

Product Brief

The Industrial PROFET™ Family – Protected High-Side Switches for Industrial Applications

The Industrial PROFET™ family is a family of protected single channel Smart High-Side NMOS-Power Switches with charge pump and CMOS compatible input. The devices are monolithically integrated in Smart technology.

Applications

- Microcontroller-compatible power switch for 12V/24V and 42V DC applications
- High-speed PWM applications
- Qualified for 12V and 24V applications
- All types of resistive, inductive and capacitive loads
- Replacement of electromechanical relays, fuses and discrete circuits
- Driver for electromagnetic relays
- Power management for high-side-switching with low current consumption in OFF-mode x

Key Benefits

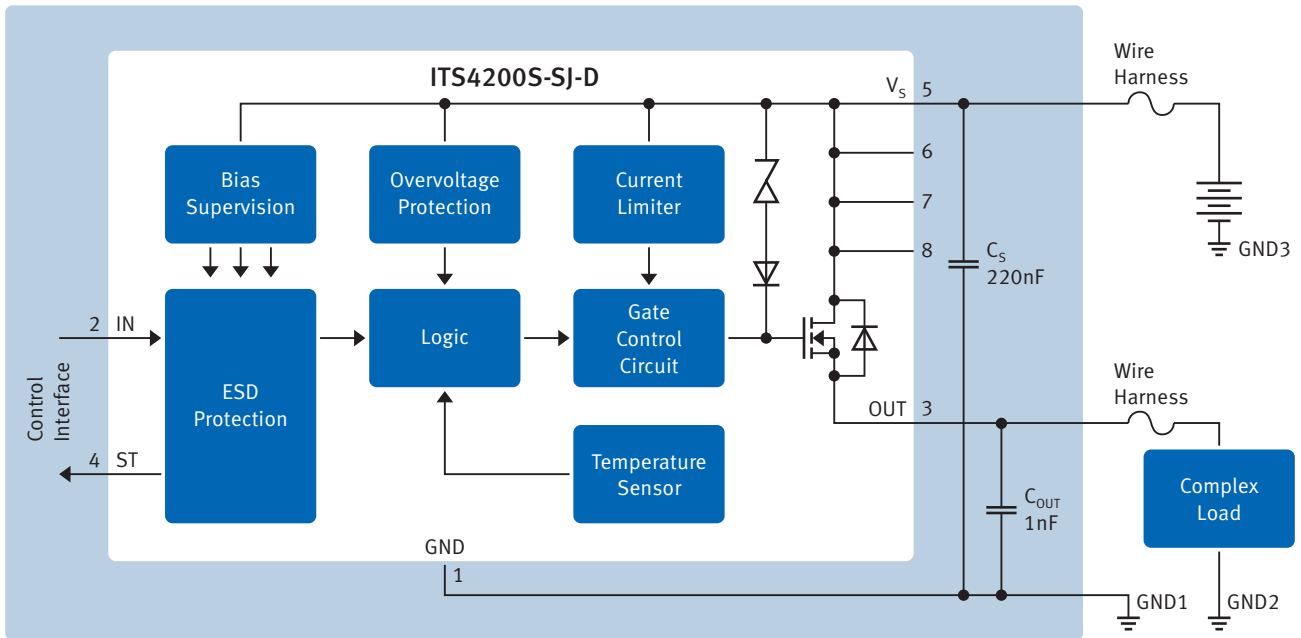
- Benchmark energy robustness
- Especially suitable for switching inductive loads
- High voltage capability (up to 58V)
- Fast switching capability (up to 1kHz)
- Low current consumption
- CMOS compatible input
- Protection features: overtemperature, short circuit, overload, current limitation, open load detection

Key Features

- Protection functions: short-circuit protection, overload protection, overtemperature protection, under and overvoltage shutdown, loss-of-ground and loss-of- V_{bb} protection, reverse battery protection, ESD protection
- Available with diagnosis functions
- Wide operating voltage range up to 58V
- CMOS-compatible input
- PWM capability
- Improved Electromagnetic Compatibility (EMV)
- Very low standby current
- Green/RoHS compliant

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Block Diagram



Product Table

Product	$R_{DS(on)}$ @ $T_j = 25^\circ\text{C}$ [mΩ]	Load Current (min.) [A]	Load Current (typ.) [A]	$I_{L(SC)}$ (typ.) [A]	E_{AS} [mJ]	Recommended Operating Voltage Range [V]	Diagnosis	Package
ITS41K0S-ME-N	1000	0.2	0.55	0.9	1000 @ 0.15A	4.9 ... 60.0	N/A	SOT223
ITS4200S-ME-O	150	0.7	1.1	1.4	700 @ 0.5A	12.0 ... 45.0	N/A	SOT223
ITS4200S-ME-P	150	1.4	2.2	3.0	160 @ 1A	12.0 ... 45.0	N/A	SOT223
ITS4200S-ME-N	160	0.7	1.2	1.5	500 @ 0.5A	5.0 ... 34.0	N/A	SOT223
ITS4060S-SJ-N	50	2.6	3.1	17.0	900 @ 1.5A	5.0 ... 34.0	N/A	PG-DSO-8
ITS4100S-SJ-N	70	2.0	2.4	10.0	870 @ 1A	5.0 ... 34.0	N/A	PG-DSO-8
ITS4200S-SJ-D	150	1.3	1.7	6.5	125 @ 1A	6.0 ... 52.0	Digital	PG-DSO-8
ITS4300S-SJ-D	250	0.4	0.8	1.2	800 @ 300mA	5.0 ... 34.0	Digital	PG-DSO-8
ITS42008-SB-D	200	0.7	0.7	1.1	10 @ 0.625A	11.0 ... 45.0	Digital	PG-DSO-36

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