# MAX16610A

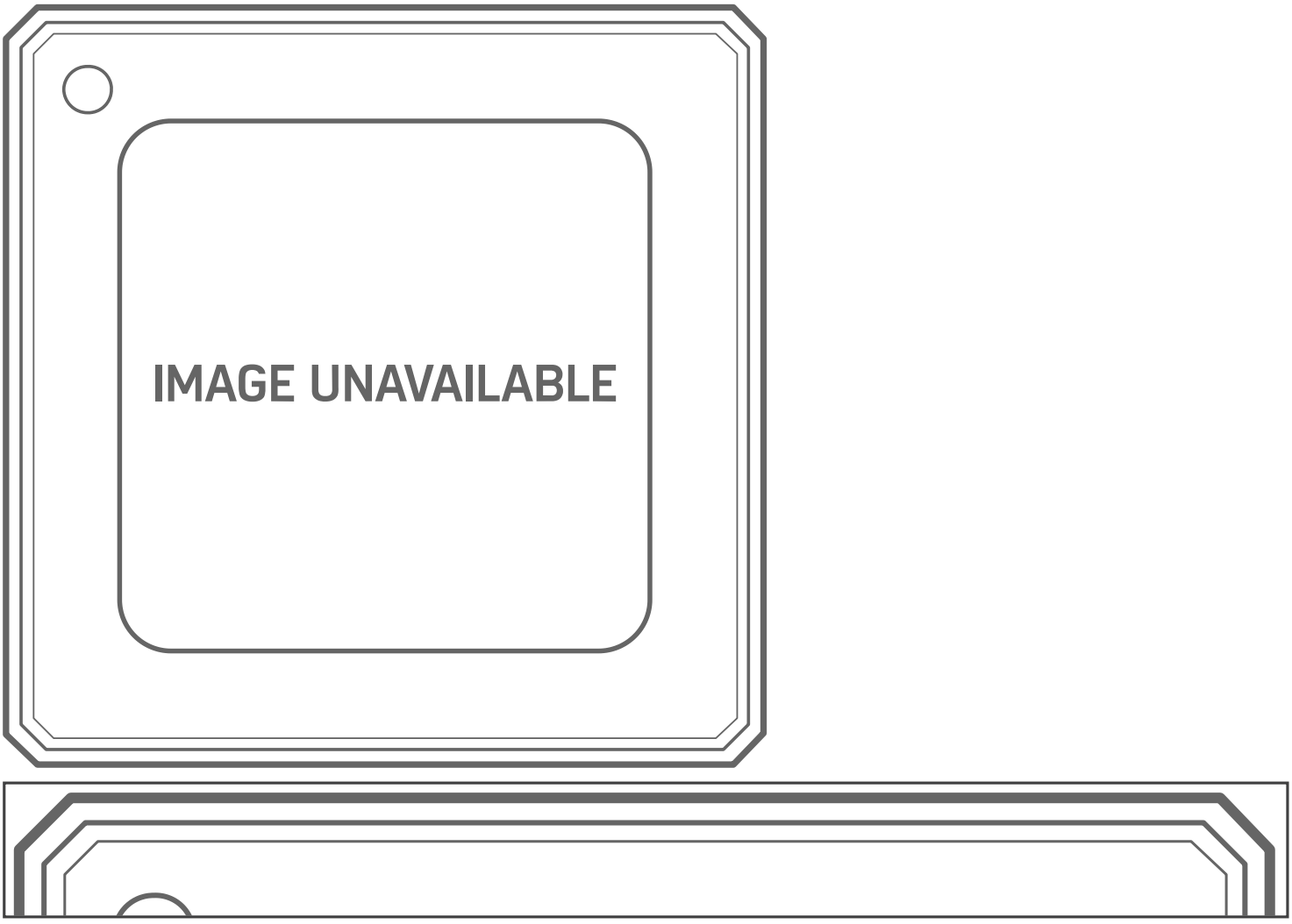
Switched Tank Converter (STC) Controller with Integrated Drivers

Industry's First Integrated STC that Maximizes Efficiency and Reliability with Adaptation Alogorithm

BUY NOW

Recommended for New Designs

MENU




# Overview

## Features and Benefits  Product Details

- High Density and Simplified Design
  - Integrated Drivers for 10 FETs
  - Integrated Floating Domains Generation
- Efficiency Optimization Regardless of Component Variation
  - Adaptive On-Time Algorithm Ensures ZCS
  - Support for Wide Range of Baseline Resonant Frequencies
- Higher Reliability
  - Adaptive Algorithm Enforces a Minimum Off Time

    - Prevents Component Over-Stress and Excessive Peak Currents
- Protection Features
    - Input Overcurrent Protection (Latching)
    - Output Overvoltage Protection
        - Soar Mitigation and OVP
    - Bias-Supply Undervoltage Protection
    - Component Failure Protection
    - Fault/Output Voltage Indicators
        - Critical Fault-Flag Output Pin
        - Power Good Indicator

The MAX16610/MAX16610A ICs are highly integrated, scalable, controllers for a switched tank converter (STC) topology. The STC provides highly efficient zero-current switching (ZCS) voltage conversion from a 60V–40V input bus to an intermediate bus voltage. The intermediate bus voltage is unregulated and is approximately a quarter of the input voltage.

The 4:1 STC topology has 10 FETs that need to be driven, with only 3 of the FETs connected to ground. The MAX16610/MAX16610A provide an extremely dense solution with integrated drivers and generation of floating supplies.

An adaptation algorithm tunes the STC on-times to maintain ZCS, regardless of variations in and tolerances of the STC components (e.g., temperature coefficient, aging, and voltage derating). With the adaptation algorithm, a MAX16610/MAX16610A-controlled STC can use Class II capacitors in the resonant tanks to save on cost and improve efficiency compared to Class I capacitor designs.

Multiple fault protection features prevent damage to the STC converter and downstream components.

**Applications**

- DDR Memory
- High-Power VR13.HC CPUs
- Machine Learning ASICs and Accelerator Cards
- Networking ASICs

# Product Categories

Power Monitor, Control, and Protection

High-Side Switches and MOSFET Drivers

---

Complete documentation is available upon completion of a Non-Disclosure Agreement (NDA). To request an NDA, click here.

---

# Product Lifecycle Recommended for New Designs

This product has been released to the market. The data sheet contains all final specifications and operating conditions. For new designs, ADI recommends utilization of these products.