

5V Input 2A 2.5MHz Synchronous Step-Down Converter

DESCRIPTION

The MT3101 is a 2.5MHz, 2A constant on time (COT) controlled synchronous step-down converter. It can operate with input voltage from 2.5V to 5.5V and provide output range 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. MT3101 consumes extremely low 15µA 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 MT3101 to achieve nearly constant switching frequency across load range. MT3101 has cycle-by-cycle current limit and hiccup mode to protect over-load or short circuit fault conditions. MT3101 is available in low profile 6 leads DFN 2mmx2mm packages.

FEATURES

- Wide Input Range from 2.5V to 6V
- Proprietary Fast Transient Constant On Time Architecture Stable with low ESR Ceramic Output Capacitors
- +/- 2% 0.6V Feedback Voltage
- 2.5MHz Switching Frequency
- 15µA Low Quiescent Current
- 2A Continuous
- 1.21V Accurate Enable Threshold
- Up to 95% Efficiency
- 100% Duty Cycle Operation
- Built-in 130mΩ/100mΩ Power Switches
- Internal 1msec Soft-Start
- Cycle-by-cycle Current Limit Protection
- Over-Load and Short Circuit Hiccup Mode
- Open Drain Power Good Indication
- Output Discharge
- Thermal Shutdown Protection
- Available in Small DFN2x2_6L Package
- Pb-Free RoHS Compliant

APPLICATIONS

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

Typical Applications

