Lithium-ion battery monitoring LSI
Analog Front End type ML5239

The ML5239 is an analog front end LSI intended for 16-cell Li-ion secondary battery pack protection system. Multistage connection supports multistage and high voltage Li-ion battery systems. It's power consumption especially in power down mode is very low and total system power consumption is low. In addition, it has external FET driving pins for cell-balancing and cell balancing for each cell is supported.

16-cell support

Multistage connecting function is available

It supports multistage connection. And best for multi-cell and high voltage Li-ion battery systems. Communication speed is 500kHz in 4-stage connection.

High accuracy voltage / temperature measurement

Battery voltage and temperature is measured with internal ADC with high accuracy. Cell voltage measurement accuracy is ±10mV (typ.). Battery monitoring system with low noise effect is implemented.

Low Current consumption

Current consumption in the power-down mode is minimized to around zero to reduce especially the load on the battery during long-term storage.

- Cell voltage measuring state : 1.2mA (Typ.)
- Power-down State : 0.1μA (Typ.)

Short-current detection and protection function

Built-in short-circuit detection and protection function. If short-circuit is detected, ML5238 automatically cut-off charge/discharge FET for system safety.

Self-diagnosis functions

Open/short of Cell voltage measuring pins is detectable.

12bit ADC

Self-Diagnostic function

Automatic ID assignment
- Power-up control
- SPI I/F

Temperature Monitor

Cell Selection & Cell Balancing Drive

- Supply voltage : +10V to +72V
- Operating temperature : -40°C to +85°C
- Package: TQFP64

Application

ESS, energy storage system

UPS, uninterruptible power supply

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