

1.5A Continuous 2A Peak 5V Input 2.5MHz Synchronous Step-Down Converter

DESCRIPTION

The MT3102 is a 2.5MHz, 1.5A 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. MT3102 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 MT3102 to achieve nearly constant switching frequency across load range. MT3102 has cycle-by-cycle current limit and hiccup mode to protect over-load or short circuit fault conditions. MT3102 is available in low profile 6 leads DFN 1.5mmx1mm, DFN 1.5mmx1.5mm and SOT23 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
- 1.5A Continuous, 2A Peak Output Current
- 1.21V Accurate Enable Threshold
- Up to 95% Efficiency
- 100% Duty Cycle Operation
- Built-in 110mΩ/90mΩ 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 SOT23_6L , DFN1.5x1.5_6L and DFN1.5x1_6L Package
- Pb-Free RoHS Compliant

APPLICATIONS

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

Typical Applications

