



New Product Announcement

AP9214L

AP9214L- Simple Solution for Single-Cell Lithium Battery Pack Protection

The AP9214L is a single chip protection solution specially designed for 1-cell Li+ rechargeable battery packs.

It includes a 1-cell Lithium ion battery protection chip and dual N-Channel, ultra-low $R_{SS(ON)}$ MOSFET with common drain.

The AP9214L provides rich battery protection features and will turn-off the N-Channel MOSFET when detecting overcharge conditions (voltage and/or current), overdischarge conditions (voltage and/or current), or load short-circuit.

The device has built-in fixed delay time to save external components.

It is available in the U-DFN2535-6 package with a thickness less than 0.6mm.



The Diodes Advantage

The AP9214L provides a simple safety solution for 1-cell Lithium Battery Packs

- **High-Voltage CMOS Process, up to 30V (between terminals)**
Withstands extreme transients/surges voltage from adapters
- **Low Quiescent Current (3 μ A normal; 0.1 μ A 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
- **Built-in Dual Ultra Low $R_{SS(ON)}$ NMOS**
Minimizes the power consumption during operation.
- **Small Package of U-DFN2535-6, maximum 0.6mm height**
Supports slimmer PCM boards and bigger battery cell capacity

Applications

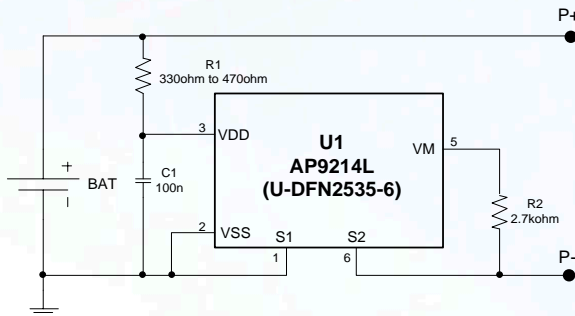
- Li+ Rechargeable Battery Pack
- Power Bank



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Typical Application



Product Portfolio

Voltage Combination

Part Number	Overcharge		Overdischarge		Discharge	Load Short Detection Voltage V_{SHORT}	Charge	Overvoltage	
	Detection Voltage V_{CU}	Release Voltage V_{CL}	Detection Voltage V_{DL}	Release Voltage V_{DU}	Overcurrent Detection Voltage V_{DOC}		Overcurrent Detection Voltage V_{COC}	Charger Detection Voltage V_{OVCHG}	Charger Release Voltage V_{OVCHGR}
AP9214L(X)-AA-HSB(X)-7	4.375V	4.175V	2.500V	2.900V	0.150V	0.700V	-0.150V	8.0V	7.3V
AP9214L(X)-AB-HSB(X)-7	4.425V	4.225V	2.500V	2.900V	0.150V	0.700V	-0.150V	8.0V	7.3V
AP9214L(X)-AC-HSB(X)-7	4.375V	4.175V	2.500V	2.900V	0.095V	0.700V	-0.095V	8.0V	7.3V
AP9214L(X)-AD-HSB(X)-7	4.375V	4.175V	2.500V	2.900V	0.120V	0.700V	-0.120V	8.0V	7.3V
AP9214L(X)-AE-HSB(X)-7	4.200V	4.100V	2.500V	3.000V	0.300V	0.550V	-0.100V	8.0V	7.3V
AP9214L(X)-AF-HSB(X)-7	4.375V	4.175V	2.500V	2.900V	0.180V	0.700V	-0.180V	8.0V	7.3V
AP9214L(X)-AG-HSB(X)-7	4.375V	4.175V	2.500V	2.900V	0.075V	0.700V	-0.075V	8.0V	7.3V
AP9214L(X)-AH-HSB(X)-7	4.425V	4.225V	2.500V	2.900V	0.075V	0.700V	-0.075V	8.0V	7.3V
AP9214L(X)-AI-HSB(X)-7	4.500V	4.300V	2.400V	2.800V	0.150V	0.700V	-0.075V	8.0V	7.3V
AP9214L(X)-AJ-HSB(X)-7	4.375V	4.175 V	2.400V	2.800V	0.125V	0.700V	- 0.125V	8.0V	7.3V
AP9214L(X)-AK-HSB(X)-7	4.250V	4.050 V	2.400V	3.000V	0.150V	0.700V	- 0.150V	8.0V	7.3V
AP9214L(X)-AL-HSB(X)-7	4.275V	4.175V	2.300V	2.400V	0.180V	0.700V	-0.180V	8.0V	7.3V
AP9214L(X)-AM-HSB(X)-7	4.375V	4.175V	2.300V	2.400V	0.180V	0.700V	-0.180V	8.0V	7.3V
AP9214L(X)-AN-HSB(X)-7	4.225V	4.025V	3.200V	3.400V	0.060V	0.450V	-0.060V	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	1000ms	115ms	10ms	10ms	320 μ s

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