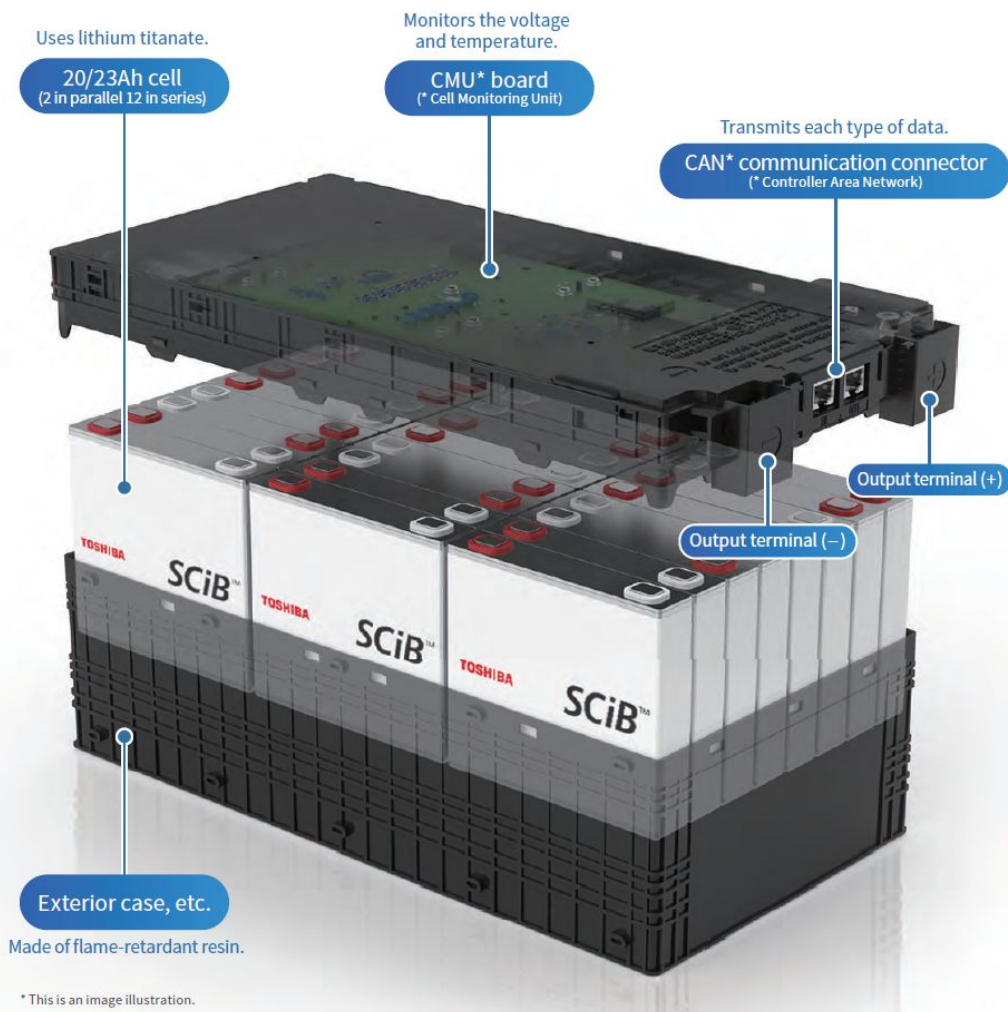


RECHARGEABLE BATTERY

Based on LTO cells

Toshiba has introduced the SCiB battery cells coming with CAN interfaces to provide status data to the battery management unit.



The SCiB cells are controlled and monitored by the CMU board, which provides CAN connectivity (Source: Toshiba)

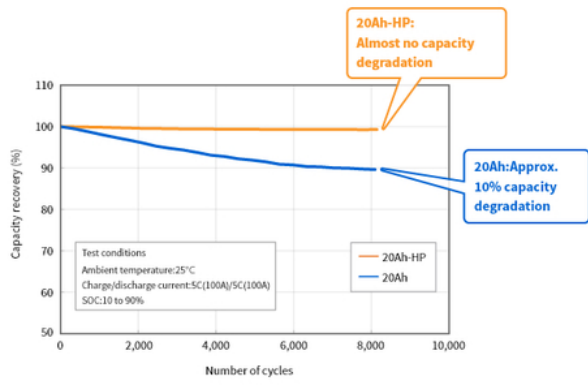
Electrical-powered vehicles are on the agenda. Toshiba offers the SCiB battery cell, which are based on LTO (lithium titanium oxide) cells. Beginning of this year, the Japanese company has expanded its product series with the 20-Ah-HP rechargeable battery cell. The market needs batteries that deliver both high-energy and high-power characteristics, but until now this has required a trade-off for rechargeable lithium-ion batteries. In an EV (electrical vehicle), for example, a high-energy battery allows the vehicle to drive further on a single charge – but it lowers power input and output and extends charge times. Toshiba drew on its knowhow in current high-energy and high-power products to develop a new cell that combines the advantages of both.

The SCiB cells are managed by a controller featuring CAN connectivity. Each cell is monitored and sends via its CAN interface voltage and temperature data. This CAN communication is proprietary and not yet standardized.

The cell is suitable for heavy-load applications, in which high-power inputs and outputs are essential. It should also satisfy applications, in which battery cells must suppress heat and operate continuously, such as rapid charging of commercial vehicles, regenerative power systems for rolling stock, and industrial equipment. The cell has the same size as Toshiba's legacy 20-Ah product, allowing current customers to upgrade to the improved input and output power with the same module pack. The recent cells deliver a 1,7-time higher input and a 1,6-time higher output. Additionally, they achieve a longer life than the legacy cells by suppressing heat during continuous charging and discharging, due to the lower internal resistance.

Toshiba expects to see the SCiB cell deployed in automobiles, industrial equipment, and storage battery systems. Some examples include drive power supply and emergency power supply for railways. It can be also applied to regenerative power supply for harbor cranes, electric ferries, hybrid buses, trucks, hybrid electric vehicles (HEVs) and plug-in HEVs (PHEVs) as alternatives to lead-acid batteries and storage battery systems.

The cells feature a nominal 2,3-V input-voltage, 1900-W input-power, and 1900-W output-power. The weight is 545 g and the dimensions are 116 mm x 22 mm x 106 mm.



Under the shown test conditions, the cell maintained almost 100 % capacity after 8000 charge/discharge cycles (Source: Toshiba)