

5V Input 1.5A/2A(Peak) 2.5MHz Synchronous Step-Down Converter

DESCRIPTION

The MT3121 is a 2.5MHz, 2A Peak constant on-time (COT) controlled synchronous step-down converter. It can operate with input voltage from 2.5V to 6V 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. MT3121 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 MT3121 to achieve nearly constant switching frequency across load range. MT3121 has cycle-by-cycle current limit and hiccup mode to protect over-load or short circuit fault conditions. MT3121 is available in low profile 5 leads SOT23 package.

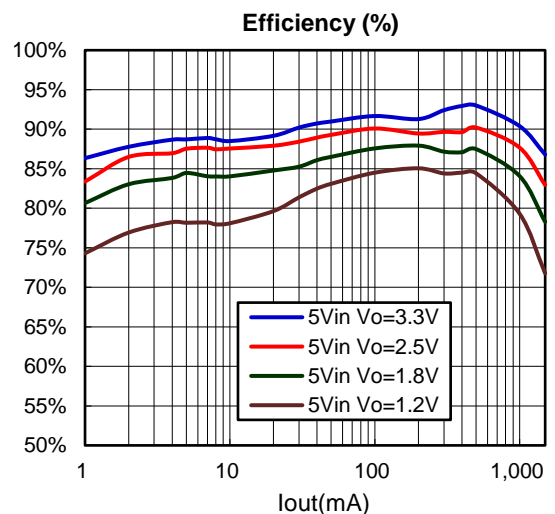
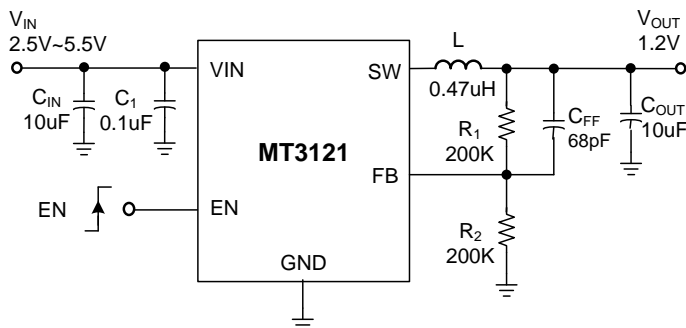
FEATURES

- 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
- 2.5MHz Switching Frequency
- 15µA Low Quiescent Current
- 1.5A Continuous and 2A Peak Output Current
- 100% Duty Cycle Operation
- Built-in 260mΩ/180mΩ Power Switches
- Internal 1msec Soft-Start
- Cycle-by-cycle Current Limit Protection
- Over-Load and Short Circuit Hiccup Mode
- Input Under/Over Voltage Lockout
- Output Discharging Function in Shutdown
- Thermal Shutdown Protection
- Hiccup Mode for Short Circuit and Over-Load Protection
- Available in SOT23_5L Package
- Pb-Free RoHS Compliant

APPLICATIONS

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

TYPICAL APPLICATION



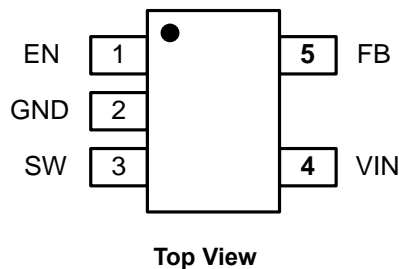
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Ordering Information

Part No.	Marking	Temp. Range	Remark	Package	MOQ
MT3121NSBR	3121 YWWxx	-40°C ~+85°C	Adjustable Vout COT PFM mode	SOT23_5L	3000/Tape & Reel
MT3121ASBR	3121A YWWxx	-40°C ~+85°C	Adjustable Vout COT Forced PWM mode	SOT23_5L	3000/Tape & Reel

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

Pin Configuration



Pin Description

Pin No.	Symbol	Description
1	EN	Regulator Enable Control Input with accurate 1.21V enable threshold which can be used to build precision R-C turn-on delay and input under-voltage lockout. This pin has a pull-down resistor of typically 1MΩ to GND. <ul style="list-style-type: none"> • Drive EN above 1.21V to turn on the converter • Drive EN below 1.11V 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.