

Intelligent Power Modules with High Output Power (V1-Series)

Mitsubishi Electric has launched the new V1-Series as part of the IPM (Intelligent Power Module) line-up. V1-Series is a new intelligent power module which is mainly developed to increase the efficiency of motor drives and power supplies like DC/DC converters. The V1-Series IPM is focussing on applications in the two digit kW- class offering a respective line-up of 200A/300A/450A in 1200V and 400A/600A in 600V.

For this purpose several new technologies have been implemented such as a new full gate CSTBTM chip and a newly developed dedicated control IC. The short circuit detection is realised by a Mirror Emitter technology. With this technology the stress during short circuit could be efficiently reduced, compared to a conventional desaturation detection method.

Chip technology and structure improvements reduce the effective junction temperature and increase the power and thermal cycling capability of this family of IPMs while keeping the mechanical compatibility with the previous 2 in1 V-Series IPMs. Compared to its predecessors of the V-Series the new V1-Series IPMs reduce power losses by approximately 20% as the collector-emitter saturation voltage of the new V1-Series is specified with just 1.85V @125°C.

Protection functions against short circuit (SC), control supply under voltage (UV) and over temperature (OT) are implemented. The OT sensor is part of the surface of the IGBT chip.

The new V1-Series IPM is available for design-in activities.

For more information please contact:

MITSUBISHI ELECTRIC EUROPE B.V.
Semiconductor European Business Group
Gothaer Straße 8
D-40880 Ratingen

Phone +49 (21 02) 486-5270

semis.info@meg.mee.com
www.mitsubishichips.com