

5V Input 4A 2.1MHz Synchronous Step-Down DC/DC Converter

DESCRIPTION

The MT8894 is a 4A high efficiency constant on-time controlled synchronous step-down converter.

It operates with input voltage from 2.5V to 5.5V and provide 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 2.1MHz switching frequency.

MT8894N consumes extremely low 18 μ A 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, MT8894 has cycle-by-cycle current limit protection and hiccup mode for short circuit or over-load condition.

The MT8894 is available in DFN1.5mm x 1.5mm_6L package and ideal for high performance, portable applications.

FEATURES

- 2.5V to 5.5V Input Voltage Range
- 4A Continuous Output Current
- Ultra-Fast Load Transient Speed
- Low RON for Internal Switches (HS/LS): 34m Ω /21m Ω
- High Switching Frequency 2.1MHz Minimizes the External Components
- $\pm 1\%$ Feedback or Output Voltage Accuracy
- PFM Mode for Light Load Efficiency
- 18 μ A Operating Quiescent Current for MT8894N
- Forced PWM mode for MT8894A
- Internal Soft-Start Limits the Inrush Current
- 100% Duty Cycle Operation
- Output Auto Discharge Function
- Power Good Indicator
- Hiccup Mode for Short Circuit and Over-Load Protection
- Over Voltage Protection
- Thermal Shutdown Protection
- Compact Package: DFN1.5x1.5_6L
- Pb-Free RoHS Compliant

APPLICATIONS

- Portable Electronics
- Solid-State Drive
- Wireless and DSL Card
- Industrial Mini PC

TYPICAL APPLICATION

