
The "SLB Series" Small Lithium Titanate Rechargeable Batteries, which realizes rapid charging and discharging, long life, low-temperature characteristics, and high safety, has been expanded to include High-Temperature durable product (80°C).

NICHICON CORPORATION has developed a high-temperature resistant version of its "SLB Series" small lithium titanate oxide secondary battery, which is safe, long-lasting, and capable of rapid charging and discharging, and can be used at temperatures ranging from -30°C to 80°C. The company will be showcasing this product at CES 2025, the world's largest electronics exhibition, to be held in Las Vegas, USA from January 7th to 10th (North Hall, Booth #10471).

Overview and Development Background

Since its launch in 2019, the "SLB series" developed by NICHICON has been a best-selling product in the market, with a cumulative shipment of over 90 million units, mainly for information and communication devices.

In recent years, as IoT and big data have attracted attention, the need for secondary batteries as an important element supporting them is increasing. IoT devices are composed of sensors and communication modules, and a stable power supply is required to operate them. Rechargeable secondary batteries are ideal as a stable power source, but considering the continuity of data collection and maintenance costs of IoT devices, the battery's life characteristics are important. As the environment in which data is to be collected expands, batteries are required to have a wide range of temperature durability from extremely low temperatures to high temperatures. NICHICON developed this product with the aim of meeting more market needs by adding high temperature durability to the excellent performance of the "SLB series".

Features

In this development, NICHICON analyzed the degradation mechanism of conventional products in high-temperature environments and optimized the electrode foil and electrolyte specifications to develop a product with improved high-temperature durability. In a charge-discharge cycle test (20C rate, 100% depth of discharge) in an 80°C environment, NICHICON succeeded in increasing the number of cycles required to reach 80% capacity retention to approximately 19,000 times. This product is planned to expand the "SLB series" as a high-temperature durable product compatible with an operating temperature range of -30°C to 80°C. The size lineup will start with a product with a diameter of 8 mm, height of 11.5 mm, and capacity of 10 mAh, and other sizes and capacities are planned to be released in the future.

This product has high temperature durability that can meet the market needs for use in high-temperature environments required by IoT devices, industrial equipment, and social infrastructure markets that are used outdoors. At room temperature they will have long lives making them ideal for maintenance free devices and help solve social issues.

Main Specification

		Conventional product	High-Temperature durable product
Operating temperature range		-30 ~ 60 °C	-30 ~ 80 °C
Nominal voltage		2.4 V	2.1 V
Voltage Range	Maximum charging voltage	2.8 V	2.5 V
	Discharge cut-off voltage	1.8 V	1.5 V
Maximum charge/discharge current (C-rate)		280 mA (20C)	200 mA (20C)
Nominal Capacity		14 mAh	10 mAh
Dimensions Diameter x Height		8 mm × 11.5 mm	8 mm × 11.5 mm
Weight		1.2 g	1.3 g

- Terminal shape : Radial Lead
- Samples : From January 2025
- Mass production launch : From April 2025
- Production plant : NICHICON (OHNO) CORPORATION FUKUI FACTORY
4-24-15 Technology Center, Tsuchifugo, Ohno-shi, Fukui Pref.,
912-0805 Japan
(ISO 9001, IATF 16949, and ISO 14001 certified)

Product Appearance



SLB series of Small Lithium Titanate Rechargeable Batteries

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