

**MITSUBISHI ELECTRIC CORPORATION**  
**PUBLIC RELATIONS DIVISION**  
7-3, Marunouchi 2-chome, Chiyoda-ku, Tokyo, 100-8310 Japan

**FOR IMMEDIATE RELEASE**

**No. 2902**

*Customer Inquiries*

*Media Inquiries*

Power Device Overseas Marketing Dept.A and Dept.B  
Mitsubishi Electric Corporation

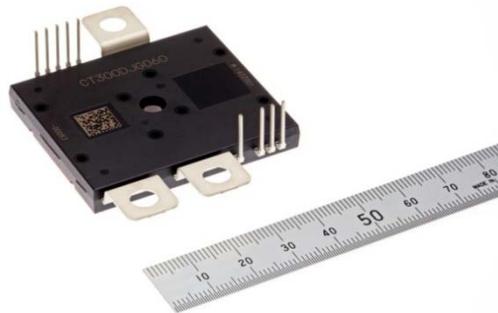
Public Relations Division  
Mitsubishi Electric Corporation  
[prd.gnews@nk.MitsubishiElectric.co.jp](mailto:prd.gnews@nk.MitsubishiElectric.co.jp)  
<http://www.MitsubishiElectric.com/news/>

<http://www.MitsubishiElectric.com/semiconductors/>

## **Mitsubishi Electric to Release Sample J-Series T-PM Extra Compact Type**

*Compact package will help realize small, lightweight and efficient EV/HEV inverters*

**Tokyo, February 12, 2015** – [Mitsubishi Electric Corporation](http://www.mitsubishielectric.com) (TOKYO: 6503) announced today it has developed a new J-Series transfer molded power semiconductor module (T-PM) mainly for motor drive applications in electric and hybrid vehicles. Samples of the J-Series T-PM extra compact type will be released starting February 19.



J-Series T-PM extra compact type (CT300DJG060)

Sales of hybrid and electric vehicles are expanding in line with growing awareness of environmental issues. Automotive components must meet especially stringent safety standards, which creates demands for power semiconductor modules that provide greater reliability than modules for industrial equipment. Mitsubishi Electric pioneered the mass production of power semiconductor modules for hybrid vehicles in 1997.

The sample to be released this time is a compact power semiconductor module, the newest addition to Mitsubishi Electric's J-Series T-PMs mainly for electric and hybrid vehicle motor drive applications. The new module is expected to contribute to further compactness, weight reduction and reduced power consumption in inverters for electric and hybrid vehicles.

### **Sale Schedule**

Series	Model	Ratings	Configuration	Sample Shipment
J-Series T-PM	CT300DJG060	300A/650V	2-in-1	Feb. 19, 2015

## **Product Features**

### **1) *Reduced inverter size and weight achieved through the extra compact package with high integration***

- The compact power semiconductor module features a highly integrated sixth-generation IGBT with a carrier-stored trench-gate bipolar transistor (CSTBT<sup>TM</sup>) structure and high-thermal conductivity isolation sheet in a transfer molded package\*.
- Realizes compact EV/HEV inverter designs by achieving 36% smaller footprint and 42% lighter weight compared with the existing J-Series CT300DJH060 automotive power semiconductor module.

\* Pressure molding method for pouring heated and pressurized resin into an enclosed metal mold. It enables manufacturers to make multiple molds simultaneously for the production of highly reliable power semiconductor modules.

### **2) *Inverter power-loss reduction supported by low-loss power semiconductor chips***

- Realizes low power-loss EV/HEV inverter designs through the utilization of sixth-generation IGBT achieving 12% lower collector-emitter saturation voltage compared with the existing J-Series CT300DJH060.

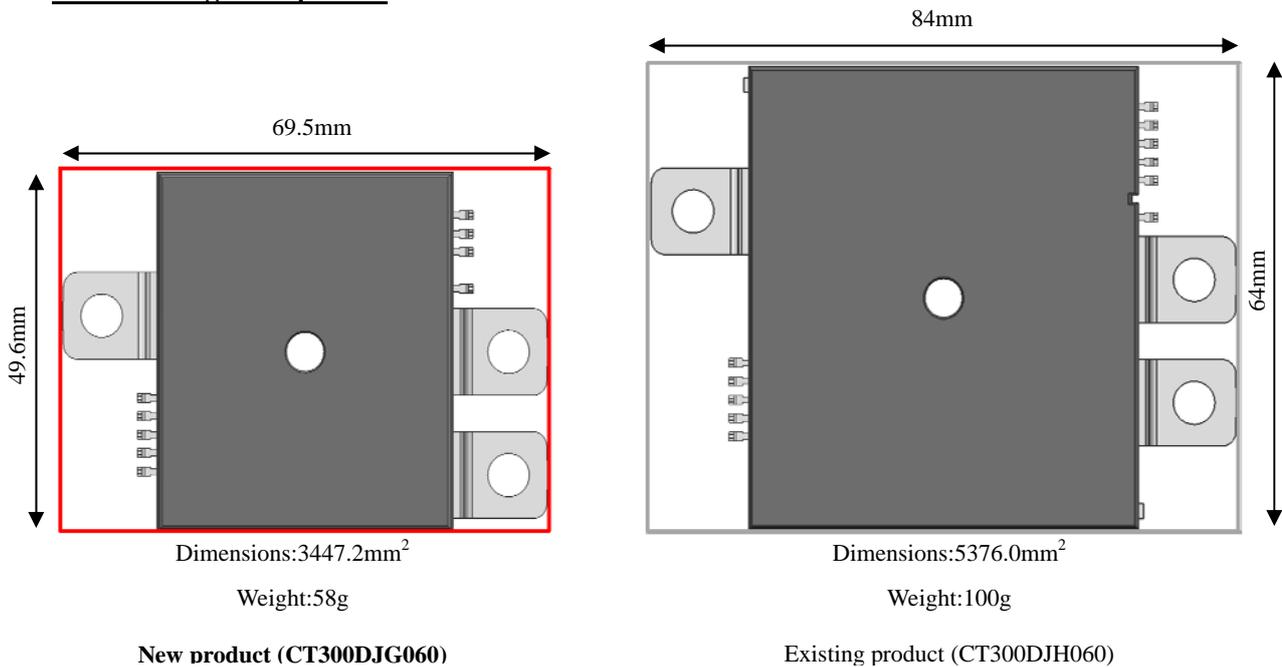
### **3) *Automotive-grade high quality***

- Features transfer molded structure and Mitsubishi Electric's original direct lead bonding (DLB) structure.
- Power-cycle and temperature-cycle life spans are 30 times longer than those of typical industrial power semiconductor modules. The power-cycle lifespan is based on repetitive operational tests with the chip energized and the temperature rapidly changed within a range of 50°C and 100°C. The temperature cycle lifespan is based on repetitive operational tests with the temperature modulated between -40°C and 125°C without the chip being energized.
- DLB structure reduces wiring resistance and inductance.
- Traceability system enables management of materials and components, as well as the entire production process for each unit.
- Completely lead-free, including the terminal plating.

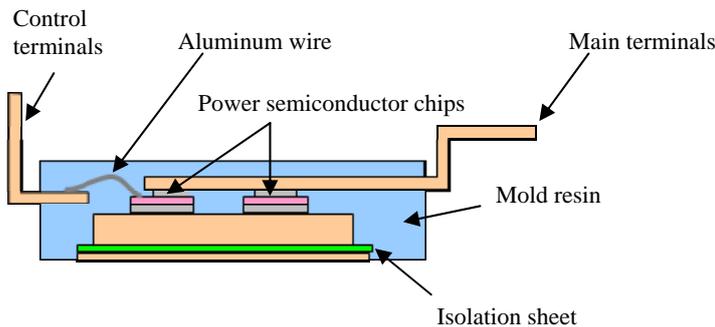
## **Main Specifications**

Model	Rated Voltage	Rated Current	Configuration	Saturation Voltage (Typ, Ic=Rating, Tj=25°C)	Dimensions W×D [mm]	Weight [g]
CT300DJG060	650V	300A	2-in-1	1.4V	69.5×49.6	58

### T-PM Package Comparison



### T-PM Structure



### Environmental Awareness

The CT300DJG060 is compliant with the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) directive 2011/65/EU.

###

### 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 4,054.3 billion yen (US\$ 39.3 billion\*) in the fiscal year ended March 31, 2014. For more information visit <http://www.MitsubishiElectric.com>

\*At an exchange rate of 103 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2014