TI POWER

Battery Protector, Monitor or Gauge?

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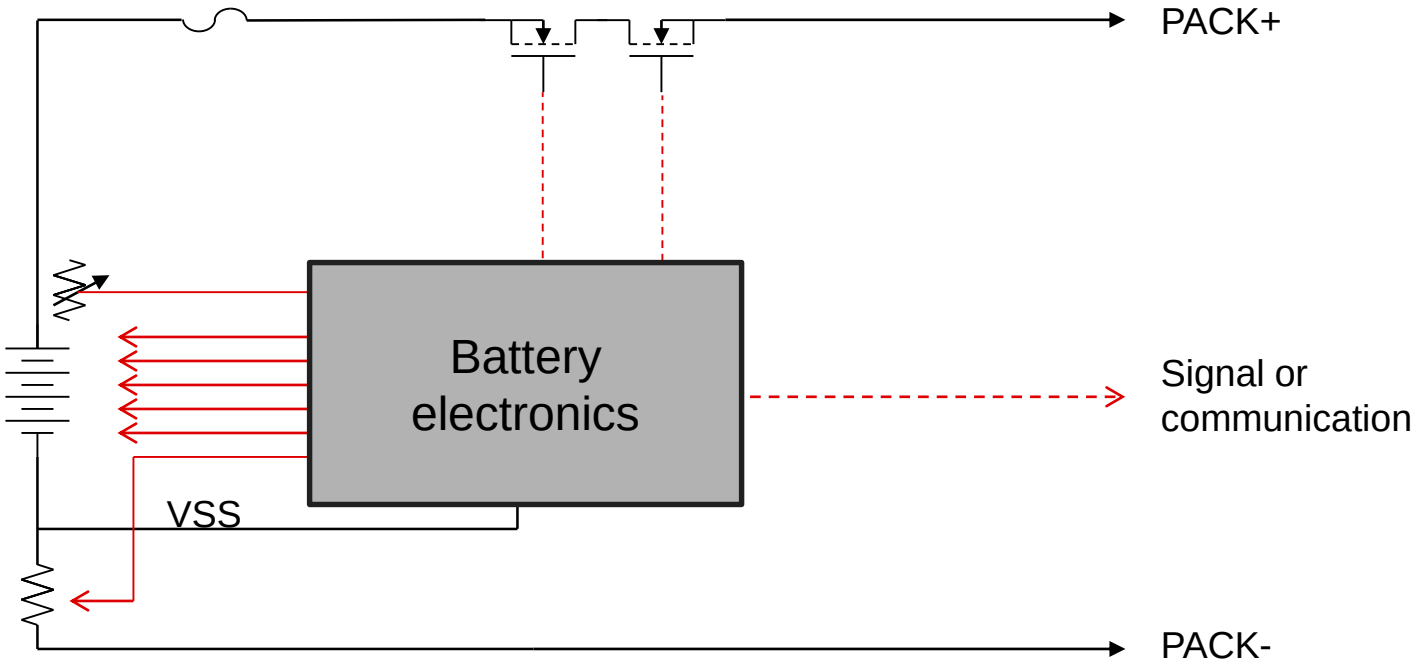
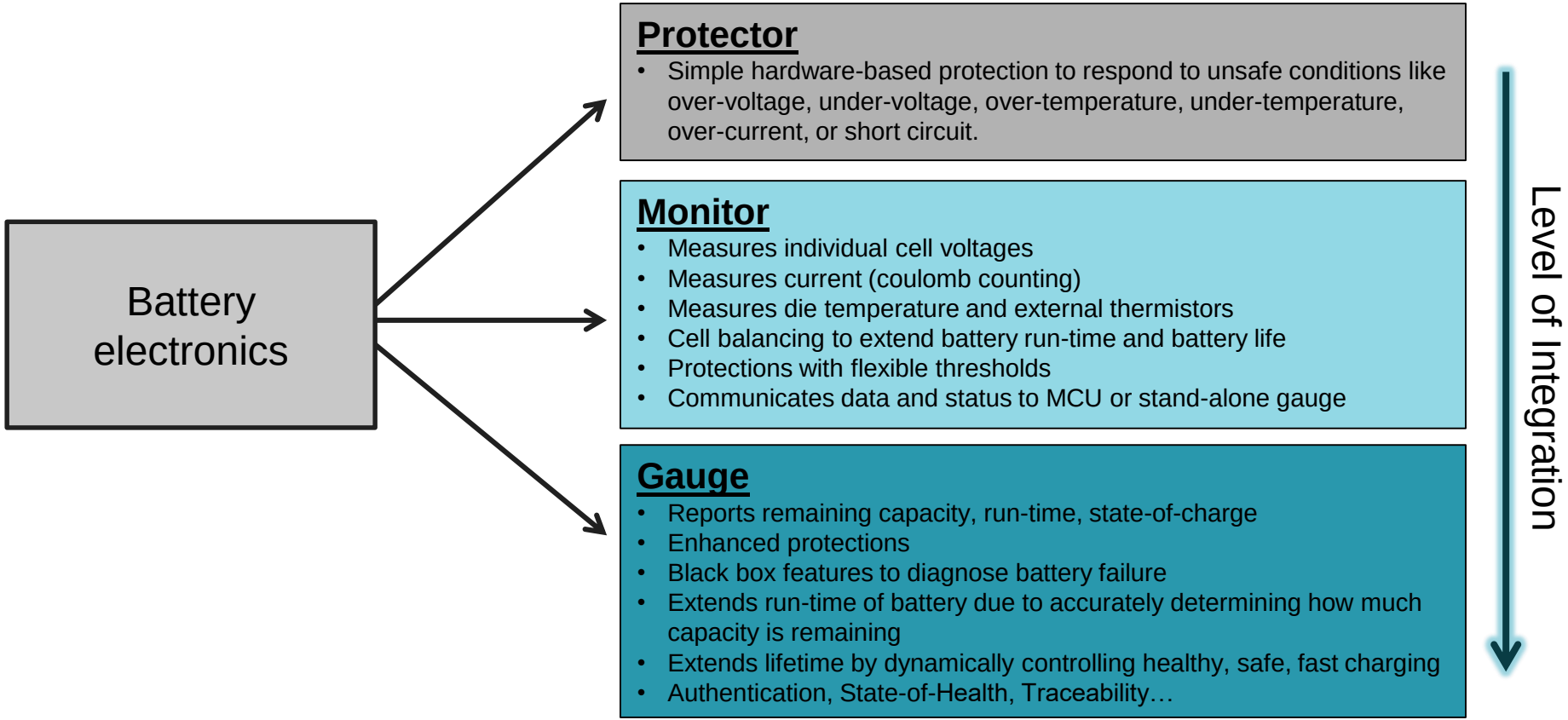
Li-ion battery



Battery Electronics Options



Battery Electronics Options

Protector

- Simple hardware-based protection to respond to unsafe conditions like over-voltage, under-voltage, over-current, over-temperature, under-temperature, over-current, or short circuit.

Lowest complexity

Monitor

- Measures individual cell voltages
- Measures current (coulomb counting)
- Measures die temperature and external thermistors
- Cell balancing to extend battery run-time and battery life
- Protections with flexible thresholds
- Communicates data and status to MCU or stand-alone gauge

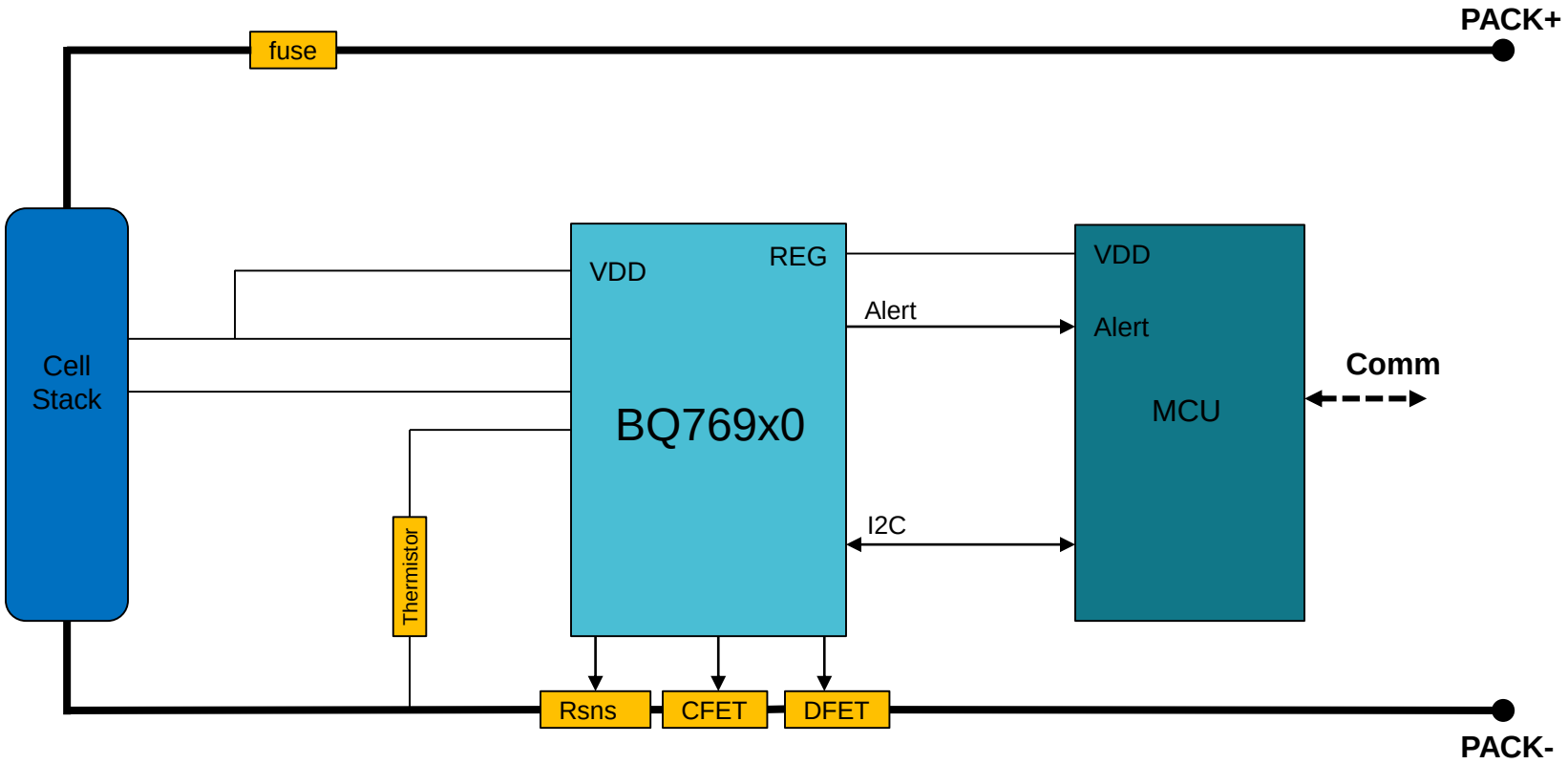
Highest Flexibility

Gauge

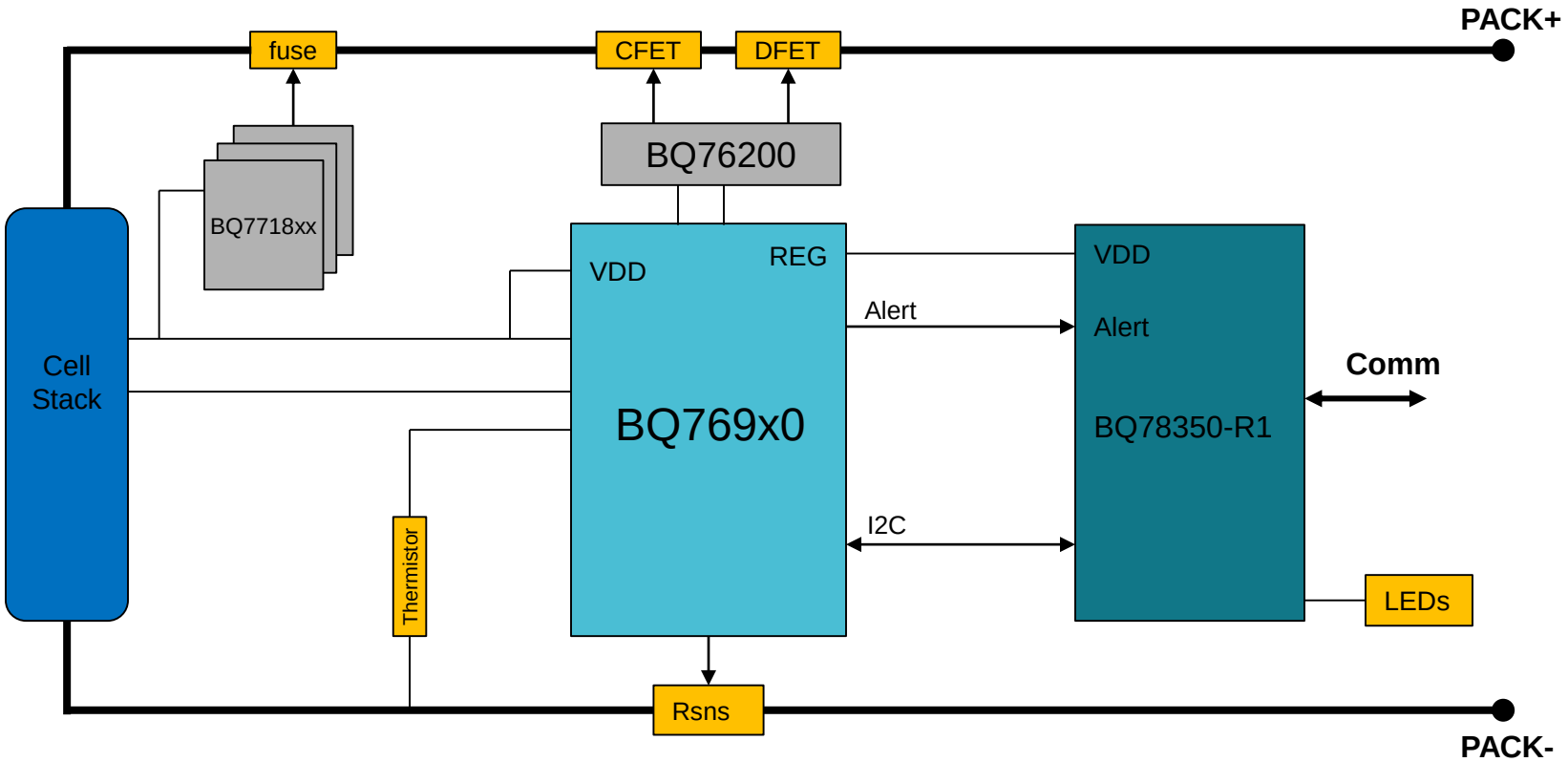
- Reports capacity, run-time, state-of-charge
- Enhanced protections
- Black box features to diagnose battery failure
- Extends run-time of battery due to accurately determining how much capacity is remaining
- Extends lifetime by dynamically controlling healthy, safe, fast charging
- Authentication, State-of-Health, Traceability…

Highest Integration

Example Solution Using BQ769x0 Monitor



Other System Considerations: Secondary Protection, High-Side FETs, Gauging



Links to Additional Information

Battery Protectors

Battery Monitors

Battery Fuel Gauges