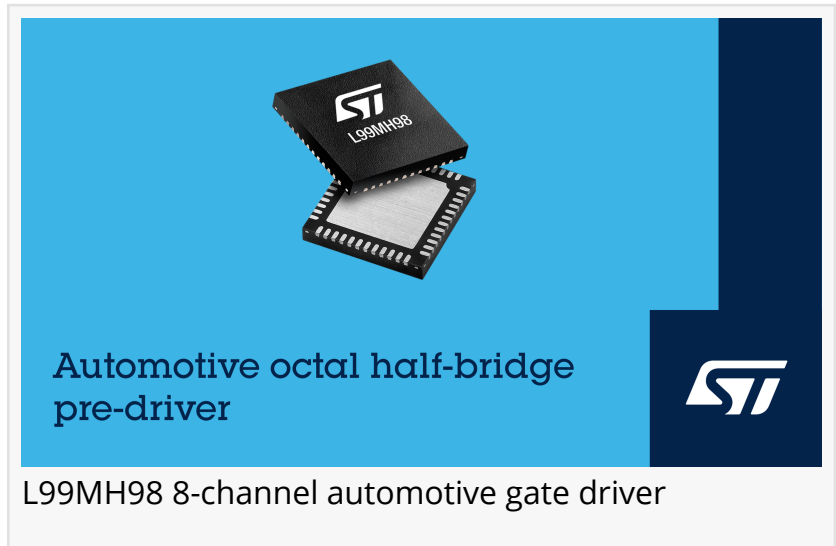


STMicroelectronics' octal automotive gate driver with patented features reducing motor-drive bill of materials cost

Motor control without shunt resistors for powered seats, sunroof, window lift, sliding doors, and trunk/tailgate

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STMicroelectronics' [L99MH98 8-channel gate driver](#) brings patented features for building automotive motor drives without sensing resistors, reducing power dissipation and the bill of materials.



The L99MH98 can drive four external full bridges, eight half bridges or single high-side/low-side powering mechanisms such as seat-position adjusters, window lifters, sunroofs, pumps, seatbelt pretensioners, and other actuators. The L99MH98 can also drive resistive loads such as heaters, and the internal circuitry contains a charge pump whose output can control a reverse-battery protection MOSFET. While the drivers can control both logic-level and standard-level MOSFETs, extended gate current capability, programmable up to 120mA, permits driving large numbers of external MOSFETs. Three-stage gate control, which applies the gate signal in three steps, helps to minimize electromagnetic emissions.

Designed to provide each MOSFET's drain-source voltage (VDS) to an analog-digital converter (ADC), the L99MH98 leverages indirect current measurement to replace sensing resistors. This ST-patented technique calculates the drain current in each MOSFET by combining the measured VDS with RDS(on) predicted using sensed temperature. The system is calibrated at manufacture to find the nominal RDS(on) values, enabling predictions to be made using the MOSFETs' resistance-versus-temperature curves.

A further feature, also ST-patented, is the programmable multi-failsafe function that enhances reliability by turning off bridges individually to protect against faults while allowing unaffected bridges to operate normally. Multi-failsafe detects faults including supply overvoltage, high-side over/undervoltage, thermal warning, charge-pump failure, VDS-monitoring failure, and

selectively turns off functions such as diagnostics, watchdog, and charge pump depending on fault type.

The L99MH98 is AEC-Q100 qualified and meets ISO 26262 criteria for functional-safety applications up to safety integrity level (ASIL) B.

Available now in a VFQFN48L package with wettable flanks and exposed underside cooling pad, the L99MH98 is priced from \$2.44 for orders of 1000 pieces.

For further information please visit: <https://www.st.com/l99mh98-octal-gate-driver>

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