

18V 1.5MHz 3A Fast-PWM Synchronous Step-Down Converter

DESCRIPTION

The MT3593 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 3A continuous output current over a wide input range.

The MT3593 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 internal compensated error amplifier in the control loop provides excellent line and load regulation.

The MT3593 integrates extensive protection functions include: UVLO, OCP, UVP and thermal shutdown. The converter is available in a small 6pin SOT563.

FEATURES

- Input Voltage Range: 4.5V to 18V
- Output Voltage range: 0.804V to 18V
- 3A continuous output current
- Support 100% duty cycle Low Dropout Operation
- Stable operation with low ESR ceramic output capacitors
- Fast PWM COT control with superior transient performance and stable switching frequency.
- 1.5MHz Switching frequency
- Internal 1.6ms Soft-start
- Integrated 60mΩ/ 37mΩ HS/LS Power Switches
- Accurate EN UVLO threshold
- High Efficiency Operation at light load MT3593N
- Thermal Shutdown with Auto recovery.
- Hiccup mode short circuit protection
- Available in a 6-pin SOT563 Package

APPLICATIONS

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

TYPICAL APPLICATIONS

