

## Product brief

# PROFET™+2

## High-side switches for energy efficiency and miniaturization

The PROFET™+2 family of protected high-side power switches (2 mΩ to 200 mΩ) in TSDSO-14 exposed pad package provides state of the art diagnostics and protection features. The family offers benchmark form factor, the lowest  $R_{DS(ON)}$  (1x 2.6 mΩ) and smallest package (TSDSO-14) pin pitch of 0.65 mm.

The whole family is compatible with the most severe reverse battery requirement on the market due to incorporating ReverSave™ functionality for the 1<sup>st</sup> time in the market on a single chip product. The family offers outstanding energy efficiency with reduced current consumption, state of the art current sense accuracy ( $k_{ILIS}$ ), benchmark low cranking voltage capability and faster switching/slew rate with no impact on EMC.

### Key features

- > Operating voltage range 3.1–28 V with 3.3 V and 5 V compatible logic input
- > Protection: current tripping, over-temperature, overvoltage, load dump, reverse polarity, short-circuit
- > Diagnosis: load current sense output

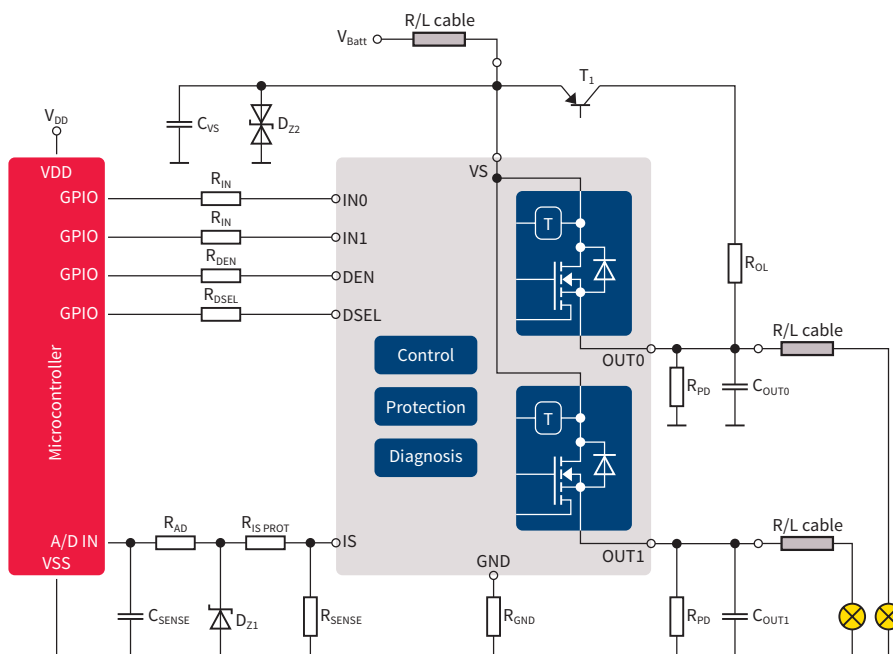
### Key benefits

- > 50% reduced internal operating current consumption
- > Simplified & cost efficient ground network
- > Outstanding current sense accuracy ( $k_{ILIS}$ ) ≤ 5% @ nominal load current
- > Benchmark cranking voltage capability able to work down to 2.7 V
- > Smaller package size for area savings
- > Optimized for design flexibility across the family by pin to pin compatibility
- > Very low output leakage current (≤ 0.5 μA up to 85°C)

### Key applications

- > Body actuation, heating and power distribution loads
- > Resistive elements, bulbs, LED modules, ECUs and motors
- > Up to 30 A nominal load current

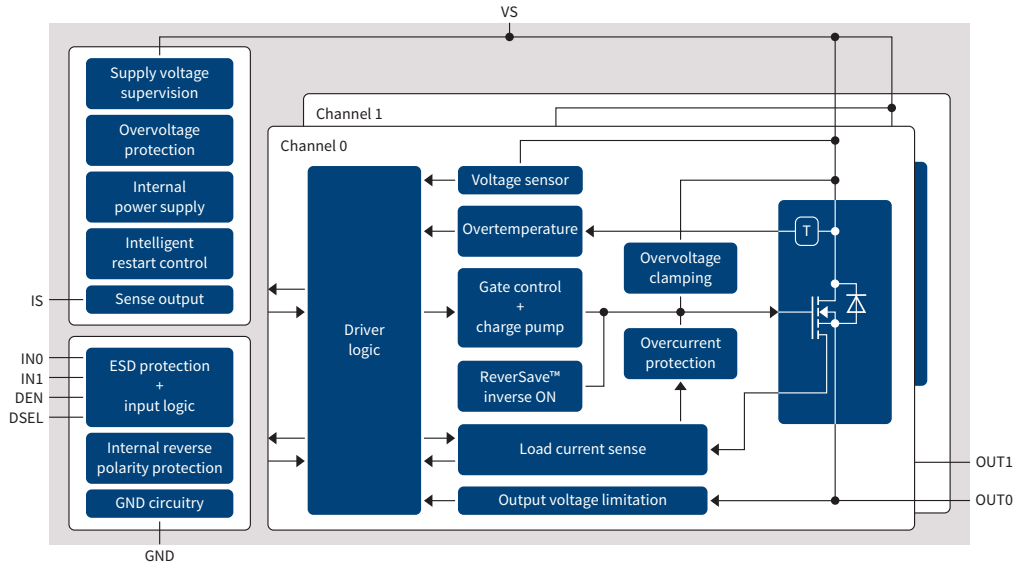
### Application diagram



# PROFET™+2

## High-side switches for energy efficiency and miniaturization

Block diagram for BTS7xxx-2EPA



### Product table

	Product name	$R_{DS(on)}$ (typ) [mΩ]	$R_{DS(on)}$ (max) @ $T_j = 150^\circ\text{C}$ [mΩ]	Nominal load current [A]	$E_{AS}$ [mJ]	Operating voltage range [V]	$I_{L(SC)}$ (typ) [A]	Number of channels	Load current trip	Sense enable	Open-load in OFF	Latch	ReverSave™	Package
NEW	BTS7200-2EPA	66.5	120	< 3	13.5 @ 2.4 A	3.1 ... 28.0	10	2	●	●	●			TSDSO-14 EP
NEW	BTS7200-2EPC	66.5	120	< 3	13.5 @ 2.4 A	2.7 ... 28.0	10	2	●	●	●			TSDSO-14 EP
NEW	BTS7120-2EPA	61	110	< 3	13.5 @ 4.0 A	3.1 ... 28.0	18.2	2	●	●	●			TSDSO-14 EP
NEW	BTS7080-2EPA	20.9	39.6	3–5	36 @ 6 A	3.1 ... 28.0	36	2	●	●	●		●	TSDSO-14 EP
NEW	BTS7040-2EPA	19	36	3–5	36 @ 7 A	3.1 ... 28.0	46	2	●	●	●		●	TSDSO-14 EP
NEW	BTS7040-1EPA	19	36	3–5	30 @ 9 A	3.1 ... 28.0	46	1	●	●	●		●	TSDSO-14 EP
	BTS7030-2EPA	13.5	25	3–5	38 @ 9 A	3.1 ... 28.0	60	2	●	●	●		●	TSDSO-14 EP
	BTS7020-2EPA	12.7	23.7	5–10	42 @ 10 A	3.1 ... 28.0	71	2	●	●	●		●	TSDSO-14 EP
	BTS7012-2EPA	11.5	21.5	5–10	42 @ 12 A	3.1 ... 28.0	73	2	●	●	●		●	TSDSO-14 EP
NEW	BTS7012-1EPA	11.5	21.5	5–10	50 @ 17 A	3.1 ... 28.0	73	1	●	●	●		●	TSDSO-14 EP
	BTS7010-2EPA	9.5	19.5	5–10	55 @ 13 A	3.1 ... 28.0	77	2	●	●	●		●	TSDSO-14 EP
NEW	BTS7010-1EPA	9.5	19.5	5–10	55 @ 18 A	3.1 ... 28.0	77	1	●	●	●		●	TSDSO-14 EP
	BTS7008-2EPA	9	16	5–10	75 @ 15 A	3.1 ... 28.0	88	2	●	●	●		●	TSDSO-14 EP
NEW	BTS7008-1EPA	9	16.4	10–15	65 @ 20 A	3.1 ... 28.0	88	1	●	●	●		●	TSDSO-14 EP
NEW	BTS7008-1EPP	8.8	16	10–15	70 @ 22 A	3.1 ... 28.0	77.5	1	●	●	●	●	●	TSDSO-14 EP
NEW	BTS7006-1EPP	6.6	12	10–15	95 @ 25 A	3.1 ... 28.0	89.5	1	●	●	●	●	●	TSDSO-14 EP
	BTS7004-1EPP	4.4	8	10–15	150 @ 30 A	3.1 ... 28.0	113	1	●	●	●	●	●	TSDSO-14 EP
NEW	BTS7002-1EPP	2.6	4.8	> 15	315 @ 42 A	3.1 ... 28.0	133	1	●	●	●	●	●	TSDSO-14 EP

Published by  
Infineon Technologies AG  
81726 Munich, Germany

© 2019 Infineon Technologies AG.  
All Rights Reserved.

**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](http://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.