

5.5V 3A 2.2MHz Ultra-Small and Ultra-Low Noise Power Module

DESCRIPTION

The MTM006 is a step-down module converter with built-in power MOSFETs and inductor. The MTM006 achieves 3A of continuous output current. It operates with an input voltage from 2.5V to 5.5V and provides output range from 0.6V to as high as input level, thanks to its 100% duty cycle operation. Its proprietary Fast-PWM control scheme simplifies loop compensation and offers excellent load transient response while maintaining a relatively constant 2.2MHz switching frequency.

MTM006N consumes extremely low 20 μ A quiescent current hence achieves superior light load efficiency with PFM mode. MTM006A provides fast transient response and low output ripple with forced PWM mode. The high gain error amplifier in the control loop provides excellent load and line regulation. For fault tolerant operation, MTM006 has cycle-by-cycle current limit protection and hiccup mode for short circuit or over-load condition.

MTM006 is available in QFN2.5x3.5mm_18L package and ideal for high performance, portable applications.

FEATURES

- Wide Input Range from 2.5V to 5.5V
- 3A Continuous Output Current
- +/- 1% 0.6V Feedback Voltage Accuracy
- High Efficiency up to 96%
- Output Voltage as low as 0.6V
- 100% Duty Cycle Operation
- 2.2MHz Switching Frequency
- 20 μ A Low Quiescent Current for MTM006N
- Built-in 60m Ω HS and 35m Ω LS Power Switches
- Built-in high-performance inductor
- 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 Small QFN2.5x3.5mm_18L Package
- RoHS Compliant (100% Green Available)

APPLICATIONS

- Storage Solid-State and Hard Disk Drives
- Portable / Handheld Devices
- Optical Modules
- LDO Replacement
- DC/DC Micro Modules

TYPICAL APPLICATIONS

