

33V 6A 700KHz Fast-PWM Synchronous Step-Down Converter

DESCRIPTION

The MT3886 is a fully integrated high efficiency synchronous step-down converter which requires minimum number of external components. It offers very compact solution with up to 6A continuous output current over a wide input range. The MT3886 employs proprietary Constant On-Time (COT) control scheme providing superior transient response and maintaining constant switching frequency under the continuous conduction mode operation. The internal ramp compensation network allows stable operation with ultra-low equivalent series resistance (ESR) output ceramic capacitors without using external compensation network. An error amplifier in the control loop provides excellent line and load regulation. The MT3886 integrates extensive protection functions including: Input under-voltage lockout (UVLO) and over-voltage protection, thermal shutdown, output over-voltage protection (OVP), cycle by-cycle current limiting, and hiccup mode short-circuit protection. An open drain power good signal indicates the output within its regulation voltage range. The converter is available in a small QFN2X3 12L package.

FEATURES

- Input Voltage Range from 4.5V to 33V
- Output Voltage Range from 0.6V to 33V
- Support Near 100% duty cycle Low Dropout Operation
- 1% 0.6V Feedback Voltage Accuracy
- 6A continuous output current
- Selectable 3 Operation Modes: PFM, Ultrasonic Mode (UAM) and Forced PWM Mode
- Stable operation with output low ESR ceramic capacitors
- 700kHz Switching Frequency
- Integrated 21mΩ and 10mΩ HS/LS-Switches
- Low quiescent current (PFM mode)
- Accurate enable threshold voltage
- Thermal Shutdown
- Short Circuit Hiccup Mode Protection:
- Small QFN2X3 12L package

APPLICATIONS

- USB Type-A or C and PD Dongle and Docking Station
- Tablet PC
- Networking Systems
- Flat Panel Television and Monitors
- Distributed Power Systems

TYPICAL APPLICATIONS

