

5V Input 3.5A 1.5MHz Synchronous Step-Down DC/DC Converter

DESCRIPTION

The MT3153 is a 1.5MHz, 3.5A 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. MT3153 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 MT3153 to achieve nearly constant switching frequency across load range. MT3153 has cycle-by-cycle current limit and hiccup mode to protect over-load or short circuit fault conditions.

MT3153 is available in TSOT23_5L packages.

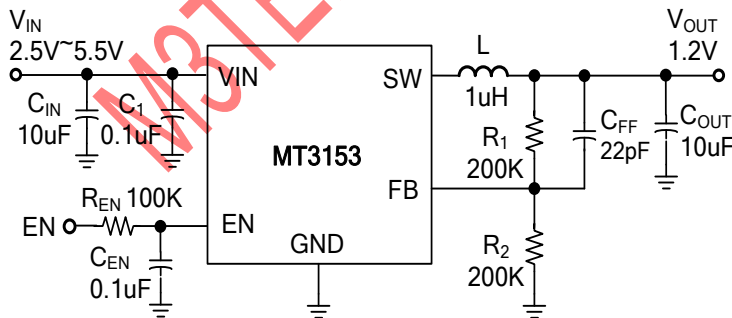
FEATURES

- Wide Input Range from 2.5V to 6V
- 3.5A 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
- Up to 95% Efficiency
- 100% Duty Cycle Operation
- Built-in 70mΩ/35mΩ 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 TSOT23_5L
- Pb-Free RoHS Compliant

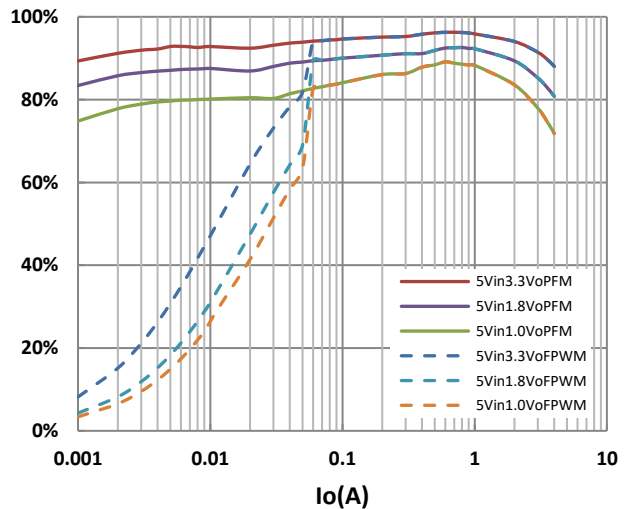
APPLICATIONS

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

Typical Applications



Efficiency



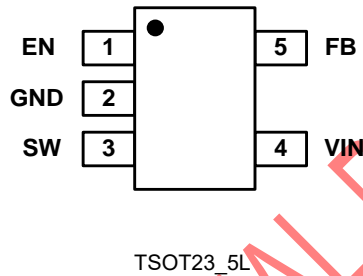
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Ordering Information

Part No.	Marking	Temp. Range	Remark	Package	MOQ
MT3153NTAR	3153 YWWxx	-40°C ~+85°C	Adjustable Vout PFM Mode	TSOT23_5L	3000/Tape & Reel
MT3153ATAR	3153A YWWxx	-40°C ~+85°C	Adjustable Vout FPWM Mode	TSOT23_5L	3000/Tape & Reel

Note: Y: Year, W: Week, xx: Manufacture Code

Pin Configuration



Pin Description

Pin No.	Symbol	Description
1	EN	Don't float this pin. This pin has a pull-down resistor of typically 1MΩ to GND. <ul style="list-style-type: none"> • Drive EN above 1.05V to turn on the converter • Drive EN below 0.4V to turn off the converter and discharge output
2	GND	Ground
3	SW	Power Switch Node
4	VIN	Input Supply Voltage
5	FB	Voltage Feedback Input. Connect a resistor divider between output and FB to program the output voltage. VFB is regulated to 0.6V.