

## 5V Input 1A 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 1A 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 25 $\mu$ A 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 25 $\mu$ A Low Quiescent Current
- 1A Continuous and Output Current
- 100% Duty Cycle Operation
- Built-in 120m $\Omega$ /60m $\Omega$  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

## TYPICAL APPLICATION

