News Release

January 15, 2025

Nippon Electric Glass Co., Ltd.

Development of GC Core™—

Glass-Ceramic Core Substrate with a Large Panel Size of 515 × 510 mm

—A larger substrate size will greatly help improve productivity of next-generation semiconductor packages—

Nippon Electric Glass Co., Ltd. (Head Office: Otsu, Shiga, Japan; President: Akira Kishimoto) has developed the glass-ceramic core substrate GC Core™, with a large panel size of 515 × 510 mm for next-generation semiconductor packages that require larger substrates.

GC Core™ (515 mm × 510 mm × 1.0 mm thick) developed by Nippon Electric Glass

■ Development background

In recent years, with the growing demand for data centers and the spread of generative AI, there has been a demand for even higher performance in the semiconductors used in these applications. To meet this demand, chiplets are needed to fit multiple chips into a single package, which requires a larger substrate. Additionally, as semiconductor performance improves, the chips mounted on substrates continue to grow larger. To more efficiently arrange these large chips, larger substrates are required.

In response to these challenges, in June of last year, the company developed a GC Core™ (300 mm square) substrate, which uses a composite of glass powder and ceramic powder, and has been proposing it to semiconductor manufacturers. The GC Core™ is economical because it can be drilled quickly and crack-free using commonly used CO_2 laser processing machines and is expected to reduce mass-production costs.

The company has recently succeeded in developing a GC Core™ substrate with a large panel size of 515 × 510 mm, which is largely used in semiconductor manufacturing processes. This will enable semiconductor manufacturers to use the equipment they currently use and reduce capital investment, marking a major step forward toward mass production of next-generation semiconductor packages.

The large-panel-size GC Core™ will be exhibited at the 39th NEPCON JAPAN, which will be held at Tokyo Big Sight from January 22.

Exhibition name: 39th NEPCON JAPAN
Period: Wednesday, January 22 to Friday, January 24, 2025
Venue: Tokyo Big Sight
Booth: E28-14
Exhibition invitation ticket available free of charge at:
https://www.nepconjapan.jp/tokyo/ja-jp.html#/

■ Inorganic core substrate product page

https://www.neg.co.jp/products/inorganic-core-substrate/index.html

[Related Release]

Started Development of Glass Core Substrates Compatible with CO_2 Laser Processing (Dec 4, 2024)
https://www.neg.co.jp/news/20241204.html
Joint Development Agreement Signed with Via Mechanics (Nov 19, 2024)
https://www.neg.co.jp/news/20240605-7549_1.html
Development of GC Core™— Glass-Ceramics Core (Jun 5, 2024)
https://www.neg.co.jp/news/20240605.html

[Company Profile]

Nippon Electric Glass Co., Ltd. is a world-class specialty glass manufacturer headquartered in Otsu City, Shiga Prefecture. Special glass that creates novel functionality is transformed into a variety of products, such as sheets, tubes, threads, and powder, and is used in a wide range of fields, including

semiconductors, displays, automobiles, electronic devices, medical care, and energy. The special glass developed using the technology and track record that we have honed over our 70-year history is highly regarded in a wide range of fields, from everyday life to cutting-edge industries.

Company name: Nippon Electric Glass Co., Ltd.

Representative: Akira Kishimoto, President

Head office location: 7-1 Seiran 2-chome, Otsu, Shiga 520-8639, Japan

Founded: December 1, 1949

Business details: Manufacture and sale of special glass products and fabrication and sale of glass manufacturing machinery

URL:https://www.neg.co.jp/

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