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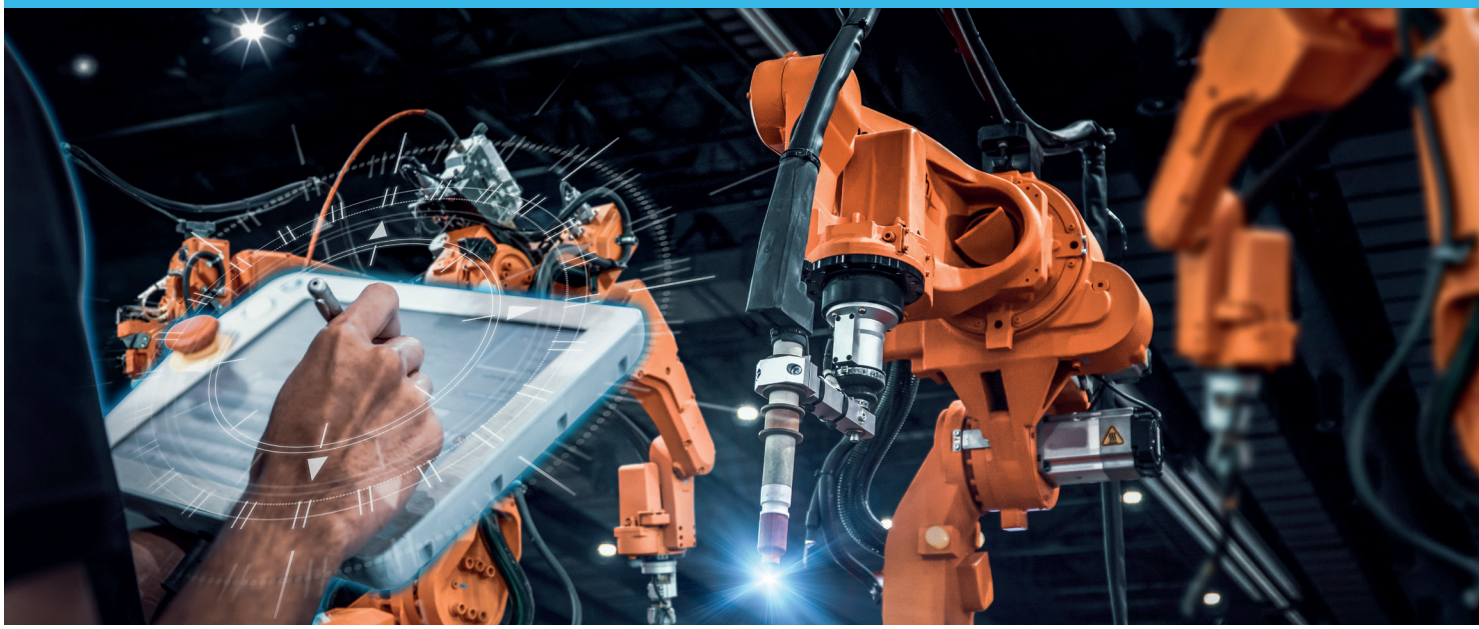
IPS1025H, IPS1025H-32

Smart load management solution for advanced factory automation



High-efficiency single high-side switch IC featuring extended diagnostics and embedded overload protection with smart driving of capacitive load

ST's new series of intelligent power switches (IPS) offer an intuitive smart load management feature to drive any industrial load correctly.

The IPS1025H and IPS1025H-32 are specifically designed to meet the requirements of smart load applications for Safety Integrity Level systems thanks to a 60 V operating voltage and embedded protections and diagnostics.

KEY FEATURES

- 8 to 60V operating voltage
- Very low $R_{DS(on)}$: 25 mΩ (max.)
- Load current limitation:
  - 2.5A (min.) IPS1025H
  - 5.7A (min.) IPS1025H-32
- Smart driving of capacitive load:
  - Programmable initial current threshold (ILIMH) 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 lockout
- 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

LONGEVITY 15 YEARS COMMITMENT

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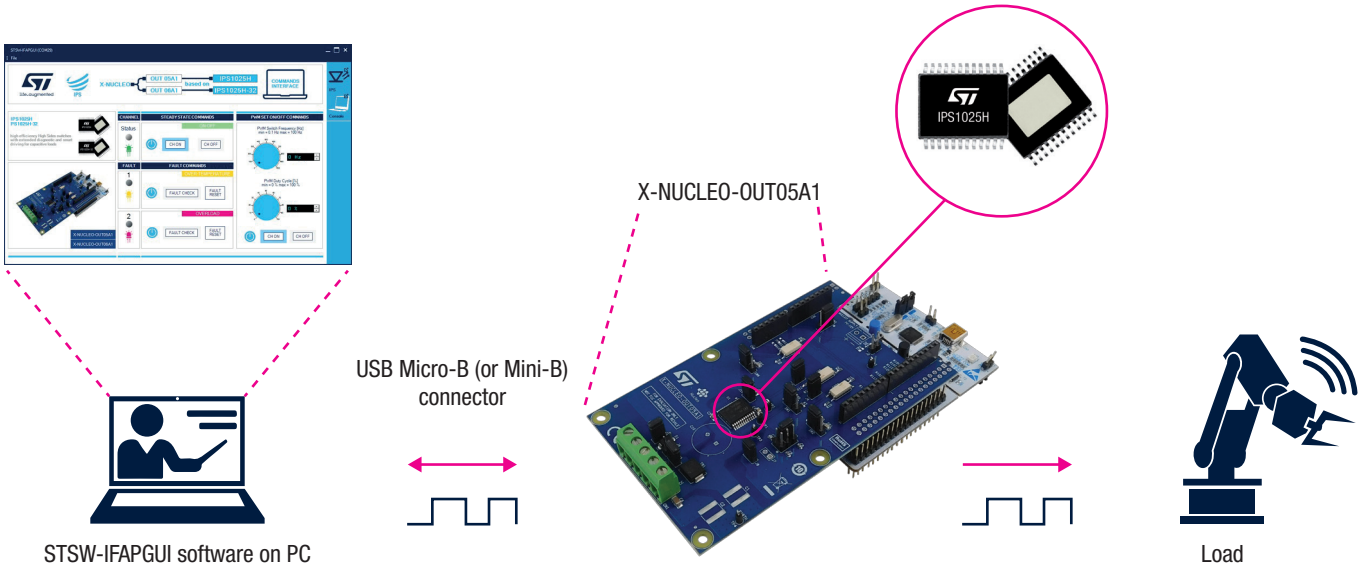
Hands-on development

The IPS1025H and the IPS1025H-32 are monolithic, single-channel, high-side switch ICs that can drive capacitive, resistive, or inductive loads with one side connected to ground. The operating voltage ranges from 8V to 60V, with 65V breakdown voltage on the supply. The only difference between the two devices is the internal current limitation (2.5A for the IPS1025H and 5.7A for the IPS1025H-32).

The output stage is an N-channel Power MOSFET with a typical $R_{DS(on)}$ of 12mΩ at ambient temperature, output current internally limited at 2.5A (min.) for the IPS1025H and 5.7A (min) for the IPS1025H-32. Both ICs allow two different current limitation settings (ILIMH and ILIML) for smart driving of loads with initial inrush current requirements (e.g., bulb lamps) or any other capacitive load.

Each of these high side switch ICs offer dedicated diagnostic pins for signaling overload and overtemperature events, making them ideal for robust machinery solutions.
To help developers explore the features and application benefits, ST offers evaluation and expansion boards for STM32 Nucleo, as well as STM32Cube expansion software, demonstration firmware, and an intuitive graphical user interface (see table below).



Order code	Package	Packing	Current limitation (A)	Evaluation Board Order Code	Software	Related documents
IPS1025H	PowerSSO-24	Tube	2.5	X-NUCLEO-OUT05A1	X-CUBE-IPS	DB4211, UM2865
IPS1025HTR		Tape & Reel				
IPS1025HQ	QFN48L (8x6mm)			STEVAL-IFP045V1		DB4786, UM3057
IPS1025H-32	PowerSSO-24	Tube	5.7	X-NUCLEO-OUT06A1		DB4212, UM2866
IPS1025HTR-32		Tape & Reel				
IPS1025HQ-32	QFN48L (8x6mm)			STEVAL-IFP046V1		DB4787, UM3058