

R&D Activities



Selecting topics of use to society and allocating resources

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I see a company as a functional group with the purpose of creating products and services for purchase by society. As such, a company should pursue the achievement of that goal rather than new technology itself. Accordingly, we make it our basic policy to first thoroughly learn about unresolved issues in the market. As an example, in the field of power devices in which ROHM is active, attention tends to focus on the development of transistors with new material. However, the function of power devices is power conversion. Seen that way, it's not enough that the transistors are new. I think that what has led us to this viewpoint is our research from both physical and non-physical aspects to learn about the real issues concerning power devices, which aligns with corporate research.

As such, I believe that considering things only from the viewpoint of the semiconductor devices on which ROHM focuses development will not directly connect to solving social issues. What we should undertake is the development of devices from the perspective of their users. As a

company of engineers, however, we're not necessarily strong in market information. To shore up this weakness, we aim to use AI to bring a data-based backing to market perceptions that have mainly consisted of the opinions of marketers. With ready access to engineers engaged in such research, we expect that all of our engineers will become sensitive to markets.

At the same time, no matter how accurate information may be, it is human beings who consider what to do with it. Accordingly, we also pay attention to the development of engineers. A part of this is recommending that engineers obtain doctorate degrees. We do so because obtaining a doctorate is a process of taking a bird's-eye view of the present state to identify research topics, then creating and executing a research plan to resolve them. This is identical to the flow of actions in R&D. In other words, aiming for a doctorate is itself a form of human resource development, with the added considerable benefit that the engineer personally retains the title.

do not result in commercialization can also earn recognition of engineers' achievements in technical presentations outside the company. This recognition from outside the company stokes the enthusiasm of engineers and forms a stepping stone on our path to becoming a major global player. We are working to build up R&D capabilities that generate sustainable growth over the long term by actively releasing papers and making presentations at academic conferences, as well as by partnering with universities through our open research solicitation system and by creating an environment that facilitates a broad perspective in research.

Our R&D Structure and Resource Allocation

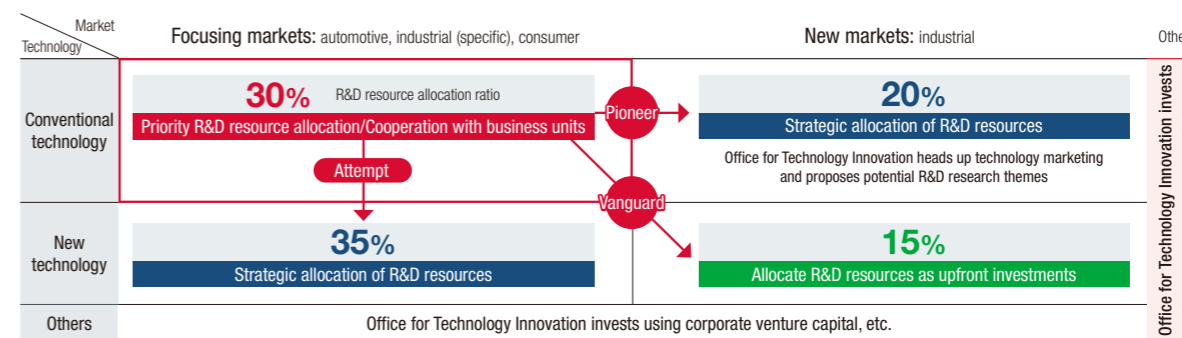
Portfolio management is necessary for R&D in companies, which face demands for business growth. Accordingly, ROHM divides its technologies and its markets into the existing and the new, and uses the resulting four-quadrant matrix to visualize the allocation of R&D resources. To devote more resources toward new technology development in the interest of future growth, we conducted a review of resource allocation in 2024.

In R&D, ROHM also emphasizes the linking of individual efforts to recognition. All technological initiatives, including failures, yield knowledge that we can deploy laterally in some way. Efforts that

Material issues	Evolution of Technologies to Contribute to the Advancement and Progress of Culture	Stable Supply of High-quality Products	Strengthening Sustainable Technologies, Developing and Supplying Innovative Products
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▶ P27 FY2023 results and KPIs

ROHM's R&D Resource Allocation



Acquisition and Development of R&D Human Resources

In R&D, we adopt a human resource strategy that makes capabilities a basis for evaluation. Capabilities form our criteria for personnel assignment as well as for the acquisition and development of human resources. As a result, we achieve high diversity in R&D, which yields powerful synergies.

Enhancing the capabilities of our human resources boosts the level of activity in our R&D. We continue to invest in technology and people for the future by means that include acquiring cutting-edge technology through joint R&D with universities and

other research institutions, and providing environmental support to engineers who seek doctoral degrees after joining ROHM.

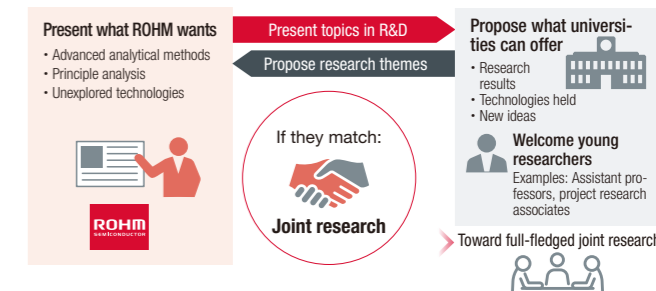
In human resource acquisition, however, ROHM also faces the issue of low recognition due to its status as a B2B manufacturing business. To directly communicate information on ROHM and its initiatives, our members have begun activities such as heading out to academic meetings where the next generation of R&D human resources gather, to take part in technology presentations and host luncheon seminars.

Open Research Solicitation System

ROHM actively engages in open innovation as a means of effectively advancing future-oriented R&D. An example of this is our open research solicitation system.

We position this as an introductory form of joint research that seeks results through industry-academia collaboration, as opposed to support for academic research through subsidies, and we secure the resources needed to continuously operate the system. The initiative solicits proposals for solutions and ideas not obtainable through our efforts alone, and selects promising collaborative proposals as themes for joint research lasting up to three years, nurturing the seeds of future R&D. When further progress is

forthcoming, we move to full-fledged joint development with an expanded scale and time frame to achieve outcomes.



Example of R&D

Pioneering new frontiers for terahertz wave application! ROHM's compact terahertz device

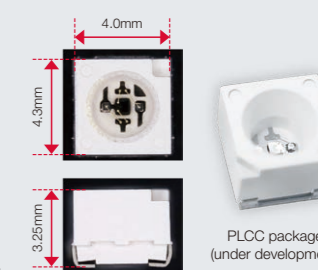
Said to be the last unexplored domain in electromagnetic waves, terahertz (THz) waves combine the rectilinearity of light waves with the transmittance of radio waves, a characteristic that has greatly boosted expectations for their application in future products and for potential markets.

ROHM has developed a terahertz wave generation and detection device that uses resonant tunneling diodes (RTDs). To make maximum use of the device's compactness, lightness, and low power consumption, we are undertaking R&D of applied technology while utilizing open innovation. In addition to a device with a 4mm-square size usable in any location and 10mW power consumption that can run on batteries, we are also developing an optical device that controls radiated terahertz waves. By enhancing directionality through radiated wave convergence, we are working to pioneer applications for the device in ultra-high-speed wireless communication and sensors.



The Engineer Social Hub™ technical support forum operated by ROHM hosts explanations and discussions on the current state of terahertz wave application and the future envisioned by ROHM (Japanese only).
URL: <https://esh.rohm.co.jp/s/esh-blog/terahertz-main-20240701-1-MCZSFRA36TQZBXDJUAY-B3ETWN6YA?language=ja>

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Bare chip size -0.5x0.5mm
ROHM's compact terahertz device