System backup and Hotswap for electric equipment

1. Overview
If the power supply to an electronic device is interrupted due to a momentary power failure, battery replacement, etc., data will be lost and it will take time to restart. Also, if the power supply is suddenly cut off, the system may break down, and primary batteries, secondary batteries, and Supercapacitors are used as backup power supplies when power supply is interrupted.

2. Applications
The CT series have superior performance as an auxiliary power supply for system backup, compared with Supercapacitors and general lithium-ion secondary batteries. A typical lithium-ion secondary battery has the drawbacks that it deteriorates rapidly after repeated charging and discharging, and a dedicated charge / discharge control IC and protection IC are required, increasing the number of parts.

Supercapacitors are excellent for applications that supply large currents for short periods of time in the order of milliseconds, but due to their low energy density, they require a large amount of energy for backup and are suitable for applications that require a long time, are not good for small devices. When used in series, a circuit is required to equalize the voltage of each cell in order to prevent deterioration, which results in energy loss and a large number of parts.

On the other hand, the CT series is capable of constant voltage charging and is resistant to over-discharge, so only the voltage applied to the battery needs to be controlled, and a dedicated charge / discharge control IC is not required. Also, for backup applications where the number of times charge and discharge is repeated is relatively small, deterioration does not significantly accelerate even if they are connected in series without using a circuit that adjusts the voltage of each cell.

Table 1. Comparison with other storage devices

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<th>Super capacitors</th>
<th>CT series</th>
<th>LIB</th>
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<td>1) Long operation &amp; Downsize</td>
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<td>2) Long life cycles</td>
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<td>3) High output</td>
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<td>4) Simple charge circuit construction</td>
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1) Long operation & Downsize
Compared with Supercapacitors, CT series and LiB can contribute to downsizing the equipment because of tens of times of high energy density.

2) Long charge / discharge cycle life
Compared to general lithium-ion secondary batteries, the CT series is less prone to deterioration due to repeated charging and discharging. The recovery capacity ratio is maintained at 80% or more after repeating constant voltage charging and 5CA (15mA) discharging / charging 5000 times.

3) High output
Although CT series are not comparable to Supercapacitors. CT series can discharge with high output despite CT’s small size.

4) Simple circuit construction
Because CT series can be charged by constant charge, Charge circuit can be only consisted of DC/DC converter or LDO for adjusting the charge voltage.

3. Application
Handy terminal/bar code reader, POS(payment terminal),RTC, specified low power wireless/ISM frequency terminal

4. Product Lineup

5. Support
Please access below Website form or contact form,