



## Industrial 18s battery monitor

### Features

Product status link	
<a href="#">L99BM218</a>	

Order code	Package	Packing
L99BM218-TR	TQFP64	Tape and reel

Product label

- -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  $\pm 1V$  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
- 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 de-synchronization time of 7  $\mu s$  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.



## 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.

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## Revision history

**Table 1. Document revision history**

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

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Contents

1 Overview .....2

Revision history .....3

List of tables .....5

DRAFT



List of tables

Table 1. Document revision history . . . . . 3

DRAFT

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