

STMicroelectronics' intelligent power switch automatically adjusts to handle inrush current

Flexible current limiting eases control of resistive, capacitive, or inductive loads

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STMicroelectronics' [IPS1050LQ](#) low-side switch IC provides flexible overcurrent protection, including a static mode with fixed, programmable current limit and a dynamic mode that safely handles high inrush current. With a maximum rating of 65V, for the output stage, the IC can be used in equipment such as programmable logic controllers (PLCs), factory automation, and CNC machines.

The IC has three pins for selecting the static or dynamic mode and setting the operating current limit, allowing eight permissible values. In static mode, the activation level and threshold can be set using external resistors or by driving the pins from the GPIO ports of a microcontroller or ASIC. Connecting a capacitor to one or more of the pins selects the dynamic mode, which sets an initial limit of up to 25A to allow for inrush current. The limit reduces automatically in stages, with each duration determined according to capacitance value, before reaching the desired operating current limit.

Based on STMicroelectronics' proven M0T5 VIPOWER technology, the IPS1050LQ has typical RDS(on) of just 25mΩ, ensuring energy-efficient switching for resistive, capacitive, or inductive loads, including DC-13 loads under IEC 60947-5-1. Active clamping ensures fast demagnetization of inductive loads at turn-off, while built-in safety features include under-voltage, over-voltage, overload, short-circuit, ground-disconnection, Vcc-disconnection, and thermal protection with a dedicated overtemperature-indicator pin.

The X-NUCLEO-DOL10A1 expansion card for STM32 Nucleo development boards lets developers explore the IPS1050LQ diagnostic and driving capabilities, including stacking multiple cards to evaluate multichannel modules.



The IPS1050LQ is in production now, in a 6mm x 6mm QFN32L package. Pricing starts from \$2.19 for orders of 1000 pieces.

Visit www.st.com/ips1050lq for more information.

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