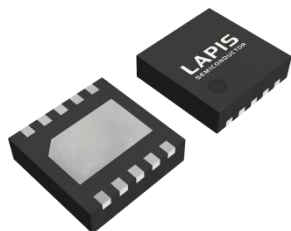# Lithium-ion battery 2nd protection LSI
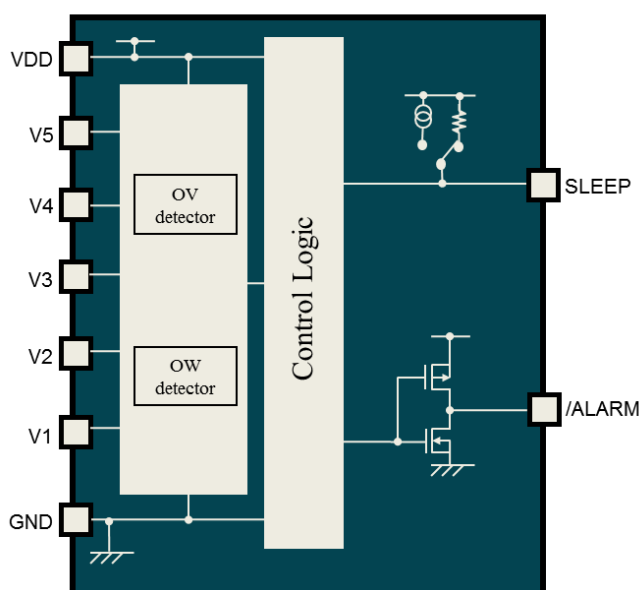# Stand-Alone type **ML5241**

The ML5241 is a stand-alone type 2nd protection LSI intended for 3 to 5-cell lithium-ion secondary battery pack systems.
With the cell-by-cell voltage detection and open-wire detection function, the ML5241 can build high reliable battery pack systems.

Features

- 3,4, 5 cell overvoltage detection
  accuracy : ±25mV   (Vcell=4.225V)
- Open-wire detection
- Alarm output
  CMOS/Nch open-drain /Pch open-drain
  (selectable)
- Sleep function
- Quick test mode
- Low current consumption
  operating   : 1μA (typ.)
  sleep mode : 0. 1μA (typ.)
- Supply voltage : +5V～+25V
- Operating temperature : -20℃～+85℃
- package   : 10 pin-WSON

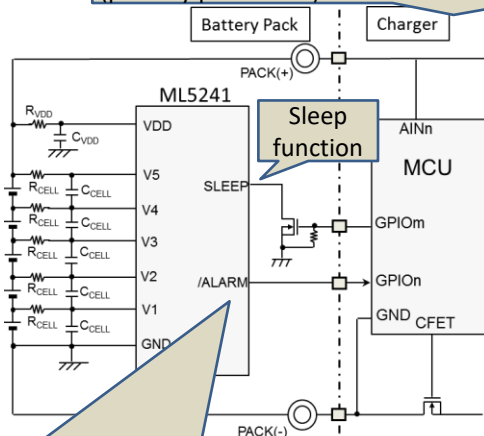## ■ Detecting overvoltage and open-wire of each cell

- Detect the overvoltage of each cell
  The system manages charge/discharge by measuring total voltage . With the ML5241, abnormal voltage detection function (2nd protection) of each cell is added.
- Open-wire detection function can detect the open-wire of every voltage detecting wire, and system safety is more enhanced.

■ Sleep function

- The ML5241 can enter the sleep mode by external input. Current consumption at the time of storage is minimized.

Block Diagram

Connecting the Battery pack and charger

MCU in the charger measure the total voltage of the battery pack and control the FET. (primary protection)

Sleep function

Measure the voltage of each cell and alarm the abnormal overvoltage. Detect the open-wire of each cell voltage wire and alarm it. (2nd protection)

Application

- Power tool
- Garden tool

LAPIS Semiconductor Co.,Ltd.

http://www.lapis-semi.com/en