

Single Chip Battery Protection Solution for 1-cell Li-ion Battery Products

The AP9221 is a single package protection solution specially designed for single cell Li+ rechargeable batteries in portable and wearable equipment.

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

AP9221 has a built-in fixed delay time to minimize false triggering without the need of external timing components.

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

The AP9221 is available in the U-DFN2030-6 (Type C) package.



The Diodes Advantage

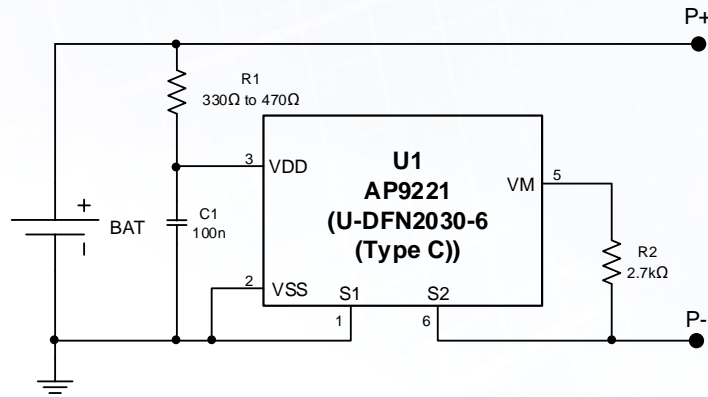
AP9221 is a high-accuracy solution for 1-cell Lithium battery protection.

- **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, over-discharge voltage/current, and load short circuit conditions
- **Selectable Power-down Mode (or Auto-wake-up Mode) and 0V Battery Charge Mode**
 Provides design flexibility

Applications

- Li+ Rechargeable battery pack
- Portable Applications
- Wearable Applications
- Compact Single Li-ion battery products

Typical Application Schematic



Product Portfolio

P/N	Package	Internal MOSFETS		Overcharge Detection Voltage (Accuracy) VCU	Overdischarge Detection Voltage (Accuracy) VDU	Discharge Overcurrent Detection Voltage (Accuracy) VDOC	Short current Detection Voltage (Accuracy) Vshort	Charge Overcurrent Detection Voltage (Accuracy) VCOC	Power Down Mode/ Auto-wake-up Mode	0V Battery Charge Function
		Y/N	Rss(ON)							
AP9101C	SOT25/26	N	-	3.5V to 4.5V (5mV per step) +/-25mV	2.0V to 3.4V (10mV per step) +/-35mV	0.05V to 0.32V (10mV per step) +/-15mV	0.45V to 0.7V (50mV per step) +/-100mV	-0.2V to -0.05V (10mV per step) +/-15mV	Factory Set	Optional
AP9211	DFN2030-6	Y	27mΩ							
AP9214L	DFN2535-6	Y	13mΩ							
AP9221	DFN2030-6	Y	120mΩ	3.5V to 4.5V (5mV per step) -15mV, +25mV	2.0V to 3.4V (10mV per step) +/-35mV	0.03V to 0.19V (10mV per step) +/-12mV	0.16V to 0.32V (50mV per step) +/-50mV	-0.19V to -0.03V (10mV per step) +/-12mV	Factory Set	Optional
AP9234L	DFN2535-6	Y	13mΩ							

To find out more information: <https://www.diodes.com/part/AP9221>

Ordering Information

Part Number	Package Code	Packaging	7" Tape and Reel Quantity
AP9221SA-CC-HAC-7	HAC	U-DFN2030-6 (Type C)	3000/Tape & Reel

Note: If any other voltage version options are required, please contact your local sales office.