

Independent Power Supply and Integrated Power Supply



Article Overview

Independent power supplies operate separately from the main circuit, while integrated power supplies are built into the device, providing compact, self-sufficient power to isolated sections.

Independent Power Supply

An independent power supply is a standalone unit that provides power to a circuit or device without relying on internal integration. In digital isolators or multi-switch systems, independent supplies are often required for high-side and low-side MOSFETs or isolated circuit sections to ensure proper operation and electrical isolation. Key characteristics include:

- **Separate power rails:** Each section of the circuit may require its own voltage and ground, with no direct electrical connection between them.
- **Flexibility:** Designers can select voltage levels and power ratings tailored to specific components or loads.
- **Complexity and size:** Requires additional components like transformers, discrete DC/DC converters, or bootstrap circuits, which can increase board space and design complexity.
- **Applications:** Common in high-voltage systems, multi-channel converters, and circuits requiring strict isolation for safety or performance.

Integrated Power Supply...

Article Content

Nov 12, 2025

INTEGRATED POWER DEVICES SIMPLIFY AN EMBEDDED DC-DC POWER SUPPLY

Abstract A new class of integrated power devices has been developed to simplify embedded dc-dc power supply designs. The paper

Nov 10, 2025

Introduction

Digital isolators have made significant progress with the introduction of integrated power, marking a notable advancement in isolator

Nov 06, 2025

HIR2021 F Power

The IPECs may be partitioned and integrated in multiple ways within the System in Package, or be a standalone

Apr 17, 2026

Intelligent Power Supply Design Solutions

Highly integrated products feature peripheral support for up to four independent Switch Mode Power Supplies, with built-in LED

May 17, 2026

Isolated vs Non-Isolated Power Supplies: The Right Choice ...

Learn the advantages and disadvantages of isolated vs non-isolated power supply design.

Mar 03, 2026

Different Types of UPS: Complete Guide to Uninterruptible Power

Understanding UPS System Classifications Different types of UPS systems provide varying levels of power protection, each

Jan 11, 2026

Intelligent Power Supply Design Solutions

The board has an LCD display for voltage, current, temperature and fault conditions, and an integrated programmer/debugger, all

Nov 20, 2025

Designing Multiple Independent Auxiliary Power Supplies with

This article explores how to design multiple independent auxiliary power supplies and wireless power transmission systems to

Feb 10, 2026

Comparing the Merits of Integrated Power Modules versus Discrete ...

Clearly, the design effort behind using a fully integrated power module is less than that of a discrete supply. But within the discrete

Oct 23, 2025

What role do independent power producers (IPPs) play

Learn about solar IPPs, independent entities that own and operate power generation

Oct 31, 2025

The 2 Key Advantages of an Integrated Power Supply | TEGUAR

We'll explain the integrated power supply and dive into the reliability, efficiency, and safety it provides to medical devices.

Feb 07, 2026

Revolutionizing Power Supplies: The Advantages of Integrated Power ...

This article explores the numerous advantages of using integrated power modules over traditional discrete DC/DC power supplies.

Aug 18, 2025

Intelligent Power Supply Design Solutions

The integrated Core Independent Peripherals (CIPs) provide signal generation, custom logic and signal conditioning to augment

Mar 27, 2026

Integrated Energy System

Integrated energy systems (IES) refer to interdependent and interacting energy sources, supply networks, and demand organized for

Aug 24, 2025

Integrated Power Supply: A Detailed Overview

Fundamentals of Integrated Power Supplies An integrated power supply is a self-contained electronic circuit or module that provides

Aug 27, 2025

Common Questions for isolating signal and power in a design

Many options are available when designing an isolated power supply for digitally isolated circuits. Power solutions for

Aug 14, 2025

Isolated power modules (integrated transformer) | TI

Our portfolio of isolated power modules combines high-density integrated field-effect transistor and integrated transformer technology

Dec 07, 2025

Integrated Power Designs AC-DC & DC-DC Power Supplies

Click here to read more AVAILABLE NOW! is the NXT-700 - 700 Watt AC-DC Multi Output Power Supply! Click here to read

Feb 16, 2026

Uninterruptible Power Systems

Uninterruptible Power Supply (UPS) The purpose of this equipment is to provide a source of ac power during outages of the normal

Jun 21, 2026

INTEGRATED POWER DEVICES SIMPLIFY AN EMBEDDED DC

The paper also details how treating integrated devices as power supply modules instead of co-packaged components significantly

Jul 28, 2025

Independent Power Producers

Explore how independent power producers contribute to global energy. React Power discusses their role in creating

Jun 10, 2026

Integrated Power Designs Industrial Power Supplies

At Integrated Power Designs, we understand the vital role of dependable power supplies in industrial manufacturing. Our industrial

Oct 30, 2025

Designing Multiple Independent Auxiliary Power Supplies

In a modular multilevel converter (MMC), many independent power supplies are required to supply power to the gate-level driver

Oct 02, 2025

Comparing the Merits of Integrated Power Modules versus Discrete ...

Time to market, cost, size constraints, reliability, and design capabilities are among the motivating factors in choosing modular power

Jul 28, 2025

Monolithic Power Systems

Introduction. In a DC/DC converter, the auxiliary power supply of multiple switching devices requires independent isolated power

Jan 14, 2026

Heterogeneous Integration Roadmap, Version 1

These three categories, which are discussed in detail below, are (1) reducing power converter size; (2) delivering power efficiently;

Aug 07, 2025

Isolated vs Non-Isolated Power Supplies: The Right Choice ...

An understanding of isolated vs. non-isolated power supplies is all about designer and user safety. Here, we're not

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