

**6V 6A/8A 1.2MHz Fast-PWM Synchronous Step-Down Converter**

**DESCRIPTION**

The MT3128 is a 6A/8A high efficiency constant on-time controlled synchronous step-down converter. It operates with input voltage from 2.7V to 6V 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 1.2MHz switching frequency. MT3128N consumes extremely low 18µA 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, MT3128 has cycle-by-cycle current limit protection and hiccup mode for short circuit or over-load condition. MT3128 is available in 20 lead QFN4x4 package and ideal for high performance, portable applications.

**FEATURES**

- Wide Input Range from 2.7V to 6V
- MT3128N: 1.2MHz with Pulse Saving Mode (PSM)  
MT3128A: 1.2MHz with Forced PWM Mode (FPWM)
- MT3128\_06: 6A Output Current  
MT3128\_08: 8A Output Current
- High Efficiency up to 97%
- Output Voltage as low as 0.61V
- 100% Duty Cycle Operation
- 1% 0.61V Feedback Voltage Accuracy
- 18µA Quiescent Current (MT3128N)
- 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 QFN4x4\_20L Package
- Pb-Free RoHS Compliant

**APPLICATIONS**

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

**TYPICAL APPLICATIONS**

