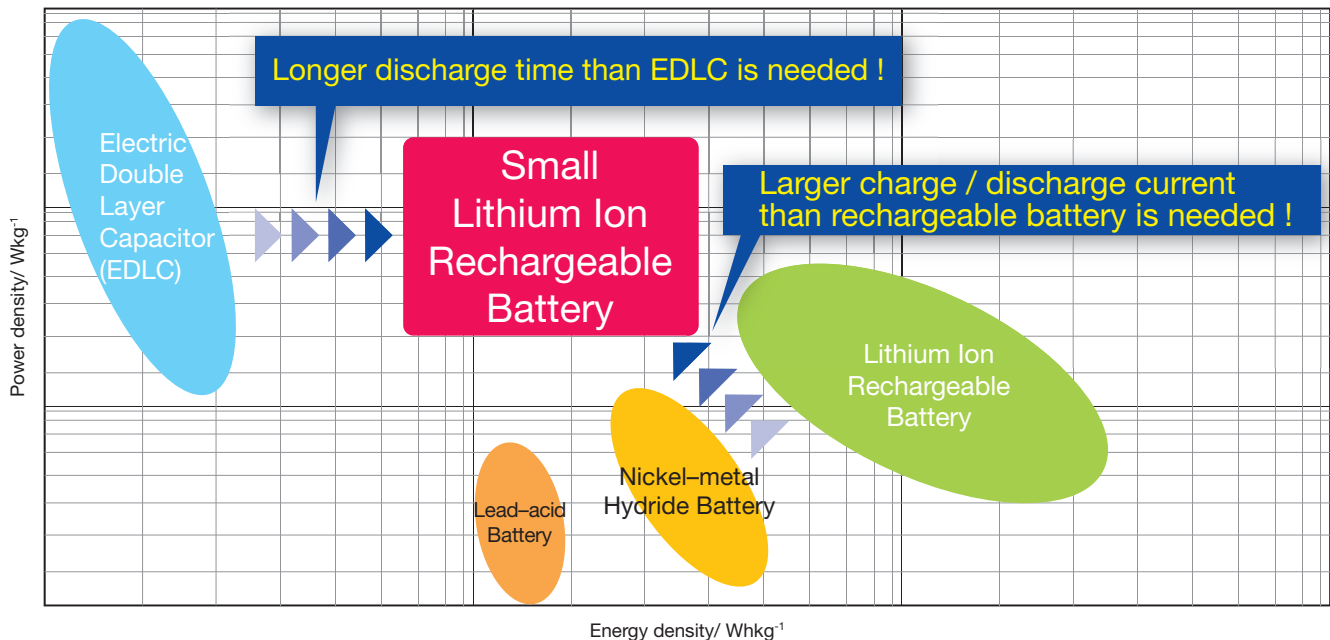


Development of Small Lithium Ion Rechargeable Battery Suitable for IoT and Wearable Applications

We developed a Small Lithium Ion Rechargeable Battery that achieves both high Power density and Energy density by using SCiB™ technology of Toshiba Infrastructure Systems Corporation.

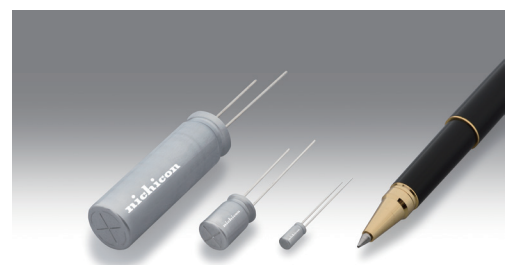
Development Background

TENTATIVE



Product Features

- Rapid charging/discharging is possible: Support for 20 C rate rapid charging/discharging
- Low temperature performance: Possible to charge and discharge even in cold regions (-30°C)
- Safety: Low explosion and ignition possibility even if an internal short circuit is forcibly generated
- Long life: Maintains a capacity of 80% or more after 25,000 charging/discharging cycles
 [Conditions] Temperature:25°C / Voltage range:1.8 to 2.8V
 Charging/discharging rate:10 C / Rest:0sec



Small Lithium Ion Rechargeable Battery

Specifications

Specification	
Rated voltage	2.4V
Max. charge voltage (Under continuous charge)	2.8V
Discharge cutoff voltage (Under continuous charge)	1.8V
Temperature range	-30 to 60°C

Size (Lead type)	Capacity (mAh)	Energy density (Wh/L)	Weight (g)
φ 3×7L	0.35	17	0.2
φ 8×11.5L	14	58	1.5
φ 12.5×40L	150	73	9.2

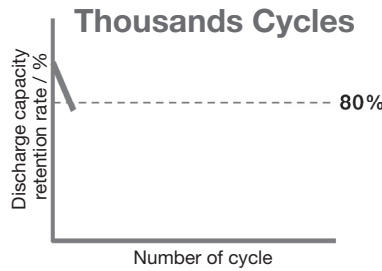
※ φ 4×25.5L(5mAh), φ 8×20L(25mAh), φ 10×31.5L(60mAh) under consideration.

Features of Small Lithium Ion Rechargeable Battery

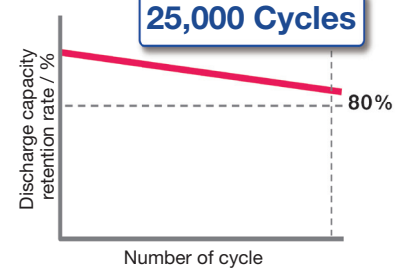
1 Long life

Maintains a capacity of at least 80% after 25,000 charging/discharging cycles

Lithium ion rechargeable battery



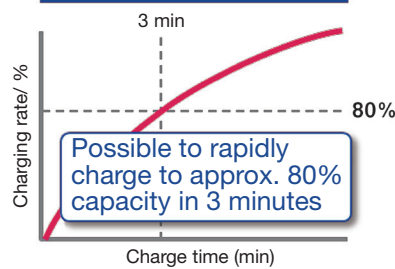
New electric storage device



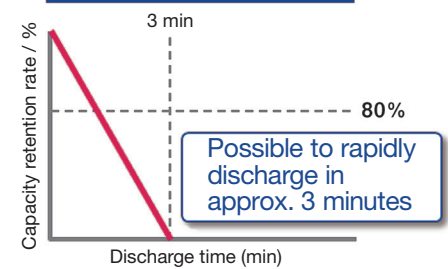
2 Rapid charge/discharge

High input/output density approaching electric double layer capacitors (EDLCs)

20C Charging



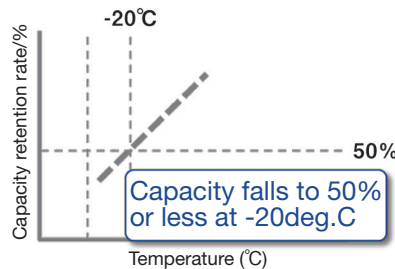
20C Discharging



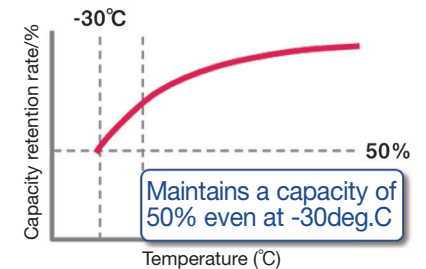
3 Low temperatures

Possible to use in cold regions (-30deg.C)

Lithium ion rechargeable battery



New electric storage device



4 Safety

Low possibility of explosion or ignition even when used under harsh conditions

- We have confirmed these batteries are safe with no explosions or ignition in crush, nail insertion, blunt nail, external short circuit, overcharge and forced discharge tests.

Low risk of rupture or ignition and high safety.



Safe

Safety Test

Crushing by pressure



Nail penetration



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SAFETY PRECAUTIONS

- Please use this product in accordance with NICHICON's product specifications. If the customer uses this product in a manner other than indicated in the delivery specifications, NICHICON will not assume responsibility in the event of failure.

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