ZITHA TECH SPECIALTY CABLES (Pty) Ltd

Where is the intelligent integrated power switch



Overview

Intelligent Power Switches (IPS) ST offers a series of intelligent power switches (IPS) for high-side and low-side configurations, integrating the control.

Key Takeaways

An intelligent integrated power switch (IPS) is a semiconductor device that combines a power switch with control, protection, and diagnostic features on a single chip, available from manufacturers like Infineon and STMicroelectronics.What It Is

An intelligent power switch is a high-performance MOSFET or IGBT switch that integrates the power stage with control logic, diagnostic circuits, and protection mechanisms. It can handle resistive, inductive, or capacitive loads while providing features such as overcurrent protection, short-circuit shutdown, overtemperature protection, and self-recovery, making it more reliable than traditional fuses or relays (Infineon, STMicroelectronics, DigiKey) .

Configurations

IPS devices are available in high-side and low-side configurations. High-side switches connect the load to the positive supply, while low-side switches connect it to ground. These devices are compact, cost-effective, and suitable for industrial automation, automotive systems, PLCs, elevators, vending machines, and other applications requiring robust load control (STMicroelectronics, DigiKey) .

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Key Features
• Integrated control section with logic interface and gate drivers

• Built-in diagnostics for microcontroller feedback

• Protection circuits against overcurrent, short-circuit, and overtemperature

• Self-recovery capability without replacing components

• Compliance with standards like IEC 61000 for ESD, surge, and fast-transient immunity
Where to Find

Intelligent power switches can be sourced from major semiconductor manufacturers and distributors:

• Infineon Technologies: Offers low and high-side smart power switches for automotive and industrial applications

• STMicroelectronics: Provides IPS devices with wide voltage ranges and selectable current limits

• DigiKey: Distributor of ST IPS devices and other intelligent power switches for industrial use These devices are typically available as integrated ICs and can be purchased online through manufacturer portals or electronics distributors. For detailed specifications, datasheets, and application notes, visiting the manufacturer websites is recommended.

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