

1-cell battery protection IC

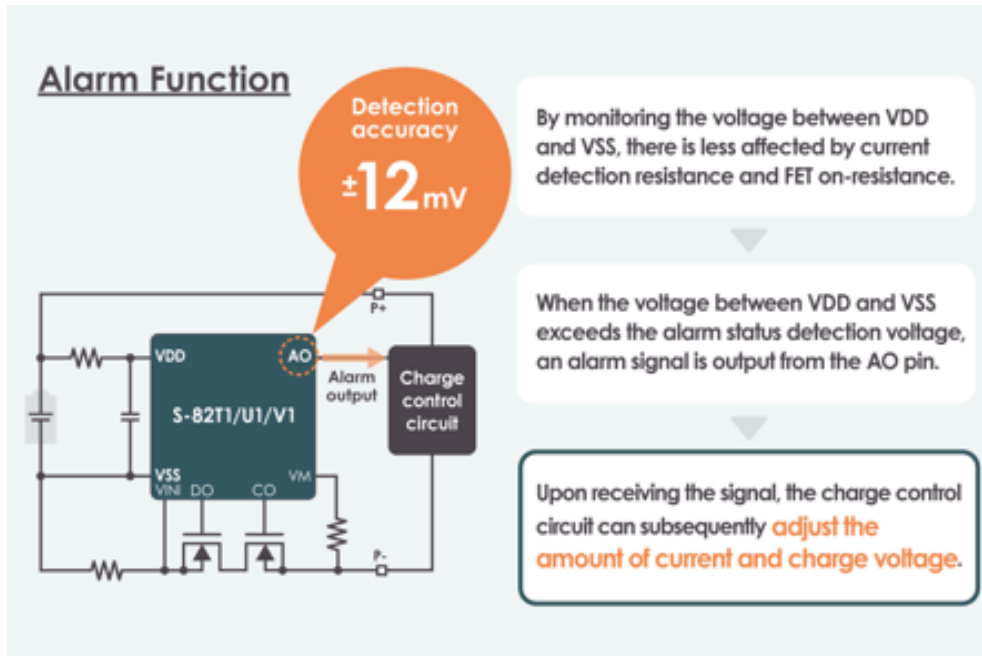
S-82L1/T1/U1/V1 series

Inventory Search



ABLIC Inc.

The industry's first* alarm function supports safe, highly efficient fast charging!



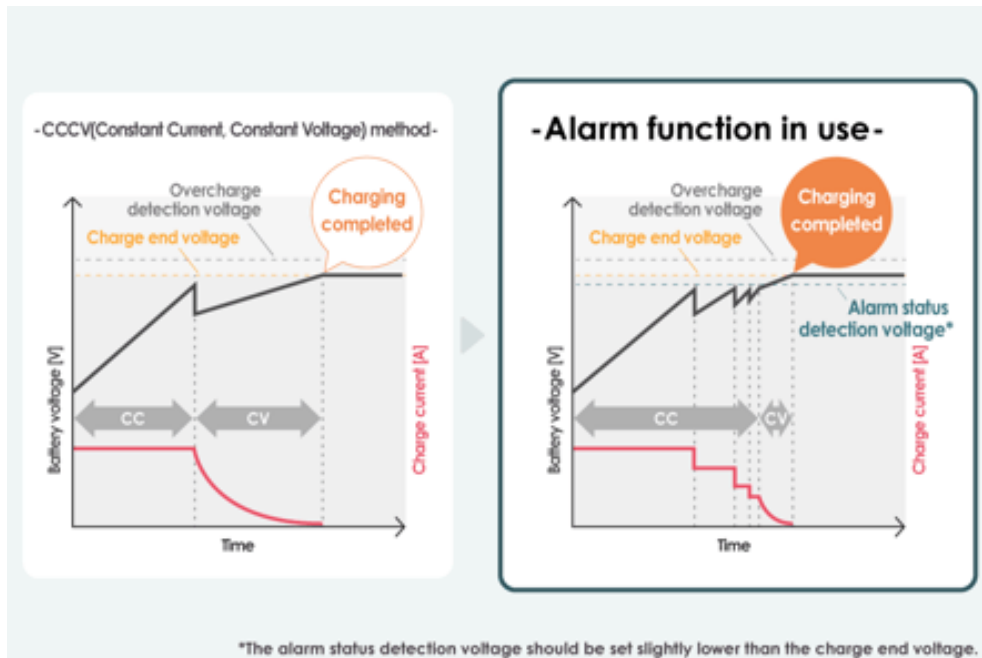
● Solves the fast charging issue

The S-82L1/T1/U1/V1 series with **the industry's first* alarm function (AO pin)** can monitor the voltage between VDD and VSS with a high accuracy of $\pm 12\text{mV}$, which is less affected by these resistance, and alarm signal can be output to the charge control circuit. This allows the charge control circuit to accurately detect the battery voltage without using an AD converter, instinctively adjusting the amount of current and charge voltage.

This IC supports safe, highly efficient fast charging, contributing to an improved device safety level and longer battery life.

*As a 1-cell battery protection IC.
Based on our research as of November 2022

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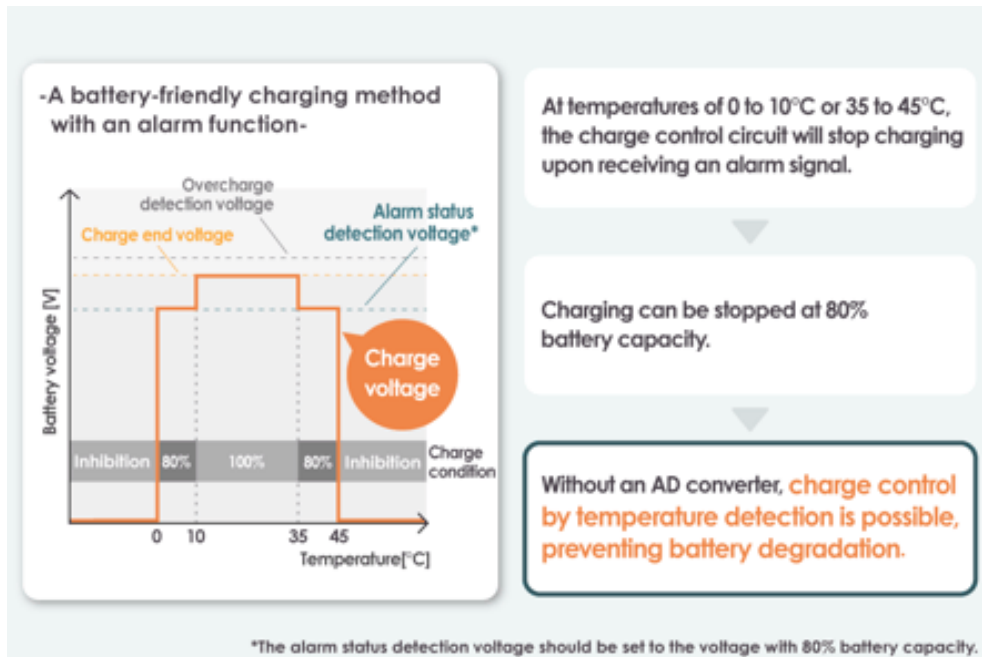


● A safe and highly efficient fast charging method with an alarm function

The charge control circuit charges the battery at a constant current until an alarm signal is outputted, and then subsequently decreases the charge current in accordance with the alarm signal. When the charge current is lowered, the battery voltage drops, stopping the alarm signal, and the battery will continue to charge until the alarm signal is outputted again.

By operating this method of control, the battery voltage can be accurately detected without the use of an AD converter, and can be safely charged to full capacity in a short time.

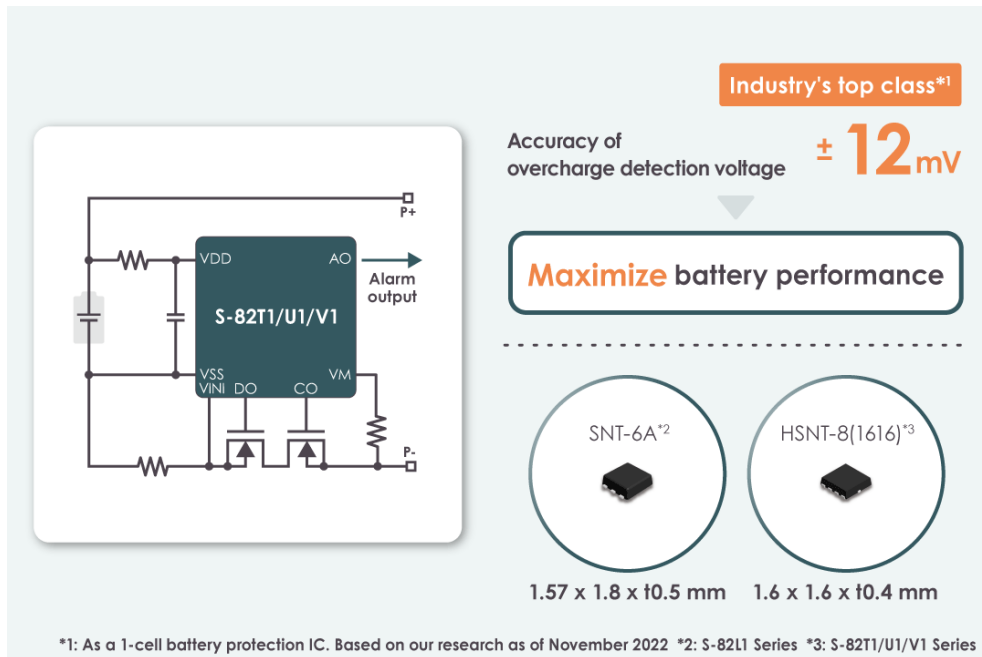
The industry's first* alarm function supports safe, highly efficient fast charging!



● A battery-friendly charging method with an alarm function

It is imperative that Lithium-ion batteries are inhibited from charging outside the recommended temperature range, therefore charge control circuits are generally equipped with a temperature monitoring function. The alarm function can be used to control the charge voltage according to temperature levels without the use of an AD converter; this enables friendly charging that is safe, and prevents battery degradation.

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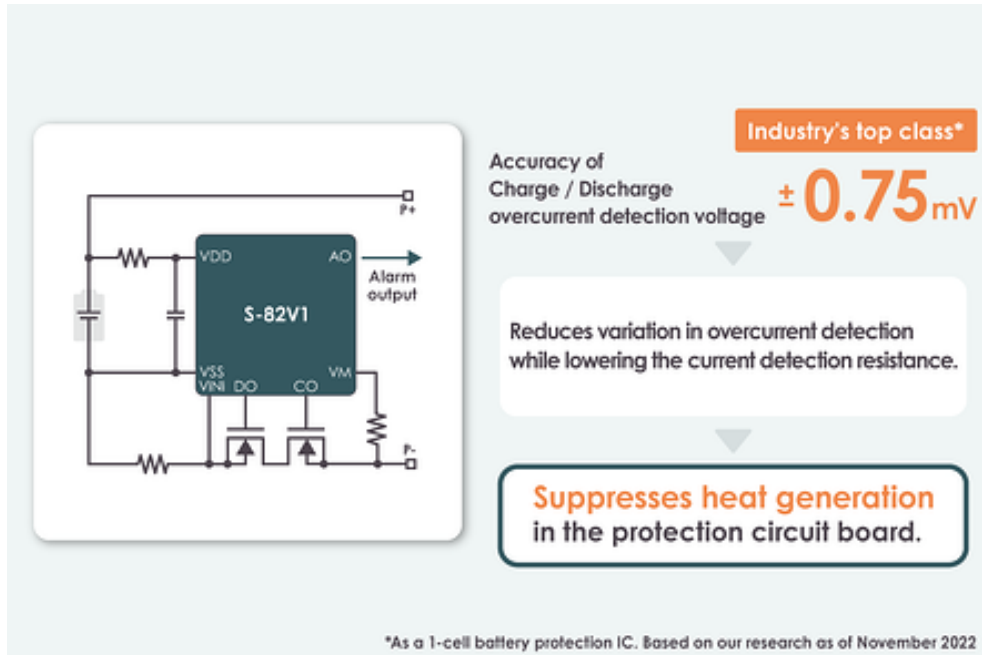
● Maximize battery performance

The S-82L1/T1/U1/V1 series offers the industry's top class* overcharge detection voltage accuracy of $\pm 12\text{mV}$. It maximizes battery performance by improving charge capacity and usage time while still ensuring battery pack safety.

Use of a [SNT-6A](#) (1.57 x 1.8 x t0.5 (max.) mm) and [HSNT-8\(1616\)](#) (1.6 x 1.6 x t0.4 (max.) mm), the industry's smallest class of package*, has significantly reduced the size of the protection circuit board.

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The industry's first* alarm function supports safe, highly efficient fast charging!



● Suppresses heat generation in the protection circuit board

The S-82V1 series offers the industry's top class* charge/discharge overcurrent detection voltage accuracy of $\pm 0.75\text{mV}$. This reduces variation in overcurrent detection while lowering resistance in current detection resistance. This enables the possibility to suppress heat generation in the protection circuit board even as the charge current increases.

*As a 1-cell battery protection IC.
Based on our research as of November 2022

- Smartphone
- Tablet PC
- Headset
- Smartwatch
- Activity tracker
- Wireless earphones



Smartphone



Tablet PC



Headset



Smartwatch



Activity tracker



Wireless earphones

Battery Protection ICs Lineup

General Use		Battery Protection IC							
Cell	Type	Function	Series	SOT-23-6	SMT-6A	HSNT-6(1618)	HSNT-6(1212)	DFN-6(414A)	HSNT-8(1616)
1-cell	Sense resistor type		S-8240A Series						
			S-8240B Series						
		CTL pin	S-82B1A Series						
		CTL pin	S-82N1A Series						
		Power-saving	S-82B1B Series						
		Power-saving	S-82N1B Series						
		Alarm function	S-82L1A Series New						
			S-82A1A Series						
			S-82M1A Series						
		Temp Protection	S-82D1A Series						
		CTL pin	S-82F1A Series						
			S-82F1B Series						
		CTL pin	S-82F1C Series						
		CTL pin	S-82H1A Series						
			S-82H1B Series						
		CTL pin	S-82K1A Series						
			S-82K1B Series						
		CTL pin	S-82P1A Series						
			S-82P1B Series						
		BS pin	S-82R1A Series						
		BS pin	S-82S1A Series						
		Alarm function	S-82T1A Series New						
		Alarm function	S-82U1A Series New						
		Alarm function	S-82V1A Series New						
	Charge-discharge current path separation		S-82Y1B Series						
		CTL pin	S-82G1A Series						
			S-82G1B Series						

Product name	S-82L1A	S-82T1A	S-82U1A	S-82V1A
	For general-use			
Number of cells	1-cell			
Function	Alarm function	Sense resistance, Alarm function		
Overcharge detection voltage (Accuracy)	4.20V to 4.60V (±12mV)	3.50V to 4.80V (±12mV)		
Overdischarge detection voltage (Accuracy)	2.00V to 3.00V (±50mV)			
Discharge overcurrent 1 detection voltage (Accuracy)	0.003V to 0.100V (±3mV)	0.003V to 0.100V (±1.5mV)	0.003V to 0.100V (±1mV)	0.003V to 0.100V (±0.75mV)
Discharge overcurrent 2 detection voltage (Accuracy)	-	0.010V to 0.100V (±3mV)	0.010V to 0.100V (±2mV)	0.010V to 0.100V (±1.5mV)
Current consumption during operation	0.8μA typ., 1.5μA max. (Ta = +25°C)	2.5μA typ., 5.0μA max. (Ta = +25°C)		
Current consumption during power-down	0.05μA max. (Ta = +25°C)			
Packages	SNT-6A	HSNT-8(1616)		
Operation temperature range	Ta= -40°C to +85°C			

Thank you so much!

ABLIC Inc.