

ISO808 intelligent power switches



Galvanically isolated, 8-channel high-side power switches



Intelligent power switches with built-in galvanic isolation and SPI/parallel control interface offer lower BOM costs, reduced PCB space and improved reliability

Embedding very robust galvanic isolation and a flexible SPI/parallel control interface, our ISO808 family of intelligent power switches (IPS) help build very reliable and robust applications thanks to a full set of protections, diagnostics, and a high avalanche energy (EAS) rating for fast demagnetization of huge loads.

The built-in isolation combined with a compact QFN package reduces the number of required BOM components and saves PCB space, while the very robust PowerSO-36 package ensures highly efficient power management.

KEY FEATURES & BENEFITS

- Embedded galvanic isolation
- 9.2 to 36 V operating voltage
- Very low RDS(on): 260 mΩ/ch (max)
- EAS = 2.1 J (0.5 QFN version)
- SPI version "A" up to 20 MHz with daisy chaining
- Supply voltage level diagnostic pin (PGOOD)
- Load current limitation:
 - 0.7 A (min.) ISO808, ISO808A
 - 1.0 A (min.) ISO808-1, ISO808A-1
- Common fault diagnostics
- OVL / OVT protections per chn
- Case overtemperature protection
- Vcc overvoltage protection
- GND/Vcc disconnection protection
- UVLO with auto restart and Hysteresis
- Fast demagnetization/Output voltage clamp for inductive loads
- Certified UL1577, UL508 and VDE 0884-11 / IEC 60747-17 compliance
- Packages: PowerSO-36 / QFN32L 9x11 mm

KEY APPLICATIONS

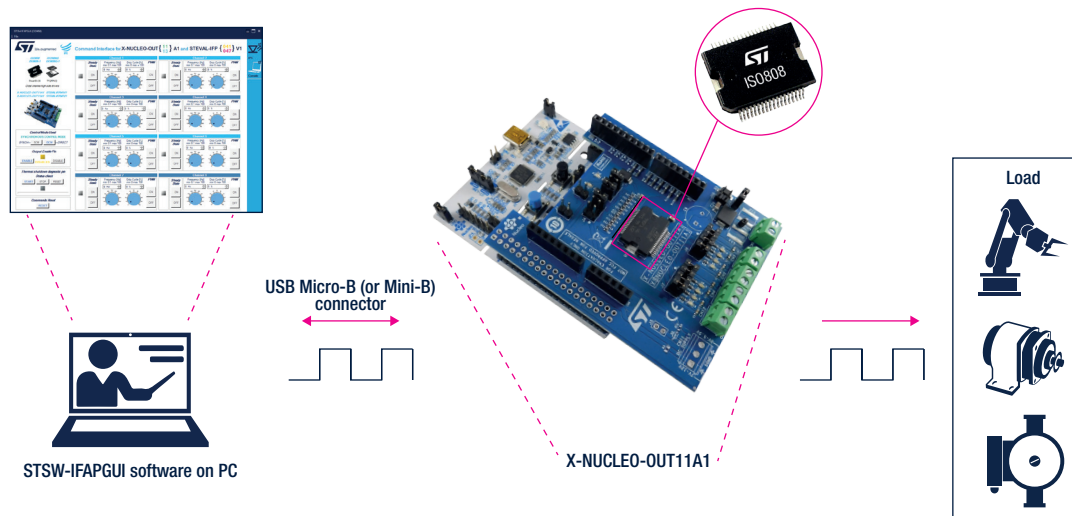
- Programmable logic controls (PLC)
- Industrial PC peripheral I/Os
- Computer Numerical control (CNC)
- Drivers for all type of loads (resistive, capacitive, inductive)
- General high-side switching applications

Hands-on development

The ICs are intended for driving any type of industrial load, capacitive, resistive, or inductive, with one side connected to ground (high-side switch). Each IC contains two independent voltage domains, VCC and VDD for the Process and Control Logic stages, respectively. Thanks to an ST proprietary protocol, the domains communicate through galvanically isolated channels which leads to a reduced number of required BOM components. The wide operating range makes the ICs suitable both for 12 and 24 V applications.

Each of the eight output stages is a full-protected N-channel Power MOSFET with a typical $R_{DS(on)}$ of 125 mΩ at ambient temperature providing lower power dissipation and reduced power losses. Housed in a robust PowerSO-36 or tiny QFN32L 9x11 mm package, these distinctive 8-channel high-side power switches offer better thermal performance than competition and include features such as a Power Good diagnostic pin useful for monitoring the status of the VCC power supply on the process side.

In addition to an extensive set of diagnostics for Smart Factory applications, these ICs are suitable for industrial applications as they comply with IEC 61000-4-2 / 4/ 5 / 8 EMC specifications, UL1577 / UL508 digital isolator specifications and safety limits according to VDE 0844-11. To help developers take advantage of all the benefits of this unique IPS family, ST offers evaluation and expansion boards for STM32 Nucleo. A full set of Software resources including STM32Cube expansion software, reusable demonstration code, and an intuitive graphical user interface is also available to reduce design cycles and speed up time to market.



Order code	Package	Packing	Current limitation (A)	Input version	Evalboard order code	Software	Related documents
ISO808	PowerSO-36	Tube	0.7	Parallel	X-NUCLEO-OUT11A1	X-CUBE-IPS	DB4833, UM3079
ISO808TR	PowerSO-36	Tape and reel			STEVAL-IFP041V1		DB4949, UM3135
ISO808QTR	QFN 9 X 11						
ISO808-1	PowerSO-36	Tube	1		X-NUCLEO-OUT13A1		DB4835, UM3081
ISO808TR-1	PowerSO-36	Tape and reel			STEVAL-IFP047V1		DB4951, UM3137
ISO808QTR-1	QFN 9 X 11						
ISO808A	PowerSO-36	Tube	0.7	SPI	X-NUCLEO-OUT12A1		DB4834, UM3080
ISO808ATR	PowerSO-36	Tape and reel			STEVAL-IFP042V1		DB4947, UM3136
ISO808AQTR	QFN 9 X 11						
ISO808A-1	PowerSO-36	Tube	1		X-NUCLEO-OUT14A1		DB4836 UM3082
ISO808ATR-1	PowerSO-36	Tape and reel			STEVAL-IFP048V1		DB4953, UM3138
ISO808AQTR-1	QFN 9 X 11						



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