

5V Input 2A 1.5MHz Synchronous Step-Down DC/DC Converter

DESCRIPTION

The MT7802 is a 1.5MHz, 2A 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. MT7802 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 MT7802 to achieve nearly constant switching frequency across load range. MT7802 has cycle-by-cycle current limit and hiccup mode to protect over-load or short circuit fault conditions.

MT7802 is available in low profile 10 leads DFN 3mm x 3mm packages and SOP8.

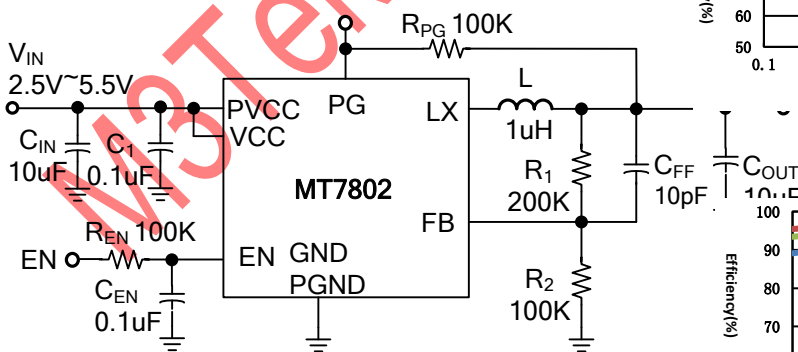
FEATURES

- 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
- 1.5MHz Switching Frequency
- 15µA Low Quiescent Current
- 2A Output Current
- Up to 95% Efficiency
- 100% Duty Cycle Operation
- Built-in 80mΩ/50mΩ 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 SOP8 Package
- Pb-Free RoHS Compliant

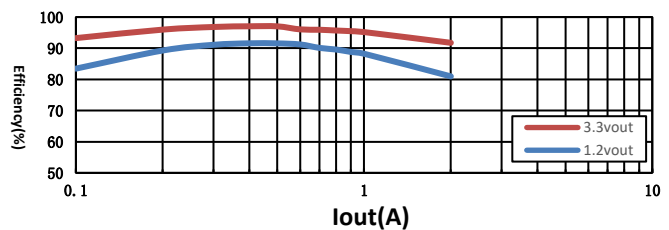
APPLICATIONS

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

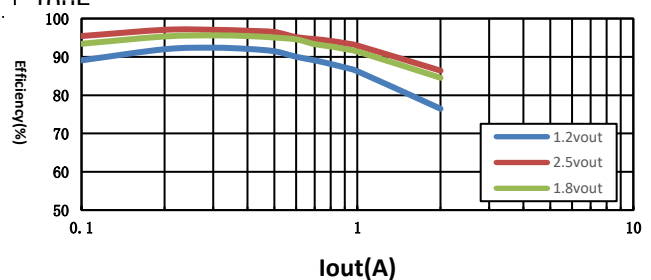
Typical Applications



Efficiency vs. Output Current at VIN=5V



Efficiency vs. Output Current at VIN=3.3V



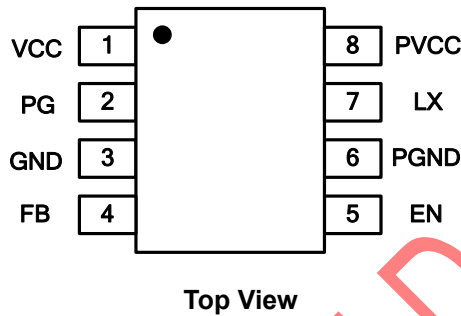
5V Input 2A 1.5MHz Synchronous Step-Down DC/DC Converter

Ordering Information

Part No.	Marking	Temp. Range	Package	MOQ
MT7802ASPR	MT7802A YWWxx	-40°C ~+85°C	SOP8	2500/Tape & Reel

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

Pin Configuration



Pin Description

Pin No.	Symbol	Description
1	VCC	Supply Voltage Input
2	PG	Power Good Open-drain Output. Connect a 100kΩ pull-up resistor to V_{IN} or V_{OUT} .
3	GND	Power ground
4	FB	Voltage Feedback Input. Connect a resistor divider between output and FB to program the output voltage. VFB is regulated to 0.6V.
5	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
6	PGND	Power Switch ground
7	LX	Power Switch Node
8	PVCC	Power Switch Supply Voltage Input