

L99UDL01

Configurable Solution for Motor Control and Load Actuation



A smart and flexible way to control multiple DC motors in several different configurations with advanced diagnostics for increased motor reliability and longevity

The L99UDL01 integrates six fully-protected half-bridges with two low-side and two high-side external MOSFET controllers that can also be configured as two half-bridge controllers.

The L99UDL01 targets industrial motor control applications using multiple brushed DC motors that require adjustable speed and constant or low-speed torque.

Thanks to its flexibility, several configurations can be achieved driving up to three DC motors with 4A capability or a single DC motor with 12A capability by parallelizing three outputs.

The low- and high-side MOSFET controllers can be configured as single drivers for auxiliary loads (solenoids, relay...) or as half-bridge controllers. The device is controlled via a 24-bit SPI Interface.

KEY FEATURES & BENEFITS

- Six integrated current-regulated and fully protected 90mΩ half-bridges
- Two external half-bridge controllers (external N-channel MOSFET); each controller can be configurable as single low- or high-side controller
- High level of programmability and configurability

KEY APPLICATIONS

High flexibility and configurability make the L99UDL01 ideal for a wide range of applications ranging from multiple low-current motor drivers (4A) to a single high-current DC motor (12A) or for higher demanding loads by using the external MOSFET controllers.

- Small home appliances
- Vending machines/Professional dispensers
- Solenoids and motorized valves
- Multiple DC motors in harsh environments

SMART CONTROL FOR MULTIPLE-MOTOR APPLICATIONS

Particularly suited for systems requiring smart control of multiple motors, the L99UDL01 is part of ST's large motor control IC portfolio addressing all the key markets and applications.

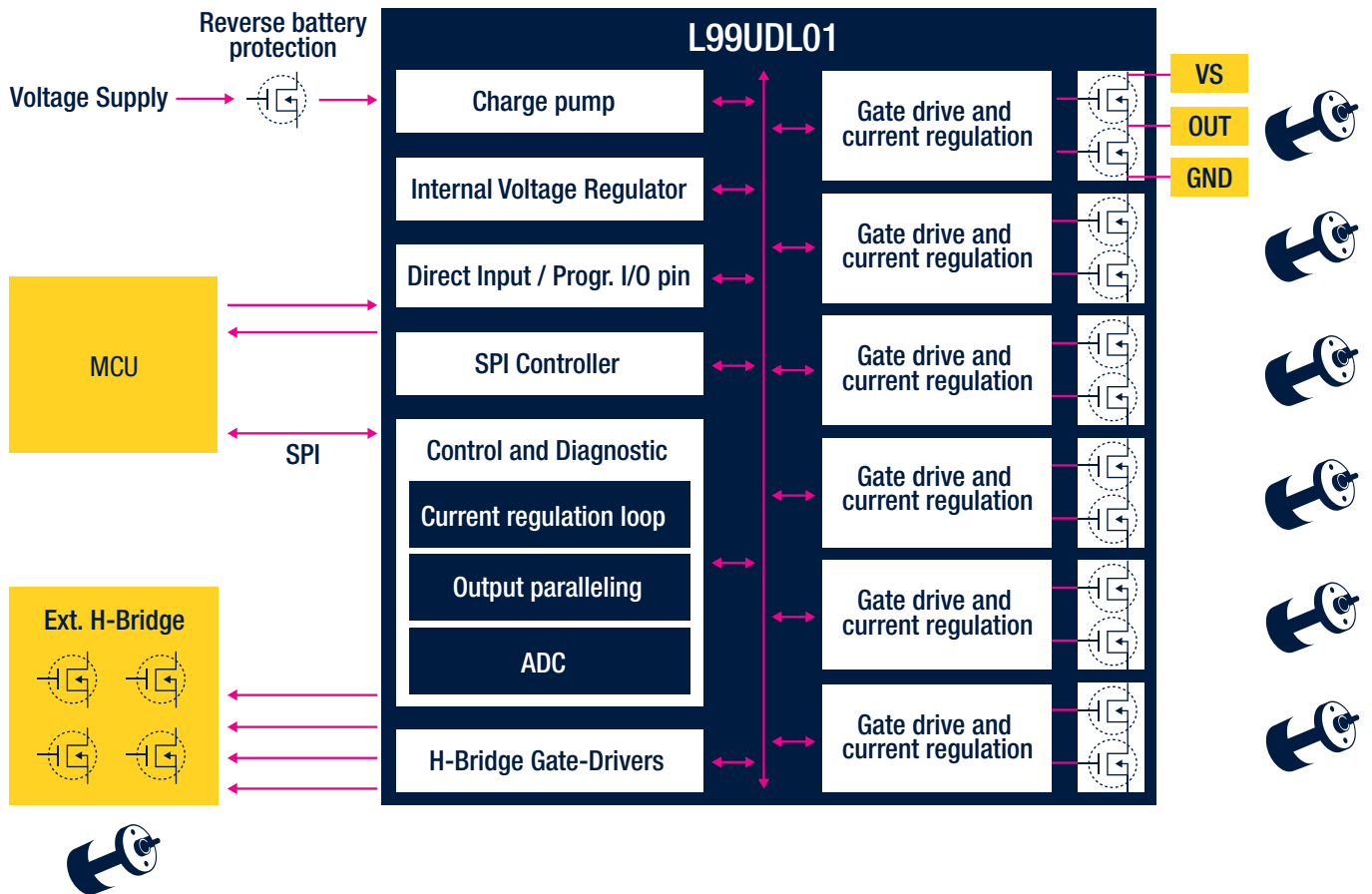
Thanks to its configurability, the L99UDL01 is also recommended for designs targeting systems with different requirements (number of motors, current capability) while keeping the same driving and control framework.

Its high level of diagnostics (including open load, short to ground, short to battery and load integrity), thermal protections (a thermal sensor is associated to each of the internal half-bridges) and regulated current (preventing excessive load current) improve actuators' reliability, thus reducing maintenance costs.

Developers can easily get started with a dedicated evaluation board (EVAL-L99UDL01) and a user-friendly graphical user interface (GUI) that lets you set the L99UDL01 control parameters and displays diagnostics in real-time including current output and battery voltage levels.



Power-TQFP64L 10x10



Device Summary

Part number	Package	Extended operating range	Temperature range	Inputs	Outputs
L99UDL01	TQFP64L	5 to 26 V	-40 to 130 °C	Serial (SPI)	Six current regulated integrated half bridges ($R_{DS(ON)} = 90 \text{ m}\Omega$) and two half-bridge drivers



© STMicroelectronics - January 2022 - Printed in the United Kingdom - All rights reserved
 ST and the ST logo are registered and/or unregistered trademarks of STMicroelectronics International NV or its affiliates in the EU and/or elsewhere. In particular, ST and the ST logo are Registered in the US Patent and Trademark Office.
 For additional information about ST trademarks, please refer to www.st.com/trademarks.
 All other product or service names are the property of their respective owners.

