

5.5V 4A 1.2MHz Fast-PWM Synchronous Step-Down Converter

DESCRIPTION

The MT8194 is a 4A high efficiency constant on-time controlled synchronous step-down converter. It operates with input voltage from 2.7V to 5.5V 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. MT8194 (MODE=0V) consumes extremely low 20µA 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, MT8194 has cycle-by-cycle current limit protection and hiccup mode for short circuit or over-load condition.

MT8194 is available in 12 lead QFN 2mmx3mm package and ideal for high performance, portable applications.

FEATURES

- Wide Input Range from 2.7V to 5.5V
- +/- 1% 0.6V Feedback Voltage Accuracy
- 20µA 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 0.8msec 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
- Open Drain Power Good Indicator
- Output Discharge 20 Ω
- 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 Drive
- Portable / Handheld Device
- WiFi Module, Set-top Box
- DC/DC Micro Module

TYPICAL APPLICATIONS

