

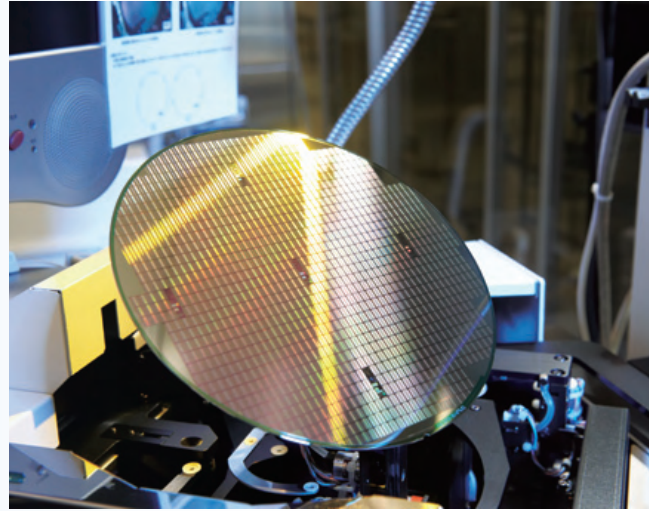
Special Feature: Realizing a Sustainable Society

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Power Semiconductors Realize Advances in Electrical Equipment

Power semiconductors are all around us, including in manufacturing facilities and automobiles and as power converters in such renewable energy applications as wind and solar power generation. Power semiconductors are electronic parts that regulate electricity. Customer products incorporate these devices, which vary in form according to functional or power requirements and play a key role in performance and electricity consumption.

Fuji Electric will draw on its advanced power electronics technologies to constantly evolve power semiconductors and contribute to industrial and social infrastructure energy savings and comfortable living.



Case Example

FANUC CORPORATION

Power Semiconductors Indispensable to Energy-Saving in the Industrial Sector

The yellow robots of FANUC CORPORATION incorporate state-of-the-art electronics technologies and have an excellent reputation for their smooth and agile movements. Robots perform machining at high speed, and with precision and efficiency around the clock at manufacturing sites around the world. Core components of these robots are Fuji Electric's insulated gate bipolar transistor modules (IGBTs)*.

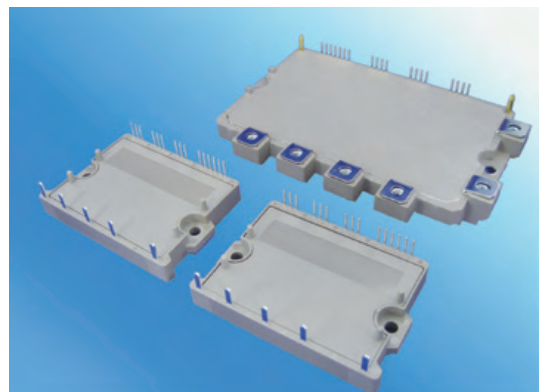
IGBTs control the rotational speed of the motors of robots so that they can move swiftly and smoothly. These modules also control rotational angles. They enable fine machining at a precision of one-250,000th per 360° turn making it possible to manufacture small precision products.

Apart from in robots, power semiconductors — whose applications also include elevators, commercial air conditioners, and other industrial areas — are used in everything from general purpose inverters for conserving energy to uninterruptible power supply systems that safeguard equipment. Power semiconductors contribute to manufacturing technologies, product advances, and energy savings around the world.

* IGBTs are power semiconductors that can handle high voltages and currents.



A robot in use at Fuji Electric Power Semiconductor's Omachi Factory

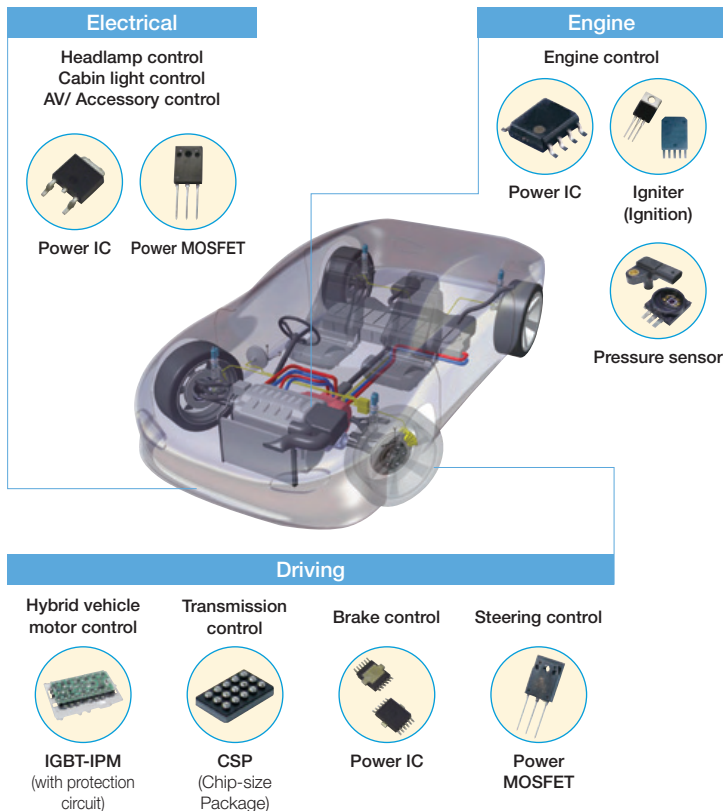


IGBT modules installed in robots

Case Example

Automakers

Meeting the Need for Vehicle Safety and Security with High Reliability and High Performance



Electricity is playing an increasingly important role in hybrid cars, electric vehicles, and other next-generation automobiles. Power semiconductors, which regulate electricity, are used in engines, brakes, and steering controls, and many Fuji Electric products are used in these applications.

For example, in battery-powered next-generation automobiles, IGBTs control charges and discharges between batteries and motors, playing a vital role in improving fuel economy, and maximizing the distance that a vehicle can travel on a single charge.

Automotive parts must withstand the most demanding usage conditions to fulfill all-important safety requirements. Fuji Electric's power semiconductors satisfy these requirements through high reliability and performance. We will continue to supply environmentally friendly products and technologies in the years ahead.

Case Example

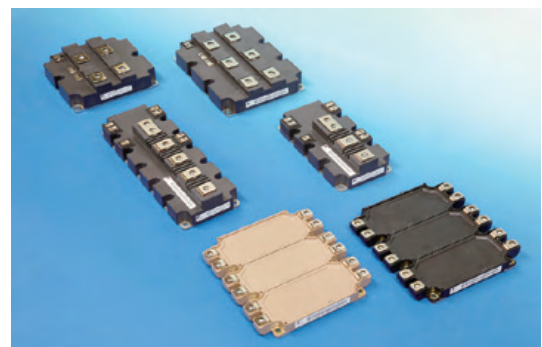
Major Wind Power Generation Equipment Manufacturer in the U.S.

Highly Reliable IGBT Module for Long-term Operation in Wind Power Generator

Wind power generation systems transform the energy of wind into electricity. The role of power converters is to transform the electrical energy produced from the irregular rotations of windmills into stable currents. Fuji Electric's IGBT modules are incorporated in the power conversion equipment of a leading U.S. wind power generator manufacturer that is growing its business worldwide.

We created an IGBT in an unprecedented 1,400-amp, 1,700-volt package to enable efficient conversion of electricity from windmills that are dozens of meters tall.

Wind power generation systems produce electricity over long periods, so power conversion devices must deliver long-term reliability. Fuji Electric's IGBT modules surpass the high quality standards of customers, and have been central components of power conversion devices. We will continue to create offerings that match strict quality requirements.



IGBT modules installed in power transformer equipment