PRODUCT BRIEF

Power PROFET™ + 24/48V

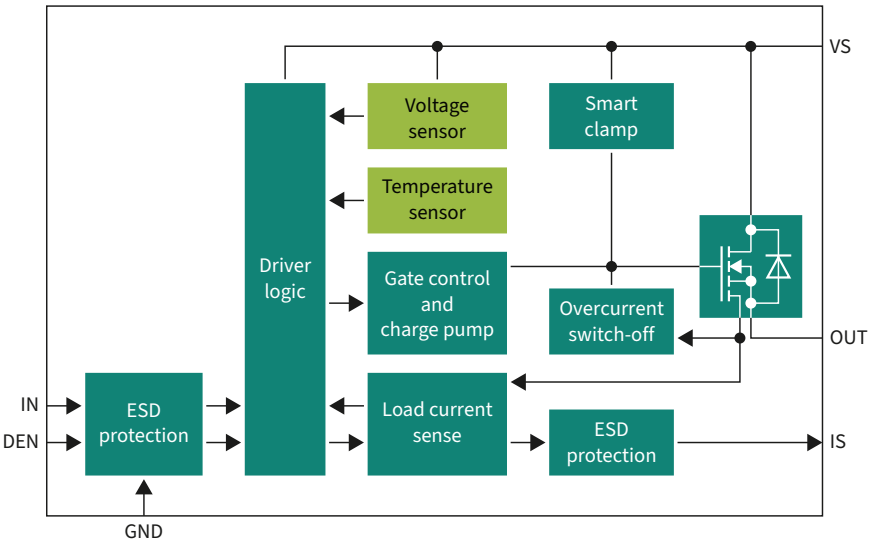
Ultra low-ohmic smart high-side switches in TOLL package

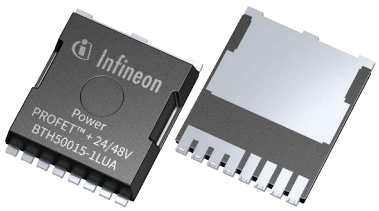
The Power PROFET™ + 24/48V smart high-side switch family provides a very low $R_{DS(on)}$ – one variant down to 1.5 mΩ – in a small 8-pin leadless power package (HSOF-8). The ability to drive high current loads up to 35 amperes and its state of the art integrated protections and diagnosis features makes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





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

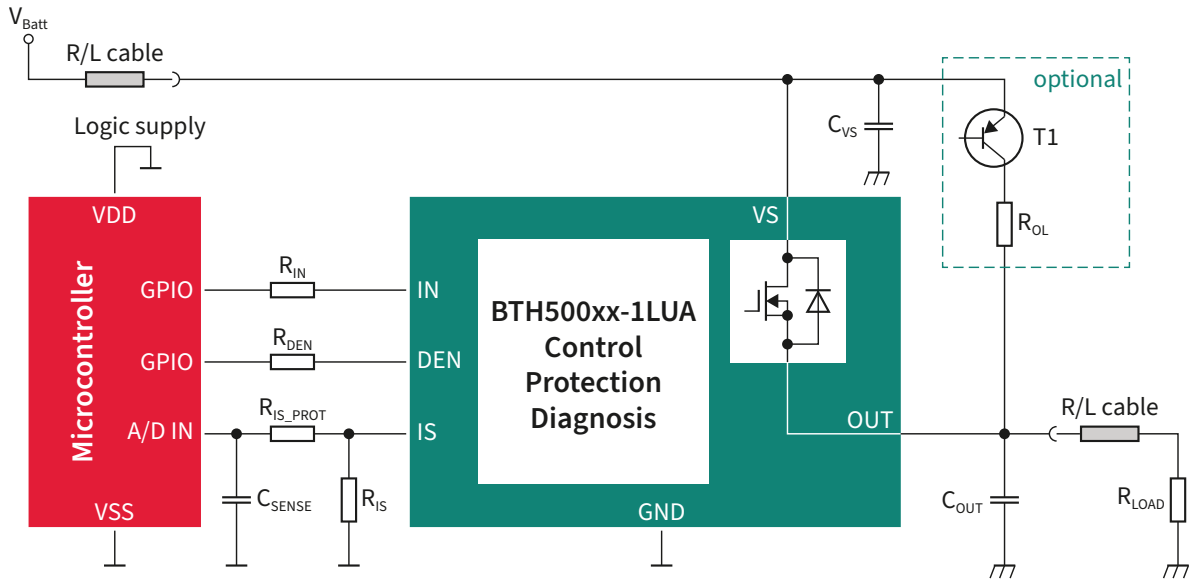
Key applications

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

PRO SIL ISO 26262 ready

www.infineon.com/powerprofet

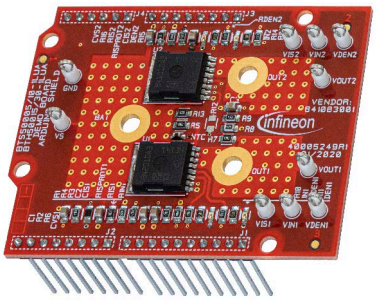
Application diagram



Product table

Product name	$R_{DS(ON)}$ (typ) [mΩ]	$R_{DS(ON)}$ (max) @T_J = 150°C [A]	Nominal current (typ) [A]	Extended voltage [V]	$I_{CL(0)}$ (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



Published by
Infineon Technologies AG
Am Campeon 1-15, 85579 Neubiberg
Germany

Public

Document number:
Date: 10/2023

Please note!
This Document is for information purposes only and any information given herein shall in no event be regarded as a warranty, guarantee or description of any functionality, conditions and/or quality of our products or any suitability for a particular purpose. With regard to the technical specifications of our products, we kindly ask you to refer to the relevant product data sheets provided by us. Our customers and their technical departments are required to evaluate the suitability of our products for the intended application.

We reserve the right to change this document and/or the information given herein at any time.

Additional information
For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices, please contact your nearest Infineon Technologies office (www.infineon.com).

Warnings
Due to technical requirements, our products may contain dangerous substances. For information on the types in question, please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by us in a written document signed by authorized representatives of Infineon Technologies, our products may not be used in any life-endangering applications, including but not limited to medical, nuclear, military, life-critical or any other applications where a failure of the product or any consequences of the use thereof can result in personal injury.

Scan QR code and explore offering
www.infineon.com