

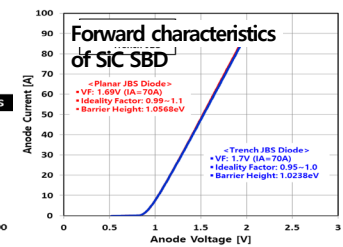
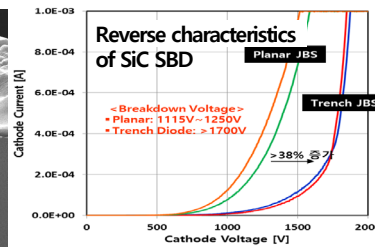
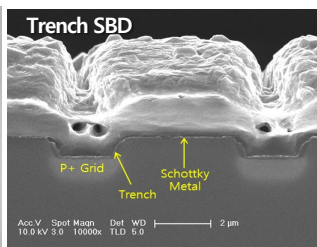
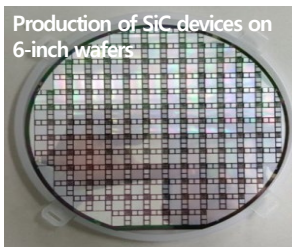
Silicon Carbide (SiC) Power Semiconductor

Technology Overview

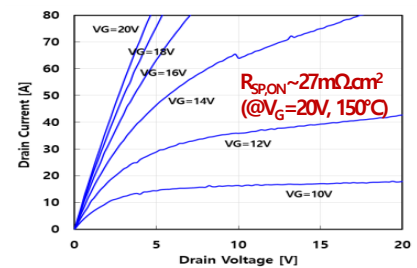
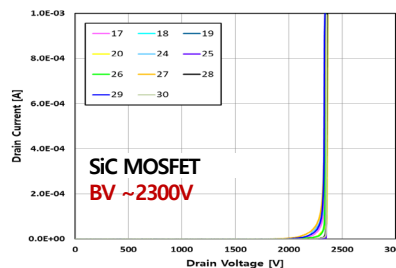
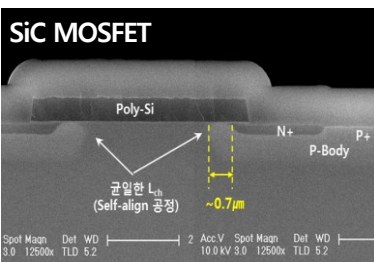
- **SiC Power Semiconductor:** High voltage, high current density, high temperature stability, low current leakage, fast switching characteristics
- The only infrastructure for semiconductor batch production infrastructure in Korea among government-funded institutions- An optimal environment for the development of 6-inch SiC semiconductor devices
- Development of 1700V/70A SiC SBD (Schottky Barrier Diode) with trench structure to enhance breakdown voltage and current leakage characteristics
- Development of 1700V/70A SiC MOSFET (Metal-Oxide-Semiconductor Field-Effect Transistor) using self-alignment process, exhibiting high temperature operation characteristics above 150°C

Development Prototypes

1700V/70A SiC SBD



1700V/70A SiC MOSFET



Application Areas

- Core components for power systems in electric vehicles, solar power, and other renewable energy sources
- Production cost reduction and replacement of industrial power components in automotive, household appliances, railways, HVDC transmission, etc., through power enhancement
- Expansion of research areas, including SiC betavoltaics for semi-permanent independent power modules