

DESCRIPTION

The MT8166 is a 6A 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 0.61V 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 1.35MHz switching frequency. MT8166N 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, MT8166 has cycle-by-cycle current limit protection and hiccup mode for short circuit or over-load condition.

MT8166 is available in 14 lead QFN3mmx4mm package and ideal for high performance, portable applications.

FEATURES

- Wide Input Range from 2.7V to 5.5V
- MT8166N: 1.35MHz with Pulse Skip Mode (PSM)
MT8166A: 1.35MHz with Forced PWM Mode (FPWM)
- 6A Output Current, Peak up to 8A
- High Efficiency up to 97%
- Output Voltage as low as 0.61V
- 100% Duty Cycle Operation
- +/- 0.5% 0.61V Feedback Voltage Accuracy
- 18 μ A Quiescent Current (MT8166N)
- 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
- Thermal Shutdown Protection
- Stable with low ESR ceramic Output Capacitors
- Available in a Small QFN3mmx4mm_14L Package
- Pb-Free RoHS Compliant

APPLICATIONS

- Fully support 802.11ax
- Solid-State and Hard Disk Drives
- Portable / Handheld Devices
- WiFi Module, Set-top Boxes
- DC/DC Micro Modules

TYPICAL APPLICATIONS

