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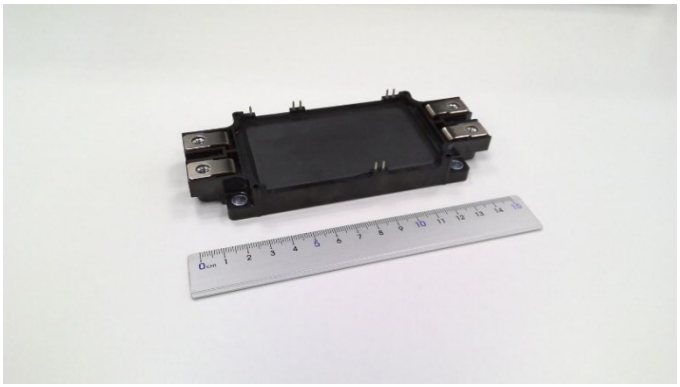
Mitsubishi Electric to Ship Samples of NX-type 1.2kV IGBT Module for Industrial Use

Reduces industrial-inverter power loss by up to approx. 19% for more power-efficient equipment



NX-type 1.2kV IGBT module for industrial use (CM1000DX-24M model)

TOKYO, May 19, 2026 – Mitsubishi Electric Corporation (TOKYO: 6503) announced today that it will begin shipping samples of ten new models of its industrial-use NX-type 1.2kV insulated gate bipolar transistor (IGBT) module on a sequential basis starting June 15. Designed for use in inverters that control machine tools, industrial robots and large-capacity motor drive systems,[1] the modules are equipped with the latest eighth-generation IGBTs. Compared to existing IGBT modules,[2] the modules reduce power loss by up to approximately 19%, thereby decreasing power consumption in industrial equipment.

Mitsubishi Electric will exhibit the NX-type 1.2kV IGBT module for industrial use at Power Conversion Intelligent Motion (PCIM) Expo & Conference 2026 in Nuremberg, Germany from June 9 to 11, as well as upcoming exhibitions in Japan, China and other countries.

By optimizing the IGBT and diode layout, Mitsubishi Electric was able to add a new 1000A-rated model with a rating 1.25 times[3] that of current models, but within the same package size, realizing higher inverter output. The continued use of the Industrial NX-type package ensures the easy replacement of existing modules and helps shorten the development period for new inverters.

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[1] Inverter systems consisting of inverter and converter circuits that efficiently control the rotation speed and power supply capacity of motors in factory machine tools, cranes and other industrial equipment.
[2] Comparison to existing CM800DX-24T1 equipped with 7th-generation IGBT. Calculated based on Mitsubishi Electric's simulation results under the following conditions: 2-level, Vcc = 600 V, Io = 350 Arms, M=1, PF=1, Fc=2kHz, fo=50Hz.
[3] Comparison with the conventional CM800DX-24T1.

Product Features

1) 8th-generation IGBT cuts power loss by up to approx. 19% compared to conventional products

- The proprietary split dummy active (SDA) structure[4] suppresses dv/dt,[5] which causes noise and complicates high-speed switching, resulting in faster switching than with 7th-generation IGBTs and less power loss during turn-on.
- The proprietary carrier plasma layer (CPL) structure[6] suppresses overvoltage during turn-off, which can lead to IGBT failure, and allows for thinner IGBT chips, which helps cut power loss during turn-on, turn-off and conduction.
- These advancements reduce power loss by up to approximately 19% compared to conventional products with 7th-generation IGBTs, contributing to lower power consumption in inverters.

2) New maximum 1000A rated lineup contributes to higher inverter output

- By optimizing the arrangement of the IGBTs and diodes on the chip, the new 1000A-rated model—1.25 times the output of existing products which maintaining the same package size.

3) *Compatibility with conventional packages shortens inverter development periods*

- Maintaining the same external dimensions and terminal positions as the Industrial NX package allows the new modules to easily install in existing products, shortening inverter-development periods.

Main Specifications

Part number	CM1000DX-24M CM1000DXP-24M	CM800DX-24M CM800DXP-24M	CM600DX-24M CM600DXP-24M	CM450DX-24M CM450DXP-24M	CM300DX-24M CM300DXP-24M
Current rating	1000A	800A	600A	450A	300A
Voltage rating	1200V				
Isolation voltage	2500V				
Connection	2in1				
Dimensions	62×152×17mm				
Sample Price	Individual quotation				
Sample shipment	June 15, 2026		September 15, 2026		
Environmental awareness	Compliant with RoHS[7] Directive (2011/65/EU, (EU) 2015/863)				

There is growing demand for power semiconductors that enable efficient energy conversion for a decarbonized world. Industrial power semiconductor modules are essential for inverters that efficiently operate and control motors in factory machine tools and industrial robots. Consequently, power consumption in industrial equipment must be reduced further, driving demand for modules that deliver higher efficiency and greater output.

Since first equipping modules with IGBTs in 1990, Mitsubishi Electric has have earned a strong reputation for the excellent performance and high reliability power of its semiconductor products, which are used in a wide range of applications, including consumer electronics, automotive, industrial, electric power, and railway sectors. The company has focused on reducing power loss and improving the reliability of IGBTs, which

[4] A structure that optimizes gate capacitance by dividing the gate's dummy trenches into two stages (upper and lower).
[5] Voltage change over time.
[6] A structure that controls carriers during dynamic operation by forming a deep n-layer on the back side of the chip.
[7] Restriction of Hazardous Substances Directive.

significantly impact overall product performance. Most recently, Mitsubishi Electric developed 8th-generation IGBTs featuring proprietary SDA structures and controlling CPL structures.

Mitsubishi Electric is steadily contributing to the Green Transformation (GX) by delivering timely products that meet market needs for energy-efficient power electronics across diverse fields.

Website

https://www.MitsubishiElectric.com/semiconductors/powerdevices/

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About Mitsubishi Electric Corporation

Guided by its corporate philosophy, Mitsubishi Electric Corporation (TOKYO: 6503) places sustainability at the core of its operations and values stakeholder trust—encompassing society, customers, shareholders and employees. In pursuing profitability, capital efficiency and growth, Mitsubishi Electric works closely alongside customers to develop value-added solutions that address today's complex challenges while enhancing the company's sustainable corporate value.

Founded in 1921, Mitsubishi Electric has over a century of experience in delivering reliable, high-quality products and solutions. With over 200 group companies and approximately 150,000 employees worldwide, the company is a recognized global leader in manufacturing, marketing and selling electrical and electronic equipment and systems across a broad range of sectors, including public utility systems, energy systems, defense and space systems, factory automation systems, automotive equipment, building systems, air conditioning systems & home products, digital innovations, and semiconductor & devices.

Mitsubishi Electric recorded consolidated revenue of 5,894.7 billion yen (U.S.$ 36.8 billion*) in the fiscal year that ended on March 31, 2026. For more information, please visit www.MitsubishiElectric.com

*JPY 160=USD 1, the approximate rate on the Tokyo Foreign Exchange Market on March 31, 2026