

L9958 – H-bridge DC-motor driver

Flexible driving of DC-motor controlled actuators in automotive applications helping to reduce CO₂ emission



December 2008

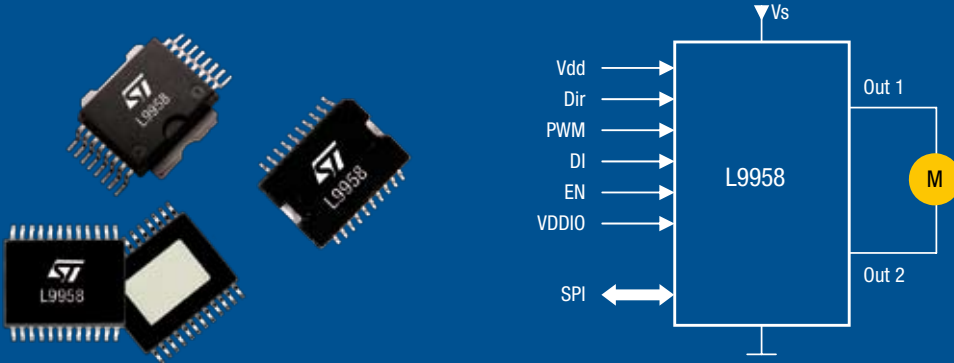
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The rising demand for diesel engines in conjunction with tough requirements for reduced exhaust emission is the driving force for motor bridges to control various actuators based on DC motors. To serve this market, as well as those applications involving the traditional gasoline engine, STMicroelectronics has launched a new DC-motor bridge driver offering advanced solutions to its customers. Three package types are available from the small and cost-effective PowerSSO-24 up to the PowerSO-20 with superior thermal performance.

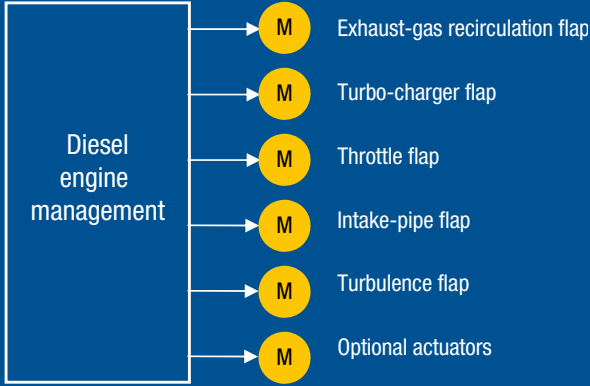


L9958 features

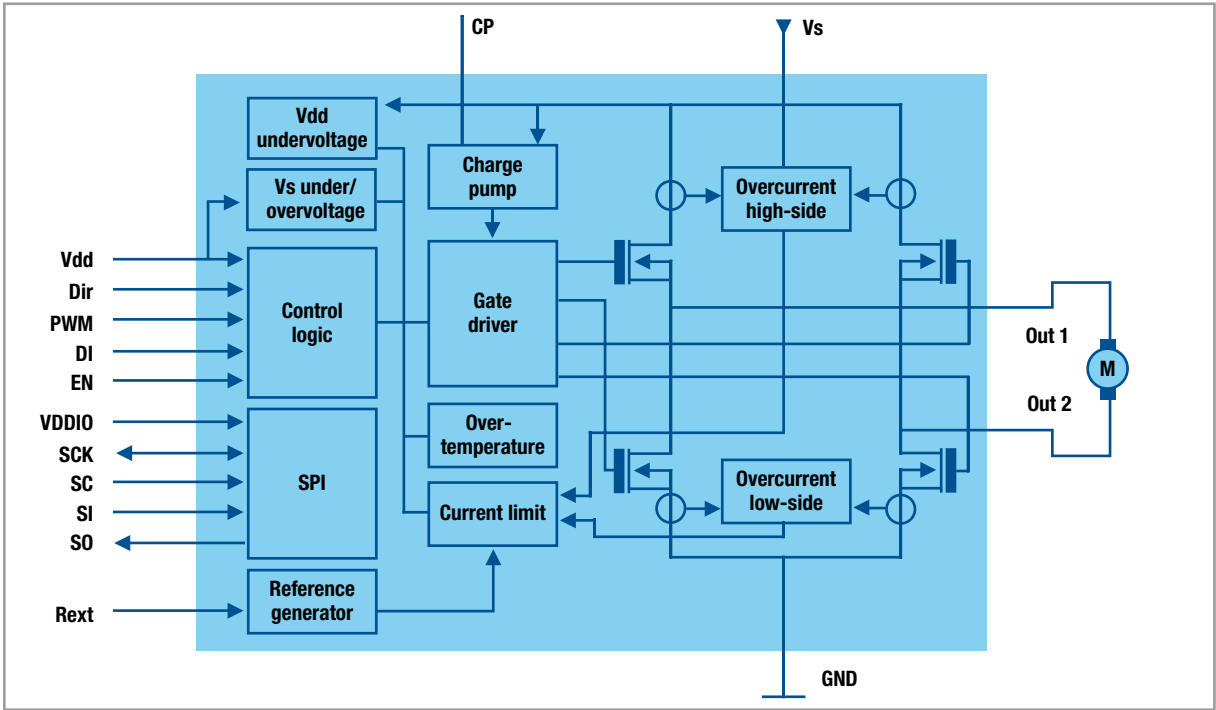
- Operating supply voltage: 4 to 28 V
- $R_{DS(on)}$ path resistance 100 m Ω (T_j -40 °C) to 300 m Ω (T_j 150 °C)
- Four-level, SPI-selectable current limitation
- All control pins sustain 18 V
- Operating frequency up to 30 kHz
- 16-bit SPI interface for configuration and diagnostics, daisy-chain capability
- Over-temperature and short-circuit protection
- Temperature dependent current regulation
- V_s undervoltage disable function
- Vdd undervoltage and overvoltage protection
- Open-load detection in on condition
- Full diagnostics in off state
- Enable and disable input
- Low standby current (<10 μ A)
- Slew rate control for extremely low EMI
- PowerSO-20, PowerSO-16 and PowerSSO-24 packages

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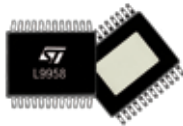
Advanced diesel engines with common-rail injection use multiple actuators to lower fuel consumption, CO₂ emission and optimize engine torque over the entire speed range. Today, all flap drivers are based on DC motors with position feedback. The L9958 is the most suitable bridge driver for this application range. The very low path resistance minimizes power dissipation even at high load current.



L9958 block diagram



Optional packages



PowerSSO-24

Smallest footprint



PowerSO-16

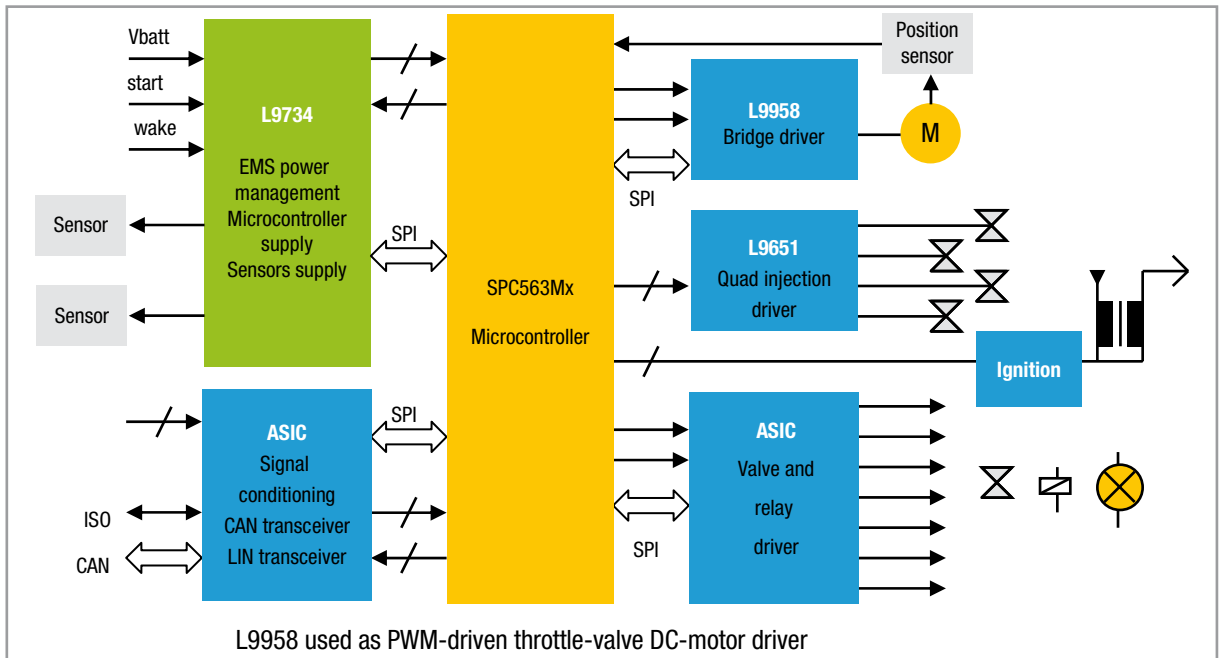


PowerSO-20

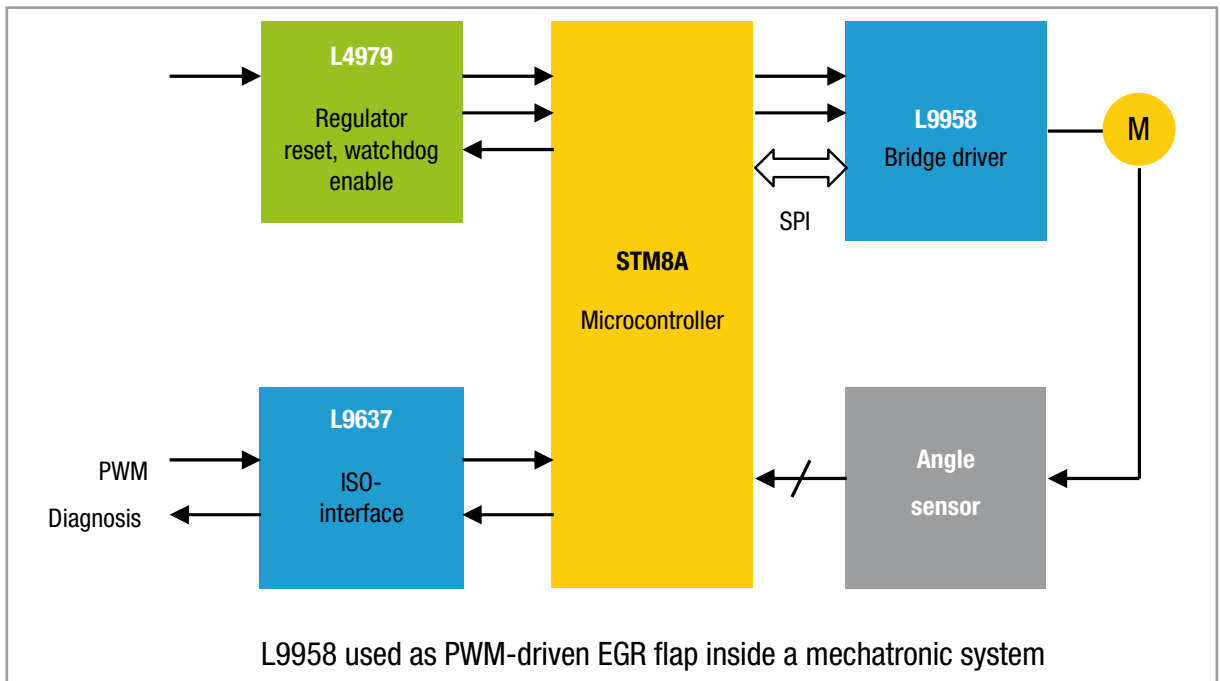
Best thermal performance



Engine management system throttle driving



Exhaust-gas recirculation



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