

Kyoto Semiconductor Achieves the Industry's Smallest-in-Class Photodetector with a Broad Responsivity Range of 400 to 1,700nm

KP-2 Dual Wavelength Surface Mount Type Photodiode KPMC29 Developed Using Same Optical Axis for Optical Measurements

TOKYO-(Business Wire)-Kyoto Semiconductor Co., Ltd., with Tsuneo Takahashi as President & CEO and headquartered in Fushimi Ward, Kyoto, has led the optics industry for device solutions using world-class technologies and Japanese-level quality and attention to detail since its founding 40 years ago. Kyoto Semiconductor has developed the industry's smallest-in-class surface mount type KP-2 dual wavelength photodiode KPMC29 (hereinafter referred as "two-tone PD"), which uses silicon and indium gallium arsenide photodiodes sharing the same optical axis and has a wide responsivity range of 400-1,700nm.

The two-tone PD, with a small form factor and wide range of response, has a volume ratio of 1/8 compared to the company's existing two-tone PD. It is expected to be used in the medical and healthcare fields for applications such as biological monitoring, pulse oximeters, activity trackers, and wearable devices. In addition, since it is possible to independently produce and measure the ratio between photocurrent signals from the silicon and indium gallium arsenide photodetectors, the two-tone PD can be used in applications such as radiation thermometers that measure the temperature of an object without having any direct contact with it.

Spectral analysis, a technology used increasingly in a wide range of fields, such as medical, industrial, and security, identifies the type and physical properties of an object by radiating light on it, and then measuring the light reflected from the object or the light transmitted through the object without directing contacting the object. In spectral analysis, it is important that the light source has multiple wavelengths (multi-colored source) that covers various measurement items, and that the element receiving the light from the light source is sensitive to a wide wavelength range. In addition, form factors that are smaller than the existing leading products are necessary for digital products worn on the human body such as wearables and other medical devices. Kyoto Semiconductor is meeting this demand with its new line of products.

Product Characteristics:

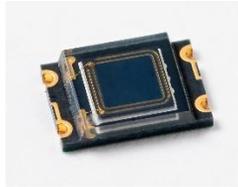
1. A wider range of wavelength responsivity (400-1,700nm). This is achieved by stacking a silicon photodetector, which is sensitive to shorter wavelengths, on top of an indium gallium arsenide photodetector, which is sensitive to longer wavelengths, along the same optical axis.

2. A compact surface-mountable package is the industry's smallest-in-class photodetector. The KP-2 two-tone PD achieves this distinction by housing the indium gallium arsenide photoreceptor inside the concave recesses of the substrate side of the light receiving silicon photoreceptor, reducing the package height as much as possible. This makes it possible to achieve a volume ratio of 1/8 compared to the company's existing two-tone PD product. (Patents are pending.)

See the following for more information. <https://www.kyosemi.co.jp/en/lp/kpmc29/>

Samples will be available from August 31, 2020.

Mass production orders will begin on April 1, 2021.



Kyoto Semiconductor KP-2 Two-tone Photodiode KPMC29

Kyoto Semiconductor

Kyoto Semiconductor was established in 1980 in Kyoto as a dedicated manufacturer of optical semiconductors. The semiconductors manufactured offer superlative performance and precision, suited for use in optical transmission. They are manufactured end-to-end, including pre- and post-processing, and together with Kyoto Semiconductor's unique packaging technology, at our location in Japan and made available to customers around the world. Kyoto Semiconductor leads the industry with world-standard technologies for optical device solutions based on Japanese quality and attention to production detail.

Company Website: <https://www.kyosemi.co.jp/>

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