



FD2006 — Adaptive Digital DC-DC Controller with Drivers and Current Sharing

1. Overview

1.1. Features

Power Conversion

- Efficient Synchronous Buck Controller
- Adaptive Light Load Efficiency Optimization
- 3V to 14V Input Range
- 0.54V to 5.5V Output Range (with Margin)
- $\pm 1\%$ Output Voltage Accuracy
- Internal 3A MOSFET Drivers
- Fast Load Transient Response
- Current Sharing and Phase Interleaving
- *Snapshot™* Parametric Capture Mechanism
- QFN 6 x 6mm Package

Power Management

- Digital Soft-Start / Stop
- Precision Delay and Ramp-up
- Power-Good / Enable
- Voltage Tracking, Sequencing, and Margining
- Voltage / Current / Temperature Monitoring
- I²C/SMBus Interface, PMBus™ Compatible
- Output Voltage and Current Protection
- Internal Non-Volatile Memory (NVM)

1.2. Applications

- Servers / Storage Equipment
- Telecom / Datacom Equipment
- Power Supplies (Memory, DSP, ASIC, FPGA)

1.3. Description

The FD2006 is a digital DC-DC controller with integrated MOSFET drivers. Current sharing allows multiple devices to be connected in parallel to source loads with very high current demands. Adaptive performance optimization algorithms improve power conversion efficiency across the entire load range. Proprietary Digital-DC™ technology enables power conversion performance and power management features.

The FD2006 is designed to be a flexible building block for DC power and can be easily adapted to designs ranging from a single-phase power supply operating from a 3.3V input to a multi-phase supply operating from a 12V input. The FD2006 eliminates the need for complicated power supply managers, as well as numerous external discrete components.

All operating features can be configured by pin-strap / resistor selection or through the SMBus serial interface. FD2006 uses the PMBus protocol for communication with a host controller. For inter-device communication with other Digital-DC devices, a single-wire DDC bus is used.

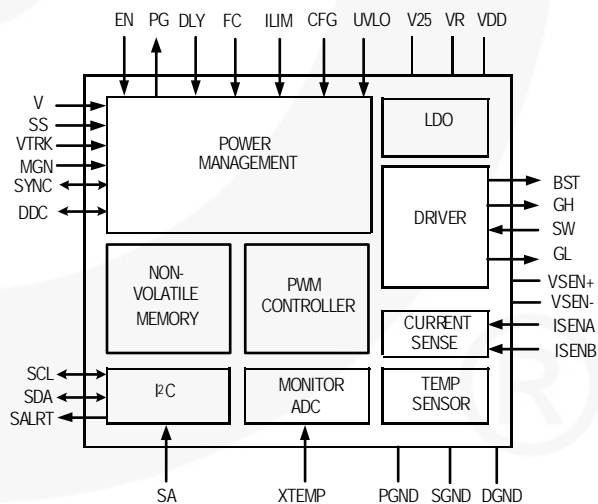


Figure 1. Block Diagram



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