

5V Input 1A 1.5MHz 350nA I<sub>Q</sub> Synchronous Step-Down Converter

DESCRIPTION

The MT8351 is a 1.5MHz, constant on-time (COT) controlled synchronous step-down converter with super-low I<sub>Q</sub> of 350nA. It can provide 1A output current with input voltage from 2.0V to 5.5V. The MT8351 family offers a wide range of output voltage from 0.4V to 3.6V with an external selection resistor.

Device	Fixed V <sub>OUT</sub> VSET=GND	Selectable Output Voltages
MT8351ADER	1.0 V	0.4 V – 0.8 V in 25-mV steps
MT8351DDER	1.8 V	0.8 V – 1.6 V in 50-mV steps
MT8351QDER	3.6 V	1.8 V – 3.4 V in 100-mV steps

The constant on-time control scheme simplifies loop compensation and offers excellent load transient response. MT8351 consumes extremely low quiescent current hence achieves superior light load efficiency. The high gain error amplifier in the control loop provides excellent load and line regulation. MT8351 has cycle-by-cycle current limit and hiccup mode to protect over-load or short circuit fault conditions.

MT8351 is available in small 6-pin DFN2x2mm package.

FEATURES

- 350nA Operating Quiescent Current
- 100% Duty- Cycle Operation with 0.5uA I<sub>Q</sub>
- Input Range from 2.0V to 5.5V
- 18 Selectable Output Voltage from 0.4V to 3.6V through VSET pin
- +/- 1% V<sub>OUT</sub> Voltage
- 1.5MHz Switching Frequency
- 1A Continuous Output Current
- Built-in 215mΩ/105mΩ Power Switches
- Internal Soft-Start
- Cycle-by-cycle Current Limit Protection
- Input Under/Over Voltage Lockout
- Output Discharging Function in Shutdown
- Hiccup Mode for Short Circuit and Over-Load Protection
- Thermal Shutdown Protection
- Available in DFN2x2mm\_6L package.
- Pb-Free RoHS Compliant

APPLICATIONS

- Wearable Electronics
- Headsets, Headphones, and Earbuds
- Medical Sensor Patches
- Smart Phone and Tablets
- Solid-State and Hard Disk Drivers
- DC/DC Micro Modules

TYPICAL APPLICATIONS

