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Mitsubishi Electric Adds “V1 Series” to Lineup of High-output Intelligent Power Modules

Low power loss and compact package for motor control systems

Tokyo, June 28, 2011 – [Mitsubishi Electric Corporation](http://www.mitsubishielectric.com) (TOKYO: 6503) announced today new 600V/800A intelligent power module (IPM) V1 Series for 37kW-class servo systems and 75kW-class inverter systems. Sales will begin on June 30, 2011.

V1 Series IPMs are single packages of multiple chips, including power chips using insulated-gate bipolar transistors (IGBT) and their driving circuits, as well as a variety of protection circuits.



“PM800DV1B060”

Product Features

Inverter power loss reduced by 15%

- The two IGBT chips are carrier-stored trench gate bipolar transistors (CSTBT™) developed by Mitsubishi Electric.
- Power loss in inverters is approximately 15% less than that in the existing PM800HSA060 model.

Miniaturized motor control systems and enlarged output

- 600V/800A model newly added to the V1 Series helps enlarge output volume.
- Small package (120×90mm) is achieved with small motor control systems.

Enhanced heat protection

- Unlike V Series IPMs, which monitor case temperature, V1 Series IPMs monitor IGBT chips temperature.

Environmental Standards

V1 Series IPMs are compliant with the European Union's Restriction of Hazardous Substances Directive (RoHS) for electrical and electronic equipment.

Summary of Sale

Series	Model	Specifications	Shipment date
Large output power IPM V1 Series	PM800DV1B060	600V/800A, 2-in-1 package	June 30, 2011

Variable frequency inverters are being used increasingly in a wide range of motor control systems for enhanced energy efficiency. In the output stage of these inverters, IPMs are commonly used for switching electric current at high speeds. There is growing demand for IPMs offering low power loss, high output and small package sizes.

Mitsubishi Electric launched its V1 Series of IPMs in 2010.

Note: CSTBT is a trademark of Mitsubishi Electric.

Main Specifications

Collector-emitter saturation voltage ^{*1}	1.85V
Protection	Short circuit (SC) Under voltage (UV) Over temperature (OT) (detects IGBT chip temperature)

*1: 125°C, 800A, typical value

Product Lineup

Collector -emitter voltage	Collector current	V1 Series	
		Model	Module size (W × D)
600V	400A	PM400DV1A060	120 × 70 mm
	600A	PM600DV1A060	
	800A	PM800DV1B060	120 × 90 mm
1200V	200A	PM200DV1A120	120 × 70 mm
	300A	PM300DV1A120	
	450A	PM450DV1A120	

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About Mitsubishi Electric

With 90 years of experience in providing reliable, high-quality products to both corporate clients and general consumers all over the world, 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. The company recorded consolidated group sales of 3,645.3 billion yen (US\$ 43.9 billion*) in the fiscal year ended March 31, 2011. For more information visit <http://www.MitsubishiElectric.com>

*At an exchange rate of 83 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2011