Fuji Electric
Innovating Energy Technology

IGBT for EV and HEV

6MBI800XV-075V-01

IGBT contribute to energy saving

The wide spread(diffusion) of electric vehicles (EV) and hybrid vehicles (HEV) is expected to prevent global warming and improve the air environment.
EV and HEV require improved fuel consumption (electricity consumption) and reduced size and weight of mounted components in order to reduce their environmental load and improve cruising distance.
Fuji Electric has now producted a “direct liquid cooling IGBT module for electrical applications” (IGBT module) in response to these requirements.

- 40% improvement in power to surface area ratio has been achieved over previous model with adoption of 7th-generation RC-IGBT*1 and cooler cover integral construction. We realized the reduction in module size.
- High speed, high-accuracy overheat protection, short-circuit protection has been realized with two on-chip sensors, ensuring customer safety.
- Integration with drive motor made easy by employing thinner design with height of 23.5 mm, and flange construction.

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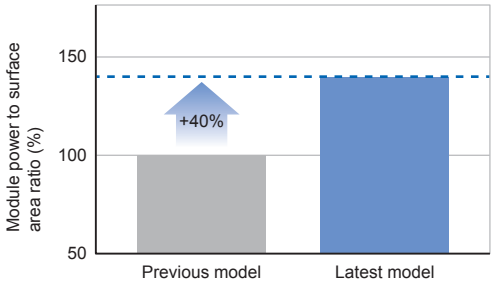
*1 RC-IGBT : Reverse Conductive Insulated Gate Bipolar Transistor

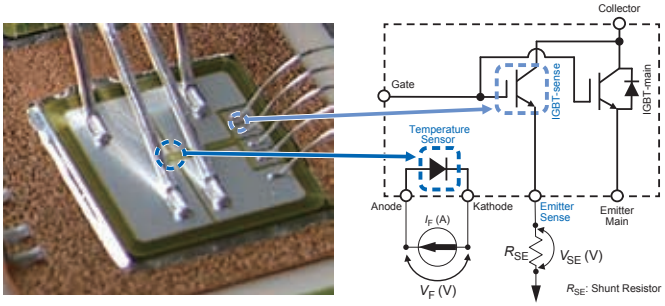
1. Compact size achieved with 7G-RC and 3G cooler

A 40% improvement in power to surface area ratio has been achieved over Fuji Electric's previous model with the adoption of (1) 7G-RC (7th-generation RC-IGBT) and (2) 3G cooler (cooler with integrated cooler cover), allowing the module size to be reduced.



2. Support for improved safety with high-accuracy protective function

Customer safety is ensured by realizing high speed, high-accuracy overheat protection, and short-circuit protection with the adoption of two on-chip sensors, a (1) temperature sensitive diode and (2) current sensor IGBT, based on over 20 years of Fuji Electric's unique technology.



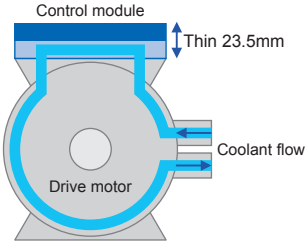
3. Size of customer systems can be reduced with ease

Fuji Electric has successfully reduced the module thickness by integrating the cooler cover, and made it easy to integrate the module and drive motor with the adoption of a flange construction.

Thin cooler with integrated cover

Fuss-free coolant connection with flange construction

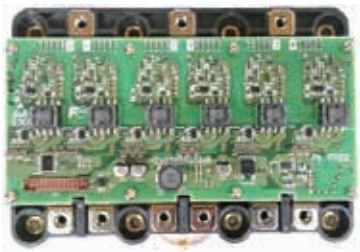
Image of mechanical, electrical integral construction



4. Support for shorter design periods with evaluation kit

Module characteristics are evaluated easily and safely with an evaluation kit. Drive system reference examples are provided to help with customer system design.
Contact your dealer or relevant sales department for details.

Module mounted with evaluation board

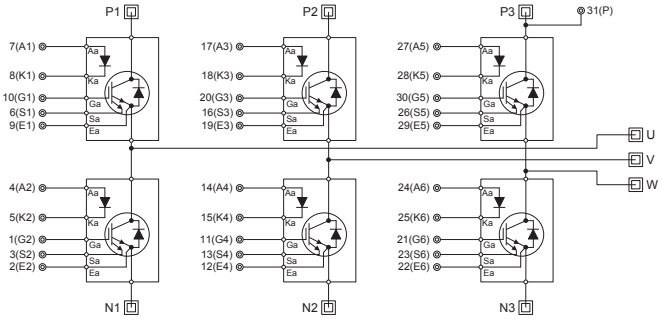


Simple flange joint for evaluation

Product characteristics

Model name		6MBI800XV-075V-01
maximum rating	Voltage: V_{CES}	700V/750V @T_j=-40/175°C
	Current: I_{CN}	800A
Saturation voltage $V_{CE(sat)}$		1.45V/1.65V Typ.@T_j=25/175°C
Internal configuration		6 in 1
Reference configuration example	Application	Inverter for three-phase motors
	Output	80~150kW
	V_{DC}	400V
	I_C max.	460Arms@1sec
	I_C continuous	430Arms
	f_{SW}	6kHz
Dimensions/weight		162 x 117 x 23.5(mm) / 560(g)

Equivalent circuits



G: Gate terminal
E: Emitter terminal
S: Sense terminal (Current mirrer emitter)

A: Anode terminal (Temperature sensing diode)
K: Kathode terminal (Temperature sensing diode)
P: Potential
* one arm is including two chips.

⚠ Safety Precautions

＊Before using this product, read the "Instruction Manual" and "Specifications" carefully, and consult with the retailer from which you purchased this product as necessary to use this product correctly.
＊The product must be handled by a technician with the appropriate skills.

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