TAKAMIYA LAB.

Small chip that intelligently manages large power

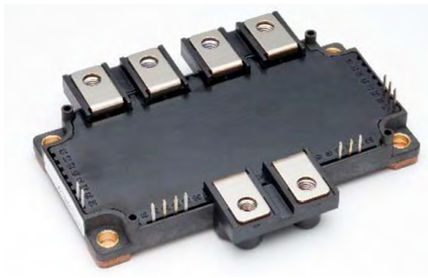
Department of Informatics and Electronics
Centre for Interdisciplinary Research on Micro-Nano Methods (CIRMM)

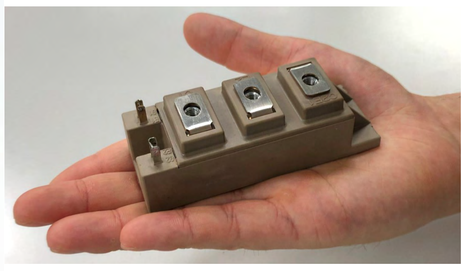
Integrated Power Management
Department of Electrical Engineering and Information Systems, Graduate School of Engineering
http://icdesign.iis.u-tokyo.ac.jp/en/

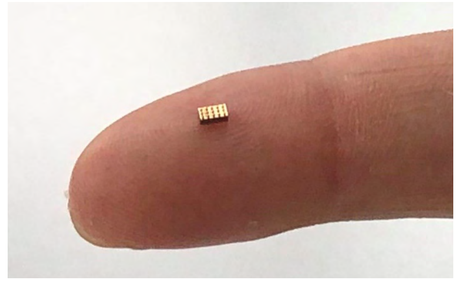
To achieve a carbon-free world by 2050, we are conducting research on **integrated power management**, in which a small IC chip can intelligently handle large amounts of power, with the goal of making power electronics systems more energy-efficient.

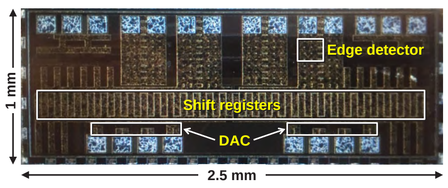
World's first IC chip that controls power semiconductors for energy saving
—Automatic waveform changing gate driver IC chip reduces energy loss by 49%. —

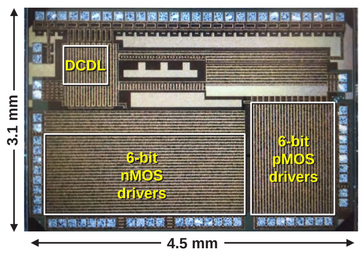
Si IGBT (6500 V, 1000 A) | **SiC MOSFET** (1200 V, 400 A) | **Si IGBT** (600 V, 100 A) | **SiC MOSFET** (650 V, 70 A) | **GaN FET** (100 V, 16 A)

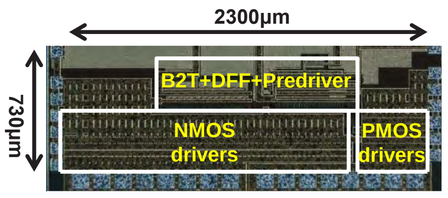


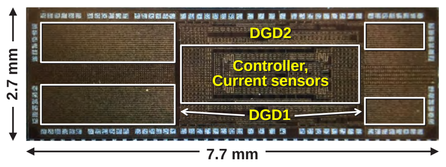


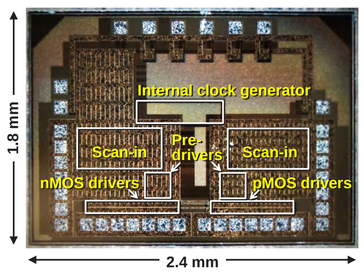












Hybrid DC-DC converters for automotive applications
（Mixed inductors and capacitors reduce losses.）