5V Input 1.5A 2.3MHz Synchronous Step-Down Converter

DESCRIPTION

The MT8821 is a 2.3MHz, constant on-time (COT) controlled synchronous step-down converter. It can provide 1.5A continuous output current with input voltage from 2.3V to 5.5V. The MT8821 output range is from 0.6V to input level, thanks to its 100% duty cycle operation. The constant on-time control scheme simplifies loop compensation and offers excellent load transient response. MT8821 consumes extremely low 25μA quiescent current hence achieves superior light load efficiency. The high gain error amplifier in the control loop provides excellent load and line regulation. Proprietary adaptive on-time helps MT8821 to achieve nearly constant switching frequency across load range. MT8821 has cycle-by-cycle current limit and hiccup mode to protect over-load or short circuit fault conditions.

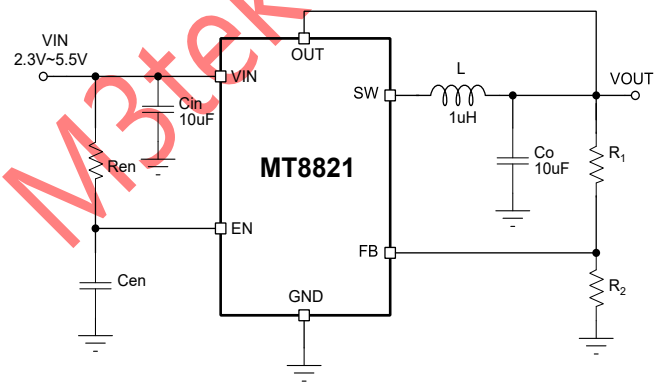
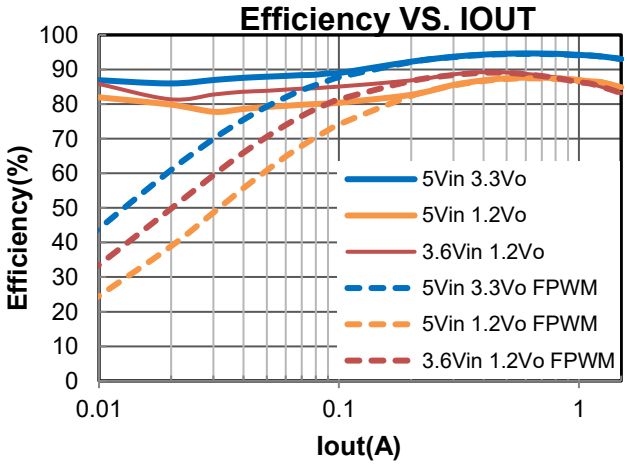
MT8821 is available in low profile 6 leads DFN 1.5mmx1.0mm packages.

FEATURES

- Wide Input Range from 2.3V to 5.5V
- Proprietary Fast Transient Constant On Time Architecture Stable with low ESR Ceramic Output Capacitors
- +/- 0.5% 0.6V Feedback Voltage
- 2.3MHz Switching Frequency
- MT8821NDGR with 25μA Low Quiescent Current
- 1A Continuous and Output Current
- 100% Duty Cycle Operation
- Built-in 120mΩ/60mΩ Power Switches
- Internal 0.5msec Soft-Start
- Cycle-by-cycle Current Limit Protection
- Input Under Voltage Lockout
- Output Discharging Function in Shutdown
- Thermal Shutdown Protection
- Hiccup Mode for Short Circuit and Over-Load Protection
- Available in DFN1.5x1.0_6L Package
- Pb-Free RoHS Compliant

APPLICATIONS

- Solid-State and Hard Disk Drives
- Wi-Fi RF Modules
- DC/DC Micro Modules
- Smart Phone and Tablets

M3tek Confidential Datasheet

TYPICAL APPLICATION