32V 500KHz 5A Fast-PWM Synchronous Step-Down Converter

DESCRIPTION

The MT8905 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 5A continuous output current over a wide input range.

The MT8905 employs proprietary Constant On-Time (COT) control scheme providing superior transient response and maintaining constant switching frequency under the continuous conduction mode operation. The external ramp compensation network allows stable operation with ultra-low equivalent series resistance (ESR) output ceramic capacitors. An error amplifier in the control loop provides excellent line and load regulation.

The MT8905 integrates extensive protection functions include: UVLO, OCP, OVP and thermal shutdown. Input under- voltage lockout is internally set as 3.8V.

The unique ultrasonic pulse-skipping mode (MT3905U) maintains the switching frequency above 25KHz, which eliminates noise in audio applications. Other features include pulse skipping mode (MT8905N), which maximizes efficiency in light-load applications.

The converter is available in a small 8pin SOP8_EP and DFN4x3_14L package.

FEATURES

- 4V to 32V Input Voltage Range with Surge Up to 36V
- +/-2% 0.8V Feedback Voltage Accuracy
- 5A continuous output current
- Support 100% duty cycle Low Dropout Operation
- Stable operation with output low ESR ceramic capacitors
- Fast PWM Constant On Time (COT) control scheme with superior transient performance
- 500KHz Switching frequency with 2 Type Light Load Mode Control Schemes: MT8905U Ultrasonic Pulse Skip Mode (25KHz Min); MT8905N Pulse Skip Mode
- Integrated 40mΩ and 40mΩ High Side and Low Side Switches
- Accurate EN Threshold for the External Programmable VIN UVLO
- Low quiescent current
- Thermal Shutdown with Auto recovery.
- Available in SOP8_EP and DFN4x3_14L Package

APPLICATIONS

- Laptop Computer
- Tablet PC
- Networking Systems
- Personal Video Recorders
- Flat Panel Television and Monitors
- Distributed Power Systems

TYPICAL APPLICATIONS