

Door actuator driver

Data brief

Features

- One full bridge for 6 A load ($R_{ON} = 150 \text{ m}\Omega$)
- One half bridge for 3 A load ($R_{ON} = 300 \text{ m}\Omega$)
- One configurable highside driver for up to 1.5 A ($R_{ON} = 500 \text{ m}\Omega$) or 0.4 A ($R_{ON} = 1600 \text{ m}\Omega$) load
- One configurable high-side driver for 0.8 A ($R_{ON} = 800 \text{ m}\Omega$) or 0.4 A ($R_{ON} = 1600 \text{ m}\Omega$) load
- Two high-side drivers for 0.5 A load ($R_{ON} = 1600 \text{ m}\Omega$)
- Programmable softstart function to drive loads with higher inrush currents as current limitation value
- Very low V_S current consumption in standby mode ($I_S < 6 \mu\text{A}$ typ. $T_j \leq 85^\circ\text{C}$)
- Current monitor output for all high-side drivers
- Central two-stage charge pump
- Motor bridge driver with full R_{dson} down to 6 V
- Device contains temperature warning and protection
- Open-load detection for all outputs
- Overcurrent protection for all outputs
- Separated half bridges for door lock motor
- Programmable PWM control of all outputs
- STM standard serial peripheral interface (ST-SPI 3.0)
- Prepared for additional fail-safe path for H-Bridge



Applications

- Door Actuator Driver with 3 bridges for Double Door Lock Control, 4 high-side drivers for bulb and LED control.
- Motor bridge driver to control four external power transistors in H-Bridge configuration

Description

The L99DZ81EP is a microcontroller driven multifunctional door actuator driver for automotive applications. Up to two DC motors and four grounded resistive loads can be driven with three half bridges and four high-side drivers.

Four external MOS transistors in bridge configuration can be driven. The integrated SPI controls all operating modes (forward, reverse, brake and high impedance). Also all diagnostic information is available via SPI read.

Table 1. Device summary

Package	Order codes	
	Tray	Tape and reel
TQFP-64	L99DZ81EP	L99DZ81EPTR

1 Package information

1.1 ECOPACK®

In order to meet environmental requirements, ST offers these devices in different grades of ECOPACK® packages, depending on their level of environmental compliance. ECOPACK® specifications, grade definitions and product status are available at: www.st.com.

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2 Revision history

Table 2. Document revision history

Date	Revision	Changes
16-Nov-2011	1	Initial release.

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