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 Rss(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, overdischarge 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
New Product Announcement

AP9221

Typical Application Schematic

Product Portfolio

<table>
<thead>
<tr>
<th>P/N</th>
<th>Package</th>
<th>Internal MOSFETS</th>
<th>Overcharge Detection Voltage (Accuracy) VCU</th>
<th>Overdischarge Detection Voltage (Accuracy) VDU</th>
<th>Discharge Overcurrent Detection Voltage (Accuracy) VDOC</th>
<th>Short current Detection Voltage (Accuracy) Vshort</th>
<th>Charge Overcurrent Detection Voltage (Accuracy) VCOC</th>
<th>Power Down Mode/Auto-wake-up Mode</th>
<th>0V Battery Charge Function</th>
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<td>3.5V to 4.5V (5mV per step) +/-25mV</td>
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<td>0.05V to 0.32V (10mV per step) +/-15mV</td>
<td>0.45V to 0.7V (50mV per step) +/-100mV</td>
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To find out more information: [https://www.diodes.com/part/AP9221](https://www.diodes.com/part/AP9221)

Ordering Information

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<tr>
<th>Part Number</th>
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<td>U-DFN2030-6 (Type C)</td>
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Note: If any other voltage version options are required, please contact your local sales office.