



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

The new Industrial MiniPROFET™ 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

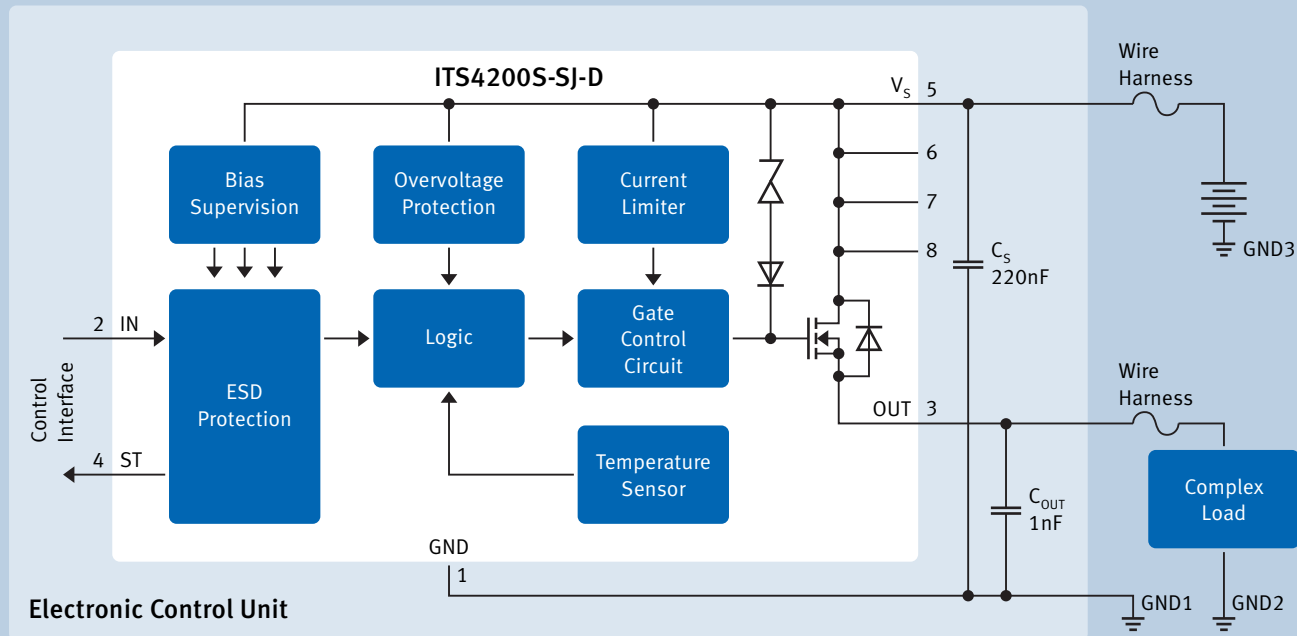
Key Features

- 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 |

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