

IPS1025HF

Ready for tomorrow's safe control solutions



Single high-side switch IC featuring short power on/off delay time suitable for SIL systems requirements for interface type C (or D) Class 3

The new generation ST intelligent power switches (IPS) offer smart load management with high and low current limitation settings and enhanced diagnostics to drive any industrial load correctly.

The wide 60 V operating range of the high efficiency IPS1025HF high-side switch maximizes design flexibility, while the very short propagation delay at startup helps safety application designers satisfy higher SIL requirements.

KEY FEATURES & BENEFITS

- 8.65 V to 60 V operating voltage
- Very low RDS(on): 25 mΩ (max.)
- Power-on/-off delay time < 60 μs
- Load current limitation 2.5 A (min.)
- Smart driving of capacitive load:
 - Programmable initial current threshold (ILIMH/L) duration using external capacitor
- Fast demagnetization when switching inductive load
- OVL and OVT fault diagnostics and protections
- Case overtemperature protection
- Vcc overvoltage protection
- Ground disconnection protection
- Undervoltage lock-out

Designed to meet:

- IEC 61000-4-2, IEC 61000-4-4, and IEC 61000-4-5
- Packages:
 - PowerSSO-24
 - QFN48L (8 x 6 x 0.9 mm)

KEY APPLICATIONS

- Programmable logic control
- Industrial PC peripheral I/Os
- Numerical control machines
- Vending machines
- General high-side switching applications



Hands-on development

The IPS1025HF monolithic, single-channel, high-side switch ICs can drive capacitive, resistive, or inductive loads with one side connected to ground. The operating voltage ranges from 8.65 V to 60 V, with 65 V breakdown voltage on the supply. The power-on/-off delay time below 60 μ s helps safety application designers achieve SIL requirements as high as class 3 for type C (or D) interfaces.

The output stage is an N-channel Power MOSFET with a typical $R_{DS(on)}$ of 12 m Ω at ambient temperature and output current internally limited to 2.5 A (min.). The IC features two different current limit settings for loads with initial inrush current requirements like bulb lamps or other capacitive loads.

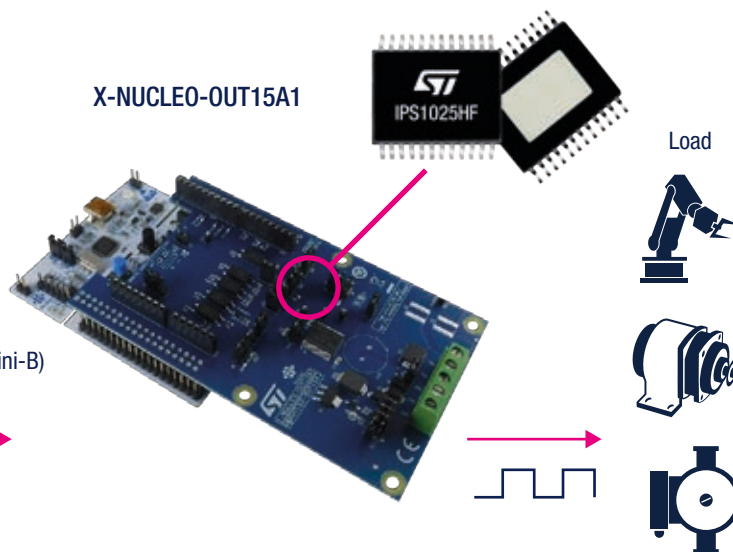
These high-side switch ICs high ensure higher reliability and robustness for industrial machinery through dedicated overload and overtemperature diagnostic pins.

To help developers implement the full application benefits, ST offers evaluation and expansion boards for STM32 Nucleo. Software resources include STM32Cube expansion software, reusable demonstration code, and an intuitive graphical user interface (see table below).



STSW-IFAPGUI software on PC

USB Micro-B (or Mini-B) connector



Order code	Package	Packing	Current limitation (A)	Evalboard order code	Software	Related documents
IPS1025HF	PowerSS0-24	Tube	2.5	X-NUCLEO-OUT15A1	X-CUBE-IPS	DB4730, UM3036
IPS1025HFTR		Tape & reel		STEWAL-IFP040V1		
IPS1025HFQ	QFN48L (8 x 6 mm)					DB4775, UM3052

