

Product Preview (PRELIMINARY)

Features

- Analog Front-End (AFE) monitoring
 - Pure digital interface
 - Internal ADC measures cell voltage, die temperature, pack current, and external thermistor
 - Directly supports up to four thermistors (103AT)
- Hardware protection
 - Overcurrent in Discharge (OCD)
 - Short Circuit in Discharge (SCD)
 - Overvoltage (OV)
 - Undervoltage (UV)
 - Secondary protector fault detection
- Additional features
 - Integrated cell balancing FETs
 - Charge, discharge low-side NCH FET drivers
 - Alert interrupt to host microcontroller
 - 5.0-V output voltage regulator
 - No EEPROM programming necessary
 - High supply voltage absolute maximum (up to 108 V)
 - Simple I2C compatible interface (CRC option)
 - Random cell connection tolerant

Typical Applications

- Light electric vehicles (LEV): eBikes, eScooters, pedelecs, and pedal-assist bicycles
- Power tools and garden tools
- Battery backup units (BBUS), energy storage systems (ESS) and uninterruptible power supply (UPS) systems
- Wireless base station backup systems
- 12-V, 18-V, 24-V, 36-V, and 48-V industrial battery packs

Description

The AS76940 device is a robust analog front-end (AFE) device that serves as part of a complete pack monitoring and protection solution for next-generation, high-power systems, such as light electric vehicles, power tools, and uninterruptible power supplies.

It is designed with low power in mind: Sub-blocks within the IC may be enabled or disabled to control the overall chip current consumption.

Also, it works for up to 15-series cells or typical 48-V packs. A variety of battery chemistries may be managed with the AFEs, including Lithium Ion, Lithium iron phosphate, and more. Through I2C, a host controller can use the AS76940 to implement many battery pack management functions, such as monitoring (cell voltages, pack current, pack temperatures), protection (controlling charge/discharge FETs), and balancing. Integrated A/D converters enable a purely digital readout of critical system parameters.

Device information

Package - 9 -15 series cells (40 pin package)

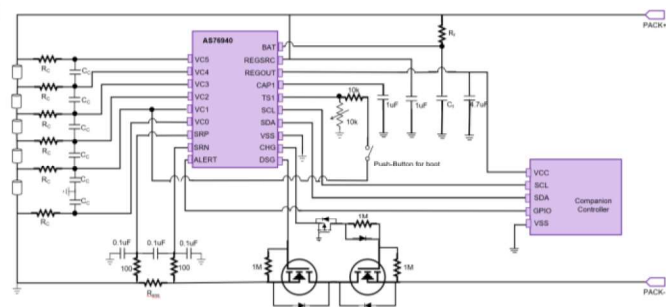


Figure 1 Simplified Schematics of AS76940