

6V 4A 1.2MHz Fast-PWM Synchronous Step-Down Converter

DESCRIPTION

The MT3194 is a 6A high efficiency constant on-time controlled synchronous step-down converter. It operates with input voltage from 2.7V to 6V and provides output range from 0.6V to as high as input level, thanks to its 100% duty cycle operation. Its advanced constant on-time control Fast-PWM scheme simplifies loop compensation and offers excellent load transient response while maintaining a relatively constant 1.2MHz switching frequency. MT3194 (MODE=0V) consumes extremely low 18µA quiescent current hence achieves superior light load efficiency. The high gain error amplifier in the control loop provides excellent load and line regulation. For fault tolerant operation, MT3194 has cycle-by-cycle current limit protection and hiccup mode for short circuit or over-load condition. MT3194 is available in 12 lead QFN 2mmx3mm package and ideal for high performance, portable applications.

FEATURES

- Wide Input Range from 2.7V to 6V
- +/- 1% 0.6V Feedback Voltage Accuracy
- 18µA Quiescent Current (MODE=0V)
- High Efficient Light Load Mode Control
MODE=0V: Pulse Skip Mode (PSM)
MODE=VIN: Forced PWM Mode (FPWM)
- 4A Output Current
- High Efficiency up to 97%
- Internal 2.1msec Soft-Start
- 100% Duty Cycle Operation
- Built-in Ultra Low Ron High Side and Low Side Power Switches
- Cycle-by-cycle Current Limit Protection
- Hiccup Mode for Short Circuit and Over-Load Protection
- Internal 500k pull up resistor Power Good Indicator
- Thermal Shutdown Protection
- Stable with low ESR ceramic Output Capacitors
- Available in a Small QFN 2mmx3mm_12L Package
- Pb-Free RoHS Compliant

APPLICATIONS

- Solid-State and Hard Disk Drives
- Portable / Handheld Devices
- WiFi Module, Set-top Boxes
- DC/DC Micro Modules

TYPICAL APPLICATIONS

