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Mitsubishi Electric to Launch T-series 2.0kV IGBT Module for Industrial Use

Will increase efficiency and power density of renewable-energy power supply systems rated DC1500V

TOKYO, June 9, 2021– [Mitsubishi Electric Corporation](https://www.mitsubishielectric.com) (TOKYO: 6503) announced today the coming launch of its T-series 2.0kV Insulated Gate Bipolar Transistor (IGBT) Module for Industrial Use, the world's first IGBT¹ with 2.0kV withstand voltage, on June 30. The module is ideally suited to increase the efficiency and reduce the size of renewable-energy power converters, which are in high demand due to the growing use of renewable-energy power supplies. The module will be exhibited at the Applied Power Electronics Conference (APEC) 2021 Virtual Exposition from June 15 to 16.

¹According to Mitsubishi Electric research as of June 9, 2021



T-series 2.0kV IGBT Module for Industrial Use (2.0kV/400A)

Product Features

1) World-first IGBT with 2.0kV withstand voltage for more compact DC1500V power converters

- World's first 2.0kV-rated IGBT suitable for DC1500V-rated power converters, which are difficult to design using conventional 1.7kV-rated IGBTs.
- Enables development of simpler and smaller DC1500V-rated power converters without need for complex topology, such as three-level NPC (I-type connection).²

² Circuit topology consisting of four series-connected IGBTs and two clamp diodes connected to voltage-neutral point in one leg

2) 7th-generation IGBT and RFC diodes help reduce power loss in power converters

- Suitable for high-voltage, lower-power-loss applications as latest (7th-generation) IGBT with CSTBT^{TM3} structure and RFC (Relax Field of Cathode) diodes⁴ optimized for high withstand voltage.

³ Mitsubishi Electric's unique IGBT that utilizes the carrier cumulative effect

⁴ Mitsubishi Electric's original diode that optimizes electron mobility on cathode side

Power semiconductors for efficiently controlling electric power are attracting wider application and increasing demand as key devices that can help to lower the carbon footprint of global society. Meanwhile, power grids that use renewable-energy power sources are required to realize increasingly higher power-conversion efficiency through deployment of higher system operating voltages. For this purpose, power converters rated at DC1500V, the upper limit of the Low Voltage Directive⁵, have been developed. In response, Mitsubishi Electric will soon launch its 2.0kV IGBT T-series suitable for DC1500V power converters, which is expected to help simplify the design and downsizing of such converters as well as raise their efficiency.

⁵ Common safety regulations that enable electrical equipment approved by any EU member country to be accepted for use in all other EU countries

Specifications

Product	Model	Rated voltage	Rated current	Isolation voltage	Connection	Size W×D (mm)
IGBT module T-series Standard-type	CM400DY-40T	2.0kV	400A	4kV _{rms}	2in1	80×110

Environmental Awareness

This product is compliant with the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) directive 2011/65/EU and (EU) 2015/863/EU.

CSTBT is a trademark of Mitsubishi Electric.

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About Mitsubishi Electric Corporation

With 100 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. Mitsubishi Electric enriches society with technology in the spirit of its “Changes for the Better.” The company recorded a revenue of 4,191.4 billion yen (U.S.\$ 37.8 billion*) in the fiscal year ended March 31, 2021. For more information, please visit www.MitsubishiElectric.com

*U.S. dollar amounts are translated from yen at the rate of ¥111=U.S.\$1, the approximate rate on the Tokyo Foreign Exchange Market on March 31, 2021