

5V Input 2.5A/3A 1.5MHz Synchronous Step-Down DC/DC Converter

DESCRIPTION

The MT3103 is a 1.5MHz, 2.5A/3A 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. MT3103 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 MT3103 to achieve nearly constant switching frequency across load range. MT3103 has cycle-by-cycle current limit and hiccup mode to protect over-load or short circuit fault conditions.

MT3103 is available in low profile SOT23_6L and 8 leads DFN 2mm x 2mm packages.

FEATURES

- Wide Input Range from 2.5V to 6V
- MT3103NSCR: 2.5A Continuous Output Current
3A Peak Output Current
- MT3103NDAR: 3A Continuous Output Current
- Proprietary Fast Transient Constant On Time Architecture Stable with low ESR Ceramic Output Capacitors
- +/- 2% 0.6V Feedback Voltage
- 1.5MHz Switching Frequency
- 15µA Low Quiescent Current
- 1.21V Accurate Enable Threshold
- Up to 95% Efficiency
- 100% Duty Cycle Operation
- MT3103NSCR: Built-in 94mΩ/76mΩ Power Switches
- MT3103NADR: Built-in 90mΩ/60mΩ 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 and DFN2x2_8L
- Pb-Free RoHS Compliant

APPLICATIONS

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

Typical Applications

