

Product Brief

IFX9201SG

6 A H-bridge with SPI diagnosis

IFX9201SG is a general purpose 6 A H-bridge. It is designed for the control of small DC motors and inductive loads.

Based on the automotive know-how, the IFX9201SG is optimized for non automotive applications such as industrial applications, home appliances and building automation, power tools battery management and electric toys.

The outputs can be pulse width modulated at frequencies up to 20 kHz by means of PWM/DIR control. While the signal at the DIR 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 (8 A typ) the H-bridge switches into chopper current limitation mode.

The IFX9201SG is protected against short circuits and over temperature 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 PDSO-12 package provides excellent thermal performance due to the thick copper heat slug and is well suited for automatic optical solder inspection.

Applications

- > DC motor control for industrial applications
- > Home and building automation
- > Power tools battery management
- > Industrial robotic applications
- > Electric toys

Key features

- > $R_{DS(on)}$ (typ) = 100 m Ω per switch
- > Operation voltage 5.0 V to 36.0 V
- > 3.3 V and 5.0 V compatible logic inputs (TTL/ CMOS)
- > Low stand-by current
- > Short circuit and overtemperature protection
- > V_S undervoltage shutdown
- > Open load detection in ON and OFF state
- > Detailed SPI diagnosis or simple error flag
- > Green product (RoHS compliant)

Key benefits

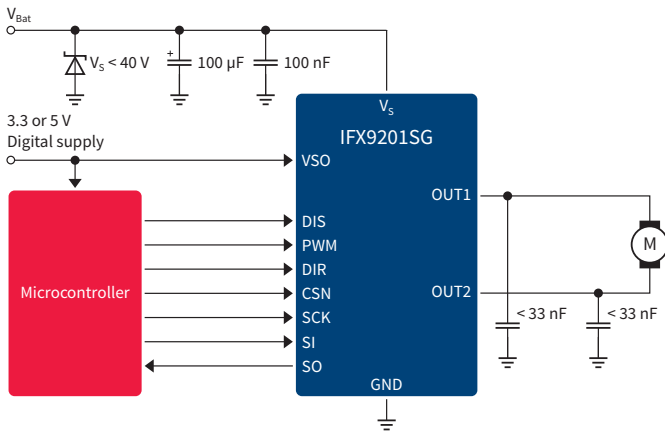
- > Small package saves board space
- > Includes over current and overtemperature protection
- > Simple design with few external components
- > SPI enables for easy diagnosis



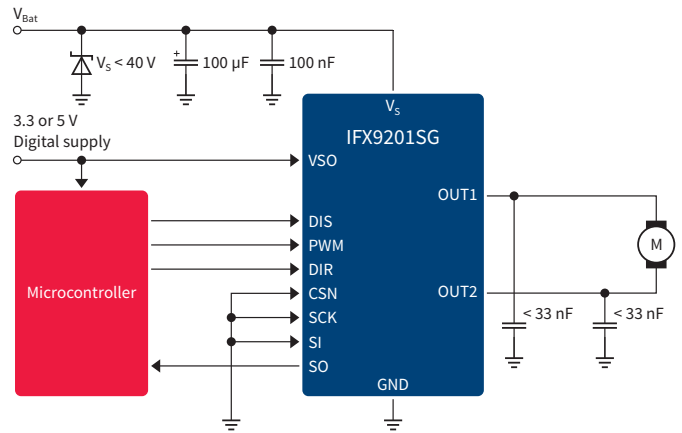
IFX9201SG

6 A H-bridge with SPI diagnosis

Application example H-bridge with SPI interface

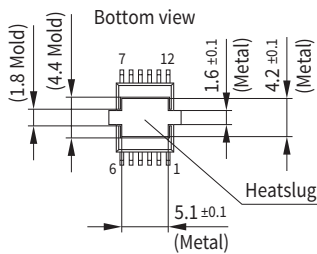


Application example H-bridge with error flag



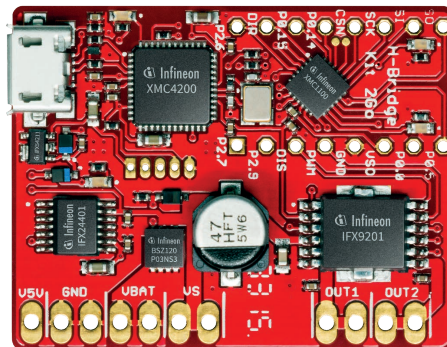
DSO-12 advantages

- > Small footprint (6 x 6 mm²)
- > 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]	Package	R_{thJC} (max) [K/W]
IFX9201SG	6.0	19.0	5.0–36.0	100	DSO-12	2.0

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