



## Product brief

# MOTIX™ Bridge TLE9201SG

## 6 A H-bridge with SPI diagnosis

MOTIX™ TLE9201SG is a general purpose 6 A H-bridge for industrial and automotive applications, designed for the control of small DC motors and inductive loads. It meets the harsh automotive environmental conditions and it is qualified in accordance with the AEC-Q100 standard.

The outputs can be pulse width modulated at frequencies up to 20 kHz by means of PWM/DIR control. While the signal at the direction input defines the direction of the DC motor, the PWM signal controls the duty cycle. PWM/DIR control reduces the number of PWM capable pins needed at the microcontroller.

For load currents above the current limitation threshold (7 A typ.) the H-bridge switches into chopper current limitation mode. The MOTIX™ TLE9201SG is protected against short circuits and overtemperature and provides diagnosis via SPI or basic error feedback via status flag. Open load can be detected when the bridge is disabled or during PWM operation of inductive loads.

The robust dual inline PG-DSO-12 package provides excellent thermal performance due to the thick copper heat slug. Thanks to the protruding edges of the heat slug the package is well suited for automatic optical solder inspection.

### Applications

- › Exhaust Gas Recirculation (EGR)
- › Variable Geometry Turbo (VGT)
- › Idle speed control
- › Swirl and tumble flaps
- › Variable intake manifold
- › Turbo charger waste gate
- › Auxiliary water pumps

### Key features

- ›  $R_{DS(on)}$  (typ.) < 100 mΩ per switch
- › Operation voltage: 4.5 V to 28 V
- › Fully 3.3/5.5 V compatible logic inputs
- › Low standby current
- › Short circuit and overtemperature protection
- ›  $V_S$  undervoltage protection
- › Open load detection in ON and OFF state
- › Detailed SPI diagnosis or simple error flag
- › Qualified according automotive standard AEC-Q100
- › Green product (RoHS compliant)

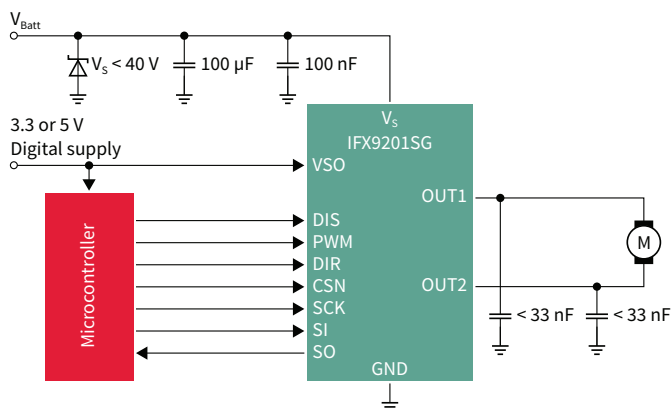
### Key benefits

- › Small package saves board space
- › Includes over current and overtemperature protection
- › Simple design with few external components
- › SPI enables for easy diagnosis

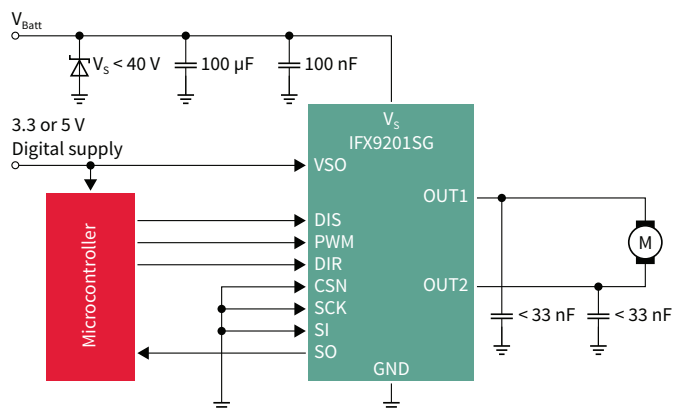
# MOTIX™ TLE9201SG

## 6 A H-bridge with SPI diagnosis

### Application example H-bridge with SPI interface

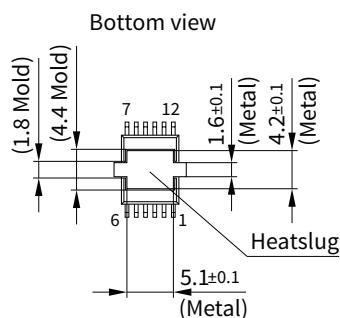


### Application example H-bridge with error flag



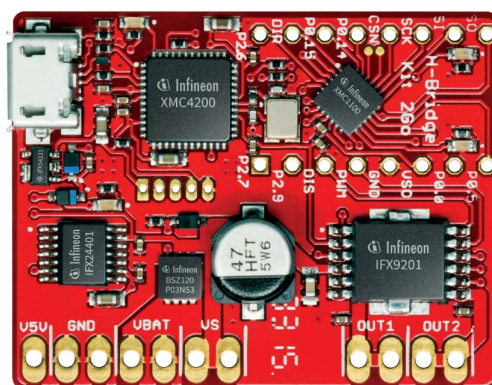
### PG-DSO-12 advantages

- Small footprint (6 x 6 mm<sup>2</sup>)
- 1 mm pitch
- Great thermal performance  $R_{thJC} < 2 \text{ K/W}$
- Easy optical inspection



### H-bridge kit 2Go

The ready to use evaluation kit is equipped with all electronic components, including the H-bridge IFX9201 and an ARM® Cortex®-M0 CPU.



### Product summary

Product type	Current limit (min) [A]	Quiescent current (typ) [µA]	Operating range [V]	$R_{DS(on)}$ (typ/switch) [mΩ]	$R_{thJC}$ (max) [K/W]	Package
MOTIX™ TLE9201SG	5	30	4.5–28	100	2	PG-DSO-12

Published by  
Infineon Technologies AG  
81726 Munich, Germany

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