SCiB™ uses lithium titanium oxide in its anode to achieve excellent characteristics.

**Safety**

**Low risk of fire or explosion**

In case of an internal short circuit, the lithium titanium oxide (LTO) in the anode layer of SCiB™ phase transforms to being highly resistive, thus minimizing risk of drastic current flow that may lead to rupture, fire, or other accidents.

**Long life**

**Cycle life of 20,000 times or more**

The capacity remains at 70% or more even after 20,000 times of charging/discharging. SCiB™ also has small degree of deterioration even with float charging*, making it usable for applications that keep constant voltage such as backup power supply.

*Float charging: Float charging means continuous constant voltage charging.

**Rapid charging**

**Rapidly charges to about 80% of the capacity in 6 minutes**

The favorable anode charging characteristics provide rapid charging to about 80% of the capacity in 6 minutes.

**Performance at low temperature**

**Usable even at -30°C**

Since there is almost no lithium metal deposition even at low temperature usage, repeated charging and discharging is possible at -30°C.

**High input/output**

**Large current for both input and output**

SCiB™ can accept large current input and output. Thus, it can store large regenerative energy generated during deceleration of railways and automobiles, and can supply large current necessary for starting the motor.

**Wide effective SOC* range**

**Available SOC range of 0 to 100%**

SCiB™ exhibits excellent input/output characteristics over a wide SOC* range. This makes it possible to reduce the nominal battery capacity or amount of batteries necessary for a system, as compared to other batteries that have a narrower SOC range.

* SOC: State of Charge

The indicated data were measured under specific conditions. The performance varies according to the customer’s condition for use.
Widespread Revolution in Energy Usage

- Automobile, ship, railway, etc.
- Electricity stabilization, Energy conservation
- Industrial machine/device
- Facilities/Equipment
- Battery installation
- Backup power source

Facilities/Equipment: Factory, Forklift, Elevator, Bicycle/car parking fare machine, Signal light, Station, Street light, Factory, AGV

- Battery system for the Minami-soma Substation
- Battery system for adjustment of electricity demand and supply
- Power-outage continuous operation function
- Automated guided vehicle (AGV)

- Mild hybrid
- Rapid-charge-type electric bus
- Hybrid-type tram bus
- Battery-powered boat
- Battery-powered boat
- Power supply device for running in emergency
- Regenerative battery device
- Solar power light

- TOSHIBA INFRASTRUCTURE SYSTEM & SOLUTIONS CORPORATION
- Willey Battery USBAC, LLC
- L-Kougen Co., Ltd.
- TOSHIBA ELEVATOR AND BUILDING SYSTEMS CORPORATION
- TOSHIBA INFRASTRUCTURE SYSTEMS & SOLUTIONS CORPORATION

- This battery has been adopted for low-fuel-consumption technologies that effectively use regenerative energy at deceleration.
- This battery has been adopted for rapid-charge-type electric buses in operation in California and other 11 states in the United States.
- This battery has been adopted for hybrid-type tram buses in operation in cities in Europe.
- This battery has been adopted for measures to balance the demand and supply due to diffusion of recyclable energy.
- This battery has been adopted for large battery systems for adjustment of electricity demand and supply in the United States.
- This battery has been adopted for “TOSMOVE NEO” that moves an elevator continuously in the case of power outage.
- This battery has been adopted for automated guided vehicles (AGVs) in the production line in Kashiwazaki Factory of TOSHIBA INFRASTRUCTURE SYSTEMS & SOLUTIONS CORPORATION.
### SCiB™ cell

<table>
<thead>
<tr>
<th>Product name</th>
<th>Nominal capacity</th>
<th>Nominal voltage</th>
<th>Voltage range</th>
<th>Voltage measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>23Ah cell</td>
<td>23Ah</td>
<td>2.3V</td>
<td>2.0 to 2.7V</td>
<td>±0.1V</td>
</tr>
<tr>
<td>20Ah cell</td>
<td>20Ah</td>
<td>2.3V</td>
<td>2.0 to 2.7V</td>
<td>±0.1V</td>
</tr>
</tbody>
</table>

### SCiB™ module

<table>
<thead>
<tr>
<th>Product name</th>
<th>Nominal capacity</th>
<th>Nominal voltage</th>
<th>Voltage range</th>
<th>Voltage measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type3-22</td>
<td>45Ah</td>
<td>DC27.0V</td>
<td>DC 5.5 to 34.5V</td>
<td>±0.1V</td>
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<tr>
<td>Type3-20</td>
<td>45Ah</td>
<td>DC27.0V</td>
<td>DC 5.5 to 34.5V</td>
<td>±0.1V</td>
</tr>
</tbody>
</table>

### SCiB™ system

<table>
<thead>
<tr>
<th>Product name</th>
<th>Lithium-ion battery systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPCS-L100DA</td>
<td></td>
</tr>
<tr>
<td>BPM01-20KT1</td>
<td></td>
</tr>
</tbody>
</table>

### Additional Information

- The SCiB™ rechargeable cells can be categorized into two types: high energy and high power. The high energy type is used when a large capacity of electric automobiles, while the high power type is used when charge/discharge of a large current is required in a short time such as use of regenerative energy.
- SCiB™ rechargeable cells can be categorized into two types: high energy and high power.
- The high energy type is used when a large capacity is required for electric automobiles, whereas the high power type is used when charge/discharge of a large current is required in a short time such as use of regenerative energy.
- The product name and nominal capacity are provided for each type. Nominal voltages are also listed for reference.
- Weight and dimensions are included for product specifications.
- Battery capacity is noted as single-phase system and three-phase system for different applications.
- Additional functions such as cell voltage measurement, module temperature measurement, and cell balancing communication (CAN) are listed in the Remarks section.
- The battery system is designed for use in electricity, backup, energy saving, and other applications.
From Inquiry to Delivery

SCiB™ can be used in a wide range of applications, such as automotive, railway, industrial equipment, power equipment and power supply solutions for buildings and facilities. To customers who are considering using the SCiB™ for mass production, please feel free to contact us.

Manufacturing and R&D center: Toshiba Kashiwazaki Factory

Kashiwazaki Factory consistently undertakes the development, manufacturing, and quality control of SCiB™. It has a flexible production system that allows it to respond to demand changes. This environment-friendly factory also flexibly controls the clean and dry areas, and minimizes energy consumption required for sustainability. Moreover, the factory is equipped with a production quality system that meets TS16949, enabling it to supply high-quality, stable products.

**Safety precautions**

- Do not use this product for facilities in which there is a risk to human life or a disruption to public functionality if the product fails or malfunctions (nuclear power generator controls, aerospace applications, traffic equipment, life support equipment, safety equipment, and others).
- This product is produced under strict quality controls, however it may malfunction depending on the operating environment and conditions. Please consider countermeasure design (redundancies, fail-safe measures, etc.) if using this product in facilities in which failure of the product would be expected to cause a great loss or accident.
- The operating environment must be within the range of specifications noted in the catalog and instruction manuals. Using the product outside the specified range may cause injury, a re, or some other accident.
- Toshiba is not responsible for any losses related to malfunctions or abnormalities in equipment or devices connected to the product when the product fails or malfunctions, including losses from other secondary repercussions.
- The technical information in this document is for the purpose of explaining the typical operations and applications of the product, but not for granting any license or guarantee in regard to intellectual property rights, or any other rights, belonging to third parties or Toshiba.
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For detailed information of this product, please visit our Website.

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