

We create new markets by advancing and integrating core technologies. We use our next-generation technologies for research and development to satisfy customers by offering products with ever-increasing environmental performance.

■ Structure

The group's R&D structure consists mainly of the R&D center, which is in charge of basic research and applied technology development; each business department, which is mainly in charge of product development; and the design and development departments of the group companies. In power electronics field which is our main business domain, greater functionality, downsizing and higher efficiency, and lower noise are key R&D themes. The group will pursue these research tasks and develop new products meeting market needs in a timely manner. At the same time, we will work on R&D based on our Corporate Mission of "maximizing energy conversion efficiency for the benefit of humanity and society."

■ R&D Costs

The R&D costs in 2008 were ¥4,544 million (4.1% increase over the previous year) and comprised 5.3% of sales (4.3% in previous year).

■ Major R&D Themes in 2008

The key themes of the R&D center include mass-production of SiC (silicon carbide), which is a promising next-generation material. The center has focused on the potential of this device since the earliest stage when SiC substrates were developed and been proactively researching and developing manufacturing processes and devices. Today, we are already in the reliability and system verification phase for SiC devices developed by test production on our own lines, and practical use is coming closer. In 2009, we will also focus in R&D into mass production to achieve an early product launch.



The other new R&D themes in the power supply circuit technology development center include magnetic body technology, which plays an important role in power supplies. We will not only develop new power supply circuits and applications to create high-efficiency power supplies, but will also continue research in new technology domains, such as magnetic bodies.

■ Summary

We will proactively continue medium and long-term R&D to increase our core competence in "devices, power-supply circuits, and packaging technologies," and to develop new products fusing these technologies synergistically.

As environmental problems including global warming become more serious, we aim to contribute to building an eco-friendly society by offering "environmental performance"-oriented products using "new power-saving technologies."



Silicon wafer heat-treatment process

Note: When a year appears in the text (such as 2008), it refers to the fiscal year.