Dual 2.5A 2.5MHz High Efficiency Synchronous Step-Down DC/DC Converter

DESCRIPTION

The MT3253 are dual 2.5MHz, 2.5A constant on-time (COT) controlled synchronous step-down converters. MT3253N consumes extremely low 38μA quiescent current hence achieves superior light load efficiency. The 2.5V to 6V input supply range makes the parts ideally suited for single Li-Ion applications. 100% duty cycle capability provides low dropout operation, which extends operating time in battery-operated systems. The constant on-time control scheme simplifies loop compensation and offers excellent load transient response. The high gain error amplifier in the control loop provides excellent load and line regulation. Proprietary adaptive on-time helps MT3253 to achieve nearly constant switching frequency across the continuous conduction load range. MT3253 has cycle-by-cycle current limit and hiccup mode to protect over-load or short circuit fault conditions.

The MT3253 is available in low profile 8 leads DFN2.5mmX1.5mm and 8 leads TSOT23 small package.

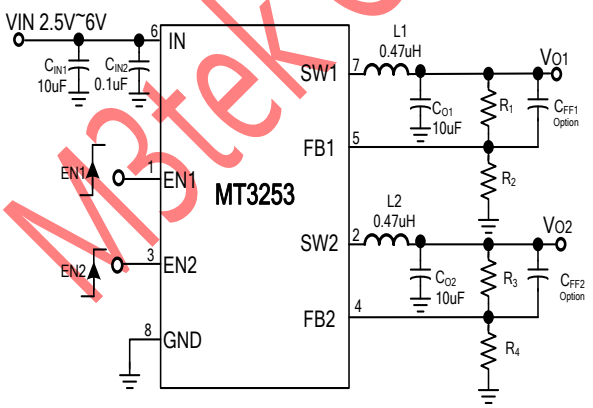
FEATURES

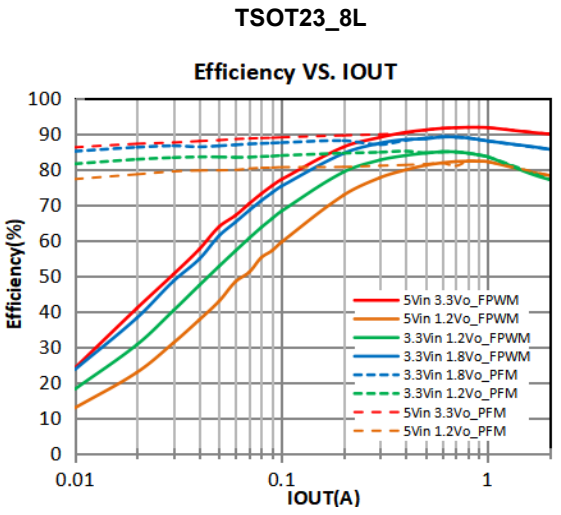
- Dual Outputs operating independently with 2 x 2.5A Output Current Capability
- Wide Input Range from 2.5V to 6V
- Adjustable Output Voltages from 0.6V to V_{IN}
- Up to 95% High Efficiency
- Proprietary Fast Transient Constant On Time Architecture Stable with low ESR Ceramic Output Capacitors
- 1.5% 0.6V Feedback Voltage
- 2.5MHz Switching Frequency
- MT3253N 38μA Low Quiescent Current
- 100% Duty Cycle Operation
- DFN2.5x1.5_8L RDS_{ON} 65mΩ HS/30mΩ LS @VIN=5V
- TSOT23_8L RDS_{ON} 65mΩ HS/35mΩ LS @VIN=5V
- Internal 1.0msec Soft-Start
- Cycle-by-cycle Current Limit Protection
- Over-Load and Short Circuit Hiccup Mode
- Output Discharging in Shutdown
- Thermal Shutdown Protection
- Available in a DFN 2.5mmx1.5mm_8L and TSOT23_8L package
- Pb-Free RoHS Compliant

APPLICATIONS

- Solid-State and Hard Disk Drives
- USB Type-C Dock Station
- Smart Phone and Tablets
- Wi-Fi RF Modules

TYPICAL APPLICATIONS





M3tek Confidential Datasheet