5kV/1000A X-Series HVIGBT module featuring the highest capacity and highest operating temperature in the industry at 150 degrees Celsius. The reduced inverter losses and improved operating temperature range make it ideal for use in high-voltage converter systems, including traction and electric power applications. Sales will begin November 30.



6.5kV/1000A X-Series HVIGBT module

High-power modules are key for power systems that require large capacity, high reliability and superb efficiency. Mitsubishi Electric commercialized its first HVIGBT module in 1997, which contributed to the increased capacity and miniaturization of high voltage converter systems. To achieve higher output current and reliable design, Mitsubishi Electric has developed the X-Series HVIGBT module with seventh-generation Insulated Gate Bipolar Transistor (IGBT) and Relaxed Field of Cathode (RFC) diode.

Product Features

1) Industry-leading 6.5kV / 1000A power for increased capacity

- Higher output current at the same size as previous modules
- Seventh-generation CSTBT^{*TM} chip and RFC diode chip reduce power loss by about 20 percent and thermal resistance by 10 percent compared to existing HVIGBT module (CM750HG-130R)

* Mitsubishi Electric's original IGBT chip construction incorporating carrier-store effect

2) **Expanded operating temperature range for smaller systems**

- Maximum operation temperature of 150 degrees Celsius, a world's first for the 6.5kV class
- Seventh-generation CSTBT chip and RFC diode chip, and improved package technology enable smaller inverter systems with broad SOA

3) **Compatible package for simplified design and easy replacement**

- Enable for use the inverter system to reduce development term
- Outline and terminal layout compatible with existing HVIGBT module (CM600HG-130H, CM750HG-130R)

Sales Schedule

Model	Specification	Shipment
CM1000HG-130XA	6.5kV / 1000A 1in1, IGBT module	November 30, 2015

Future Developments

Mitsubishi Electric will expand its lineup of energy-saving 6.5kV, 3.3kV and 4.5kV products to contribute to the realization of a low-carbon society.

Specifications

Item		New module	Existing module
		CM1000HG-130XA	CM750HG-130R
Collector-emitter voltage		6.5 kV	6.5 kV
Collector current		1000 A	750 A
Operation junction temperature		-50 °C – +150 °C	-50 °C – +125 °C
IGBT	Collector-emitter saturation voltage**	3.6 V	5.5 V
	Thermal resistance junction to case	11.0 K/kW	12.0 K/kW
Diode	Emitter-collector voltage**	3.0 V	4.0 V
	Thermal resistance junction to case	17.0 K/kW	22.0 K/kW

** T_j=125°C, I_c (I_E)=1000A, typical value

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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 4,323.0 billion yen (US\$ 36.0 billion*) in the fiscal year ended March 31, 2015. For more information visit:

<http://www.MitsubishiElectric.com>

*At an exchange rate of 120 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2015