

Data brief

### Industrial 18s battery monitor

#### **Features**

- -40°C to +125°C operating temperature range
- HBM ESD classification level 2
- CDM ESD classification level C4B
- Fully synchronized high accuracy measurements on cell voltage, and module voltage with dedicated ADC:
  - Total error including ageing and post soldering <1.4 mV at 3.3V, -40°C to 105°C
  - 16-bit resolution
  - Cell range: -1 to 5.5V
  - Integrated digital filtering with programmable cut-off frequency from 3.3 kHz to 4.4 Hz
  - Fully redundant architecture
  - Cell and busbar support on every channel
  - Dedicated busbar channel with ±1V range
- Passive internal cell balancing up to 400mA, supporting time-continuous and PWM modes, with automatic cool down based on external NTC sensing.
   Overcurrent protection during balancing available also in low power mode
- Integrated DCDC converter for energy efficiency:
  - Normal Mode: <2mA</li>
- 10 configurable GPIO
- SPI Controller and I2C Controller peripherals for interfacing external EEPROMs and sensors
- SPI Target for direct MCU interface
- Stackable architecture for high voltage battery packs up to 59 devices
- Embedded NVM for configuration parameters storage and runtime configuration integrity check
- Ultra-fast vertical interface peripheral for isolated communication
- Compatible with L99BM2C pack monitoring chip with a max desynchronization time of 7 us at system level

#### **Applications**

- Energy storage systems
- UPS

#### **Description**

L99BM218 is a 18 channel battery cells monitoring and balancing IC.

The device belongs to the L99BM2 chipset family for high voltage battery management systems monitoring and control.



	Order code	Package	Packing
	L99BM218-TR	TQFP64	Tape and reel





Overview

#### 1 Overview

The L99BM18 BMIC device provides all the functions needed to manage battery pack configurations up to 18s. It features a comprehensive set of cell/pack monitoring, balancing, and protection functions designed to guarantee safety in demanding systems.

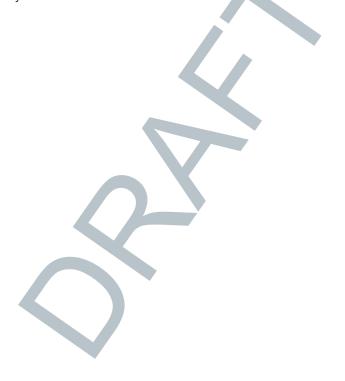
L99BM218 uses dedicated high precision ADCs synchronously acquiring cells and module voltage. The cell measurement ranges from -1V to 5.5V, making the L99BM2 family suitable for most battery chemistries.

The IC is supplied via an efficient buck pre-regulator, thus optimizing energy consumption and heat dissipation. It also integrates a 5V LDO available for biasing external sensors and supplying external EEPROMs.

A SPI Controller and I2C Controller peripherals allow interfacing the device with external sensors and EEPROMs. Passive balancing is available in both continuous and PWM mode.

Up to 59 addressable devices can be stacked in a vertical isolated communication interface.

L99BM218 implements an ultra-fast isolated communication protocol allowing to transfer voltage and temperature data of the whole daisy-chain and in less than 10ms.



DB5636 - Rev 1 page 2/6



# **Revision history**

Table 1. Document revision history

Date	Version	Changes
24-Sep-2025	1	Initial release.



DB5636 - Rev 1 page 3/6



# **Contents**

1	Overview	 	 	2
l ist	of tables			Ę







List of tables

### **List of tables**

 Table 1.
 Document revision history

 3





#### **IMPORTANT NOTICE - READ CAREFULLY**

STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice.

In the event of any conflict between the provisions of this document and the provisions of any contractual arrangement in force between the purchasers and ST, the provisions of such contractual arrangement shall prevail.

The purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST's terms and conditions of sale in place at the time of order acknowledgment.

The purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of the purchasers' products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

If the purchasers identify an ST product that meets their functional and performance requirements but that is not designated for the purchasers' market segment, the purchasers shall contact ST for more information.

ST and the ST logo are trademarks of ST. For additional information about ST trademarks, refer to www.st.com/trademarks. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2025 STMicroelectronics - All rights reserved

DB5636 - Rev 1 page 6/6