

5V 4A 1.25MHz 15µA Low Iq FAST-PWM Synchronous Step-Down Converter

DESCRIPTION

The MT3123/MT3123A is a 4A high efficiency constant on-time controlled synchronous step-down converter. It operates with input voltage from 2.5V to 6V 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 1.25MHz switching frequency. MT3123/MT3123A consumes extremely low 15µA 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, MT3123/MT3123A has cycle-by-cycle current limit protection and hiccup mode for short circuit or over-load condition.

MT3123/MT3123A is available in QFN3x3mm package and ideal for high performance, portable applications.

FEATURES

- Wide Input Range from 2.5V to 6V
- High Efficiency up to 97%
- Output Voltage as low as 0.6V
- 100% Duty Cycle Operation
- +/-1.5% 0.6V Feedback Voltage Accuracy
- 1.25MHz Pseudo Constant Switching Frequency
- 15µA Quiescent Current
- Continuous Output Current up to 4A
- Built-in 48mΩ HS and 38mΩ LS Power Switches
- Cycle-by-cycle Current Limit Protection
- Hiccup Mode for Short Circuit and Over-Load Protection
- Open Drain Power Good Indication with Internal Pull-up Resistor
- Thermal Shutdown Protection
- Stable with low ESR ceramic Output Capacitors
- Available in a Small QFN3x3mm_16L Package
- Pb-Free RoHS Compliant

APPLICATIONS

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

TYPICAL APPLICATIONS

