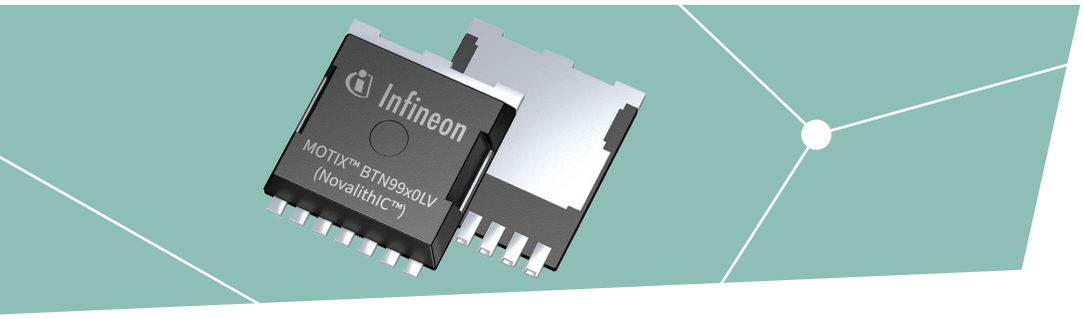
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Product brief

MOTIX™ BTN99x0LV (NovalithIC™+)

High current integrated half-bridge

The BTN99x0LV is part of the NovalithIC™ family containing one p-channel high-side MOSFET and one n-channel low-side MOSFET with an integrated driver IC all in one package. Due to the p-channel high-side switch the need for a charge pump is eliminated thus minimizing EMI.

Interfacing to a microcontroller is made easy by the integrated driver IC, which features logic level inputs, diagnosis with current sense, slew rate adjustment, dead time generation and protection against overtemperature, undervoltage, overcurrent and short circuit.

The BTN99x0LV provides a cost optimized solution for protected high current PWM motor drives with very low board space consumption.

The BTN99x0LV devices come in a small PG-HSOF-7-1 package.

Key benefits

- **Easy to use and fast design-in** – driver, MOSFETs, load current sensing and diagnostic and protection functions – all integrated in one package, promoting fast and lean design-in activities.
- **Integration** of high power PMOS, NMOS and Driver IC minimizes design and manufacturing effort.
- **Cost and PCB area optimization** – compared to a discrete solution the BTN99x0LV devices save PCB-area and pick and place costs on a system level. Furthermore, less external components are required due to the integrated diagnosis and protection functions.
- **Higher system reliability** due to integrated diagnosis, current sense and protection functions.
- **Full flexibility due to support of** half and full bridge (2x) configuration.

Key features

- AEC-Q100/Q006 qualified (Grade 1)
- Supply voltage range 8–18 V (max up to 40 V)
- Low quiescent current of max. 3.3 µA @ 85°C
- Protection features: overcurrent, undervoltage, overtemperature
- 8 selectable switching slew rates for optimized EME
- Status flag diagnosis with feedback of current sense, temperature and slew rate.

Key applications

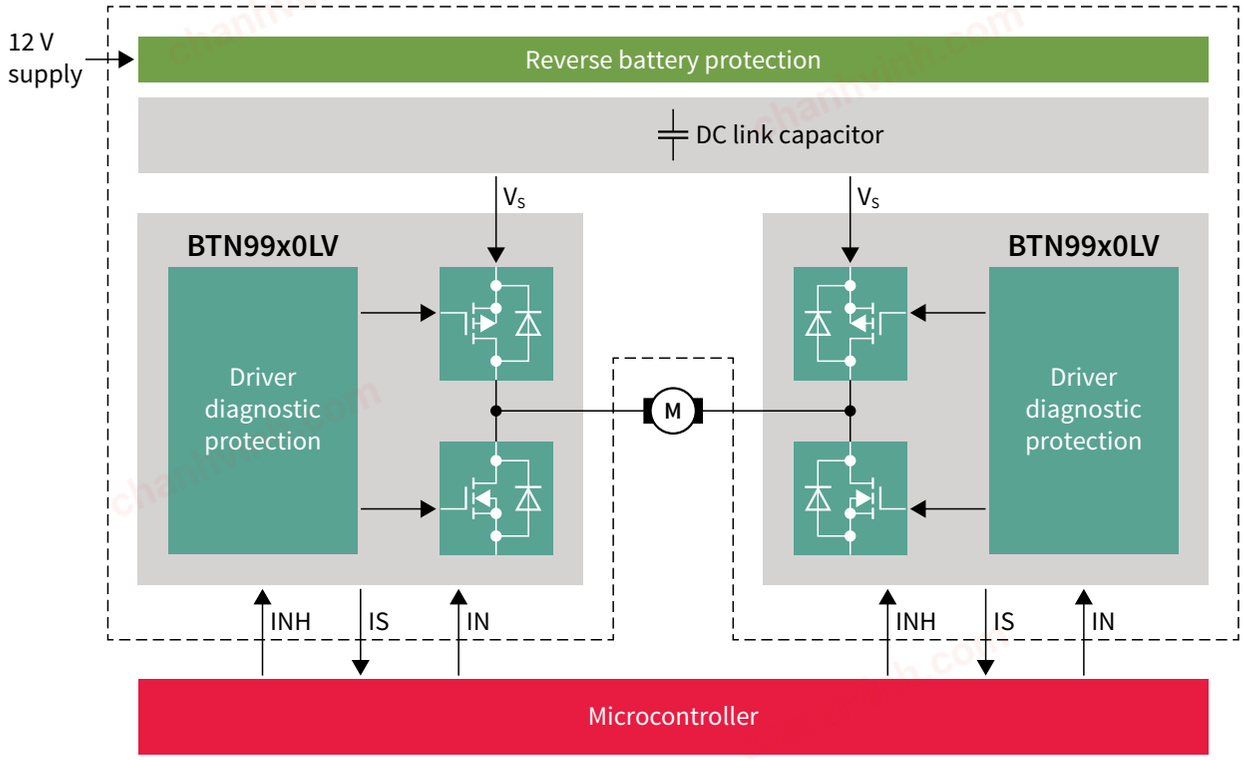
- Automotive 12 V brushed DC motor
- Seatbelt pretensioner
- Seat control
- Fuel pumps
- Power liftgate
- Sliding door
- HVAC control module

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High current integrated half-bridge

Application diagram



Product table

Product	Ordering code	Path resistance ($R_{DS(on)}$ high side + low side)	Overcurrent [A] detection level	Differential current sense ratio dk_{ILIS}	Package
BTN9990LV	BTN9990LVAUMA1	typ. 5.3 mΩ max. 9.6 mΩ @ 150°C	min. 75	typ. 50 k	PG-HSOF-7
BTN9970LV	BTN9970LVAUMA1	typ. 9.7 mΩ max. 18.1 mΩ @ 150°C	min. 60	typ. 40 k	PG-HSOF-7

Evaluation board

Board name	Ordering code	Description
DC-SHIELD_BTN9970LV	DCSHIELDBTN9970LVTOBO1	The board includes two NovalithIC™ high current half-bridges with integrated driver: BTN9970LV and BTN9990LV.

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