SC1471
Power Supply Controller for Portable Pentium® III SpeedStep™ Processors

Description

The SC1471 PowerStep™ II controller is a high speed, high performance hysteretic mode PWM controller. Teamed with the SC1405 Smart Driver™ , it powers advanced Intel® Pentium® III processors. The SC1471 features extended Intel Mobile Voltage Positioning (IMVP) to increase battery life by reducing the voltage at the processor when it is heavily loaded. It directly supports Intel® SpeedStep™ processors for even longer battery life, including IMVP extensions. The SC1471 incorporates direct "deeper sleep" mode support, which eliminates an external multiplexer in many applications.

A 5-bit DAC, accurate to 0.85%, sets the output voltage reference and implements the 0.600V to 1.750V range required by the processor. The hysteretic converter uses a comparator without an error amplifier, and therefore provides the fastest possible transient response, while avoiding the stability issues inherent to classical PWM controllers.

The SC1471 operates from either 3.3Vdc or 5Vdc Vcc and also features soft-start, an open-drain power-good indication with power-good blanking, and an enable input. Programmable current limiting uses a separate comparator to protect against overloads and short-circuits. In addition, it comes in a space-saving TSSOP-24 package.

Features

- Direct "deeper sleep" mode support
- High-speed hysteretic controller provides high efficiency over a wide operating load range
- Fastest possible transient response
- Inherently stable
- Integrated extended IMVP support
- Programmable core voltage for Pentium® III processors
- Native Intel® SpeedStep™ support with PWRGD blanking
- Proportional overvoltage protection
- Overcurrent shutdown after 32 overcurrent pulses
- SC1471A also available for VID controlled "Deeper Sleep" mode

Applications

- Laptop and notebook computers
- High performance microprocessor-based systems
- High efficiency distributed power supplies

Typical Application Circuit