DIODES
I N C O R P O R A T E D

New Product
Announcement

AP9234L

High-Accuracy, Single-Chip Solution For 1-Cell Lithium Battery Protection

The AP9234L is a single-chip protection solution designed for 1-cell Li+ rechargeable battery pack applications.

AP9234L incorporates high-accuracy Li+ battery protection chip and a dual N-channel, ultra-low $R_{SS(ON)}$ MOSFET with common drain.

It provides rich battery protection features: overcharge voltage/current, overdischarge voltage/current and load short-circuit.

AP9234L has a built-in fixed delay time to minimize external components.

Highly-accurate detection circuits compensate the internal MOSFET $R_{SS(ON)}$ performance to ensure extremely high overcharge/discharge current limit accuracy at both room and full temperature.

The AP9234L is available in the U-DFN2535-6 package.

The Diodes' Advantage

AP9234L is a high-accuracy single-chip solution for 1-cell Lithium battery protection.

- **High-Voltage CMOS Process, up to 24V (between terminals)**
  Withstands extreme transients/surges voltage from adapters

- **Low Quiescent Current (3µA normal; 0.1µA in power down)**
  Minimizes discharge of battery ensuring longer battery operation

- **High-Accuracy Voltage Detection**
  Accurately and reliably detects overcharge voltage/current, overdischarge voltage/current, or load short-circuit conditions. With compensation circuit integrated and it can ensure highly accurate charge/discharge current limit range under full temperature

- **Built-in Delay Time (+25ºC), Accuracy ±20%**
  Saves external components, lower BOM cost

- **Selectable Power-down Mode(or auto-wake-up mode), 0V Battery Charge Mode, and Overcharge Protection Mode**
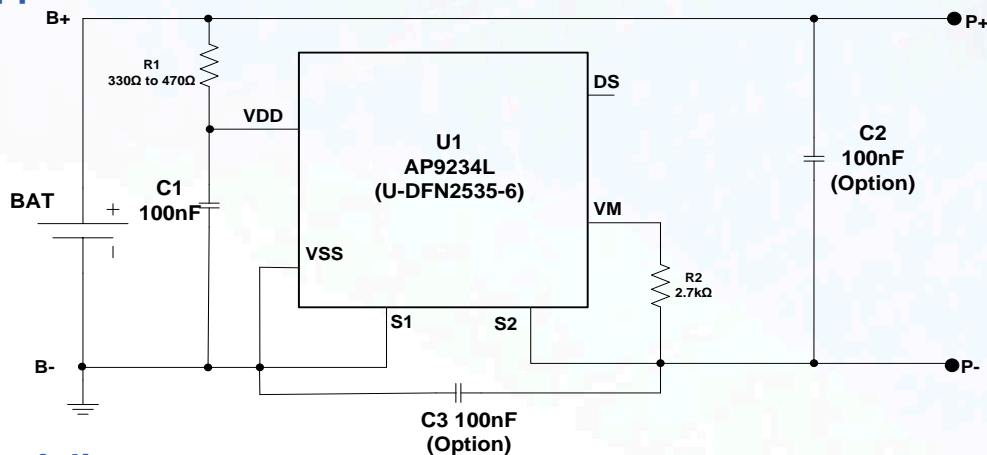 Rich design flexibility

Circuit Functions

- Li+ Rechargeable Battery Pack

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Typical Application Schematic

Product Portfolio

Voltage Combination

Part Number	Overcharge		Overdischarge		Discharge	Load Short Detection Voltage V_{SHORT}	Charge Overcurrent Detection Voltage V_{COC}	Overvoltage	
	Detection Voltage V_{CU}	Release Voltage V_{CL}	Detection Voltage V_{DL}	Release Voltage V_{DU}	Overcurrent Detection Voltage V_{DOC}			Charger Detection Voltage V_{OVCHG}	Charger Release Voltage V_{OVCHGR}
AP9234LA-AO-HSB-7	4.425V	4.225V	2.500V	2.900V	0.064V	0.228V	-0.073V	8.0V	7.3V

Delay time Combination

Delay Time Option	Overcharge Detection Delay time (t_{CU})	Overdischarge Detection Delay Time (t_{DL})	Overdischarge Current Detection Delay Time (t_{DOC})	Overcharge Current Detection Delay Time (t_{COC})	Load Short Circuiting Detection Delay Time (t_{SHORT})
1	1,000ms	115ms	10ms	10ms	320µs

Note: Current voltage versions are built by delay time option 1. If any other voltage versions or delay time combinations are needed, please contact local sales' office.