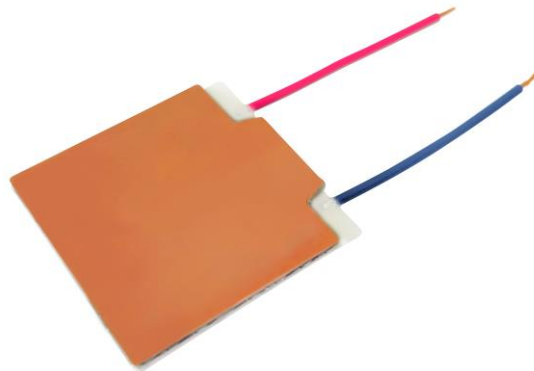


Press Information

Kyocera introduces cutting-edge Peltier module with 21% increase in cooling performance

Kyoto/London, 1st August 2024. Kyocera Corporation introduced a new Peltier (thermoelectric) module with improved heat absorption. This new Peltier module has a maximum heat absorption rate¹ 21% higher than Kyocera's conventional products, enabling dramatically enhanced cooling performance. Kyocera's Peltier modules are primarily used for temperature control of automotive batteries and seats, and this improvement in cooling performance will contribute to battery longevity. As of June 2024, we have shipped a total of 32 million units for automotive applications, and we will continue to supply components that support the growth of the automotive industry.



Kyocera's Peltier module
(width 40 mm x depth 40 mm x height 2.17 mm)

About Peltier Modules

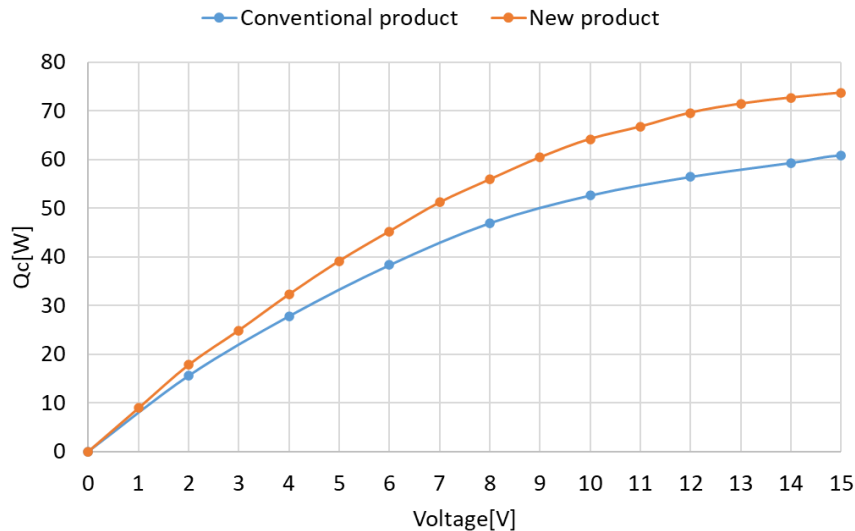
A Peltier module is an energy conversion device with semiconductor elements sandwiched between copper substrates. When electricity passes through, one side of the substrate absorbs heat (cooling), while the other side releases heat (heating). This allows for rapid changes in surface temperature between heating and cooling, as well as the ability to adjust or maintain a specific temperature.

¹ Maximum heat absorption (Q_{cmax}) refers to the amount of heat absorbed by the Peltier module when operated at maximum current. It is defined as the temperature difference between both ends of the thermoelectric semiconductor being 0 °C.

Features of Kyocera's Peltier module

1. High heat absorption

Kyocera's Peltier modules stand out due to their unique element technology (single crystal growth technology), which enables high heat absorption. Advances in this technology enable the maximum heat absorption capacity¹ to rise 21% compared to Kyocera's conventional products. Our new Peltier module can absorb heat more efficiently, thereby enhancing cooling performance.



Graph: Comparison of heat absorption between conventional and new products

2. High responsiveness

Faster heating and cooling, in combination with a copper plate that provides high thermal conductivity, allow more rapid temperature-control response.

3. High reliability

At Kyocera, we prioritize the reliability of our Peltier modules. We coat the element sides with resin to protect them from corrosion due to condensation. Moreover, the entire process, from development to manufacturing and shipping, is handled at our own Japan-based facilities, guaranteeing the highest quality control standards and instilling confidence in our customers.

4. Customizable

Our Peltier module is highly customizable with temperature-sensing thermistors and/or heat dissipation fins. We can also accommodate size adjustments to match the customer's application and casing requirements, providing a versatile solution for a wide range of automotive and other temperature control needs.



Kyocera's Peltier module product page:

<https://global.kyocera.com/prdct/ecd/peltier/index.html>

Download the catalog here:

<https://contact.kyocera.co.jp/inquiry/gl/ecdcatalog/input.html>

For more information on Kyocera: uk.kyocera.com

About Kyocera

Kyocera has been successful in Europe for over 50 years. From its European headquarters in Esslingen am Neckar, KYOCERA Europe GmbH operates 26 sites including manufacturing facilities, with products ranging from fine ceramics, electronics, automotive, semiconductor and optical components to industrial tools, LCDs, touch solutions, industrial printing components, solar systems and consumer goods such as kitchen and office products.

KYOCERA Europe GmbH is a company of the KYOCERA Corporation headquartered in Kyoto/Japan, a world leader in semiconductor, industrial and automotive components as well as electronic components, printing and multifunction systems, and communications technology. The technology group is one of the world's most experienced manufacturers of smart energy systems, with more than 45 years of industry expertise. The Kyocera Group comprises 292 subsidiaries (31 March 2024). In England, Kyocera has a subsidiary in Frimley, KYOCERA Fineceramics Ltd. With around 79,200 employees, Kyocera generated net annual sales of around EUR 12.29 billion in the 2023/2024 fiscal year.

Kyocera is ranked 672 on Forbes magazine's 'Global 2000' list for 2023, and ranked as 'The 100 Most Sustainably Managed Companies in the World' according to the Wall Street Journal. For the second year in a row, Kyocera qualified for the Dow Jones Sustainability Index (Asia-Pacific). As well, Kyocera receives a Gold rating on EcoVadis Sustainability Survey for the second consecutive year and was acknowledged as a 'Top 100 Global Innovator 2023', being one of the world's leading innovators, for the eighth time by Clarivate.

The company also takes an active interest in cultural affairs. The Kyoto Prize, a prominent international award, is presented each year by the Inamori Foundation — established by Kyocera founder Dr Kazuo Inamori — to individuals worldwide who have contributed significantly to the scientific, cultural, and spiritual betterment of humankind (equivalent to approximately €596,500 per prize category).

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