

Product brief

PROFET™+2

High-side switches for energy efficiency and miniaturization

The PROFET™+2 family of protected high-side power switches (8 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 $R_{DS(ON)}$ (2x 8 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 1st 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

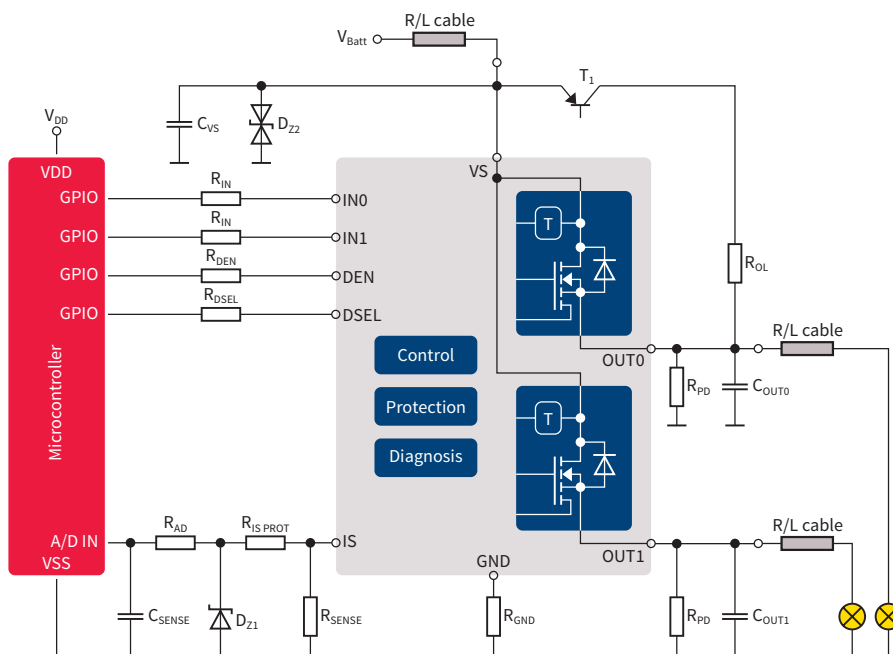
Key benefits

- > 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 3.1 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

- > Automotive 12 V lighting load applications capacitive loads e.g. halogen bulbs and LED modules
- > Resistive loads e.g. small seat heating applications requiring below 8A nominal currents

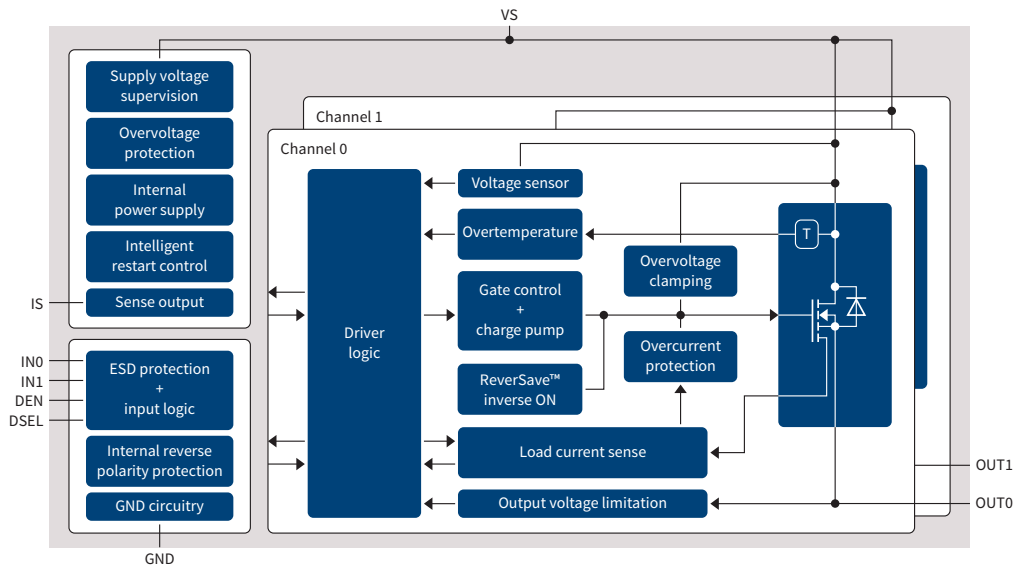
Application diagram



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Block diagram



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	82	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

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