

2.7V to 5.5V 5A 1.35MHz Fast-PWM Synchronous Step-Down Converter

DESCRIPTION

The MT8165 is a 5A 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. The high gain error amplifier in the control loop provides excellent load and line regulation. For fault tolerant operation, MT8165 has cycle-by-cycle current limit protection and hiccup mode for short circuit or over-load condition. MT8165 is available in 14 lead QFN3mmx4mm package and ideal for high performance, portable applications.

FEATURES

- Wide Input Range from 2.7V to 5.5V
- MT8165A: 1.35MHz with Forced PWM Mode (FPWM)
- 5A 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
- 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 QFN3x4_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

