

# Power PROFET™ + 24/48V

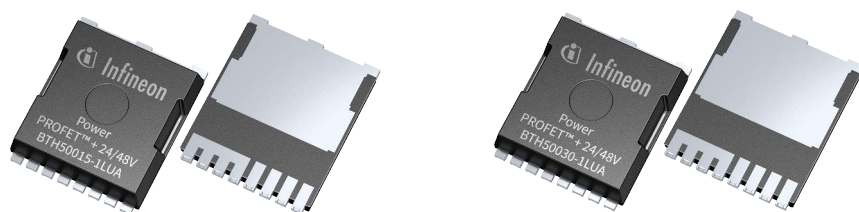
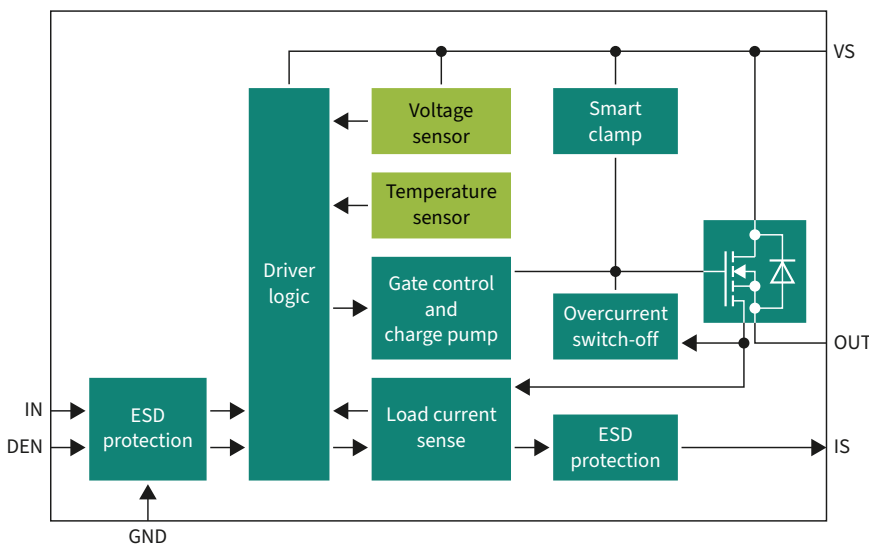
## Ultra low-ohmic smart high-side switches in TOLL package

The Power PROFET™ + 24/48V smart high-side switch family provides a very low  $R_{DS(on)}$  – one variant down to 1.5 mΩ – in a small 8-pin leadless power package (HSOF-8). The ability to drive high current loads up to 35 amperes and its state of the art integrated protections and diagnosis features makes Power PROFET™ + 24/48V ideally suited to replace electromechanical relays, fuses and discrete circuits in power distribution and other high current applications in a 24 V or 48 V board net.

Severe automotive requirements like load dump, short circuit, low battery voltage during the cranking and low impact on EMC in PWM operation are fully met. The current ( $dk_{ILIS}$ ) accuracy especially at low current allows a reliable diagnosis feature at system level.

The Power PROFET™ + 24/48V devices are automotive qualified and PRO-SIL™ ISO 26262-ready and come with a safety application note to facilitate the usage in functional safety-related applications.

### Block diagram



PRO-SIL

ISO 26262 ready

### Key features

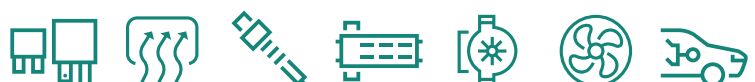
- 24/48 V lowest-ohmic high side switches with integrated protection and diagnosis features
- Extended voltage range 8 ... 60 V
- Protection: short-circuit with latch, overtemperature with latch, smart clamping, overpower shutdown, ground loss protection
- Load dump robustness up to 70 V
- Diagnosis: load current sense output and short circuit, overtemperature, open load detection on/off state
- Diagnosis Enable Pin (DEN) for MCU input multiplexing

### Key benefits

- Fully integrated solution with low stand-by current (7 μA)
- Supports long wires
- Leadless power package with good thermal performance
- Outstanding current sense accuracy ±5% after calibration
- Very low offset on the current sense: for high accuracy at low load current

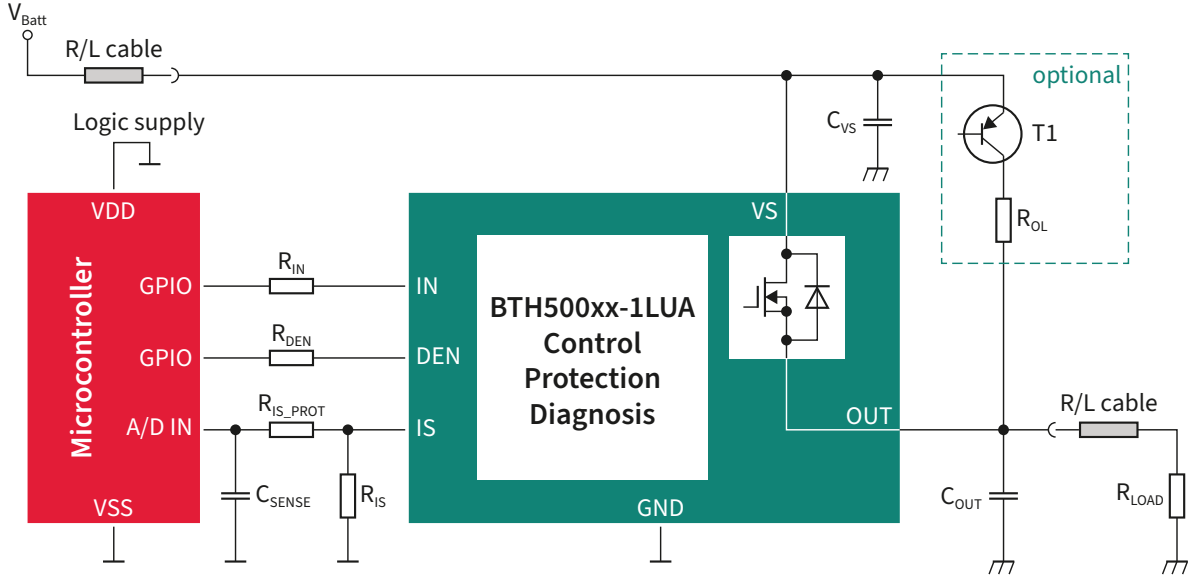
### Key applications

- Fuse and relay replacement
- Heating: rear defogger, glow plugs and PTC
- Fan and pump
- Power distribution



**PRODUCT BRIEF**

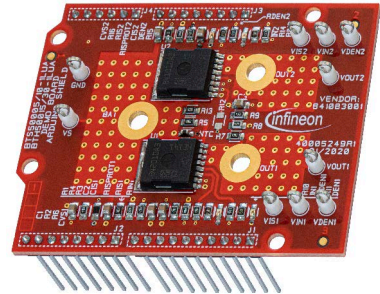
**Application diagram**



**Product table**

Product name	R <sub>DS(ON)</sub> (typ) [mΩ]	R <sub>DS(ON)</sub> (max) @T <sub>J</sub> = 150°C [A]	Nominal current (typ) [A]	Extended voltage [V]	I <sub>CL(0)</sub> (min) [A]	Package	SP number
BTH50015-1LUA	1.5	3.5	35	8 ... 60	90	TOLL (HSOF-8)	SP005346648
BTH50030-1LUA	3.0	7.0	25	8 ... 60	55	TOLL (HSOF-8)	SP005346650

Board name	Description	SP number
BOARD BTH50015-1LUA	Arduino shield to evaluate both BTH50015-1LUA and BTH50030-1LUA (both devices on the board)	SP005433124



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