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NICHICON Develops SLB Series of Small Lithium-ion Rechargeable Batteries ideal for IoT and Wearable Technologies

NICHICON CORPORATION has developed the SLB Series of small lithium-ion rechargeable batteries (In conjunction with) Toshiba Infrastructure Systems & Solutions Corporation SCiB™ technologies.
These products will be displayed at CEATEC JAPAN 2018, held at Makuhari Messe from Tuesday, October 16, to Friday, October 19.

Overview and Development Background

In an IoT society where everything is connected to the network, everything will require a power supply, and in some cases, power supply wiring and battery replacement may be difficult. Given these circumstances, energy harvesting technologies that convert energy from light, heat, vibration and radio waves into electricity are being developed. Small, long-life rechargeable batteries able to store and repeatedly discharge energy in high frequency cycles are desirable.

Features

The main features of the SLB Series of small lithium-ion rechargeable batteries include:

1) A high rate* of charge/discharge. The batteries are able to charge to approximately 80% in three minutes and discharge 95% of the charge in three minutes.
2) The batteries are safe to charge even in low temperature environments of -30°C as lithium does not deposit onto the negative electrode.
3) Even in the event of a forced internal short circuit, the possibility of explosion or ignition is low, making the batteries safe.
4) High capacity retention rate of 80% or more even after 25,000 charge/discharge cycles at a rate of 10C.

These products are able to power environmental sensors for monitoring temperature, humidity, illuminance and other data for a long time when combined with a power supply IC. Utilizing the high rate characteristic of 20C (max), these batteries can be charged in a short time in combination with a step-up/step-down charging IC.

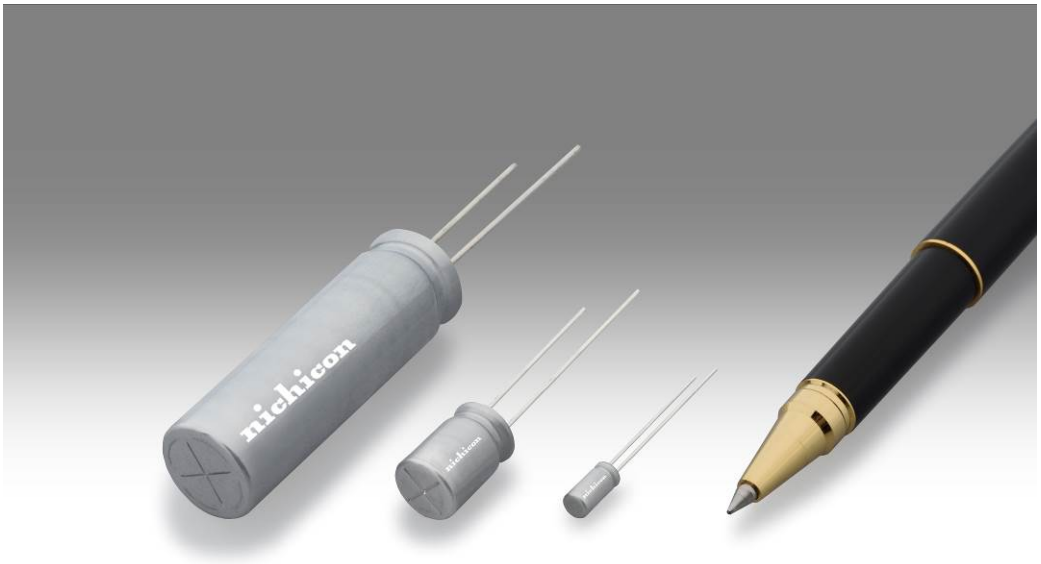
Utilizing its various features, NICHICON expects these products to contribute to the spread of IoT technologies and the adoption of wearables and other personal devices.

Main Specifications

- Average operating voltage: 2.4V
- Maximum charging voltage: 2.8 V
- Discharge cutoff voltage: 1.8 V
- Rated capacity: 0.35 to 150 mAh
- Category temperature range: -30 to + 60°C
- Maximum current: 20C (continuous)
- Product dimensions: ϕ 3.7 to ϕ 12.5 × 40L (mm) (3 sizes)
- Life: 25,000 hour lifecycle
- Terminal shape: Lead type
- Samples: From January 2019
- Mass production: From June 2019
  [Planned production volume: 1 million units/month]
- Production plant: NICHICON (OHNO) CORPORATION, Site II Factory
  4-24-5 Tsuchifugo, Ono, Fukui Prefecture

*Terminology Explanation

The current rate when charging/discharging batter capacity in one hour is defined as 1C. The ability to charge/discharge at a rate higher than 1C is referred to as high-rate high-speed charge/discharge performance.



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ideal for IoT and Wearable Technologies.