



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

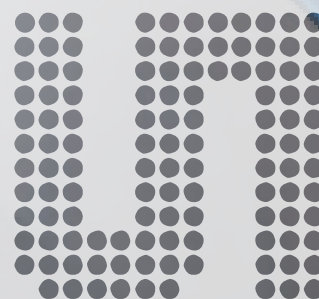
Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# Balance your cells

[www.ams.com/AS8506](http://www.ams.com/AS8506)



## AS8506 – Monitor and balancer IC for Li-Ion cell stacks

- Autonomous cell balancing
- Simultaneous cell voltage comparison
- Simplified readout of cells
- Robust, simple and small solution

We provide innovative analog solutions to the most challenging applications in sensor and sensor interfaces, power management, and wireless.

## General Description

The AS8506 features simultaneous cell voltage comparison with upper and lower threshold, active- or optionally passive cell balancing by simultaneous comparison of actual cell voltages with a target cell voltage. Cells which are below target will either cyclically receive charge packages from an isolated DCDC converter or, optionally, cells above target will cyclically be discharged by an external flying resistor through integrated switches in an autonomous way.

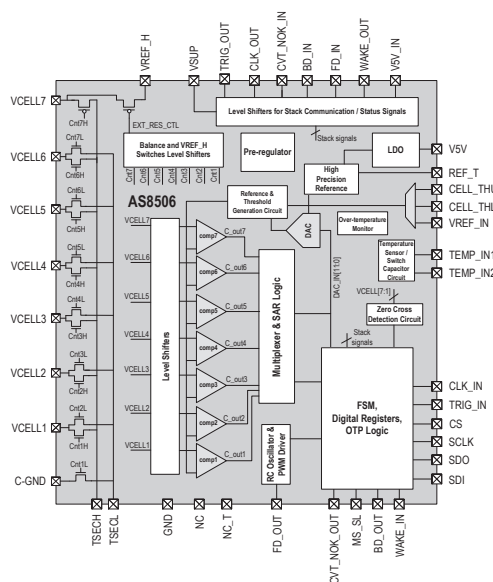
The device can flexibly be used for battery stacks of 3 up to 7 cells. It can be chained to support battery packs of virtually any number of cells in a synchronized mode.

Autonomous monitoring and balancing is triggered through control signal while absolute cell voltages / temperatures are accessible in communication mode. Direct action diagnosis signals are available to report cell voltage within limits and balance ready signal. Target cell voltage, min and max cell voltage are broadcasted to all of the chained devices during short communication slots. Together with autonomous monitoring and balancing this significantly reduces data communication compared to existing solutions and improves EMC robustness.

Specifications	
Operating Supply Range [V]	6 to 32
Operating Temperature [°C]	-40 to +85 Ambient
Number of cells per IC	3-7
Typical standby quiescent current [µA]	14
Balancing current [mA]	typically 100
Balancing target accuracy over full temperature range [mV]	10
Cell voltage target accuracy [mV]	10
Cell voltage range [V]	1,5 – 4,5
12 bit ADC for cell voltage capture. Accuracy target [mV]	±5
8 bit ADC for temperature capture. Accuracy target [°C]	±3

Features	
-	Simultaneous cell voltage capture for balancing and SOA monitoring to reduce filter/synchronization effort and intentionally enables continuous balancing also under entire load and charge phase
-	Autonomous balancing and SOA monitoring strongly reduces data communication and data processing and thereby improves EMC robustness
-	Active charge balancing with very few external components for good efficiency and little heat dissipation. One small fly back transformer per 14 cells, all switches integrated
-	For active balancing true energy redistribution if energy is taken from entire pack. Optional energy source from PV or 12V board net
-	Absolute cell voltage readout for OCV capture and cell impedance calculation. Readout of 2 temperature sensors
-	QFN-40 6x6 package

## AS8506 Block Diagram



www.ams.com  
 automotive@ams.com  
 © 06/2012 by ams  
 Subject to change without notice

**Headquarters**  
 ams AG  
 Tobelbader Strasse 30, 8141 Unterpremstaetten, Austria  
 Phone +43 3136 500-0 • Fax +43 3136 525-01

**Sales Offices Worldwide**  
 sales-europe@ams.com  
 sales-asia@ams.com  
 sales-americas@ams.com