

5V Input 1.5A 1.5MHz Synchronous Step-Down Converter

DESCRIPTION

The MT3120 is high efficiency 1.5A 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. MT3120 operates at fixed 1.5MHz across entire load range. The high gain error amplifier in the control loop provides excellent load and line regulation. MT3120 has cycle-by-cycle current limit and hiccup mode to protect over-load or short circuit fault conditions. MT3120 is available in low profile 6 leads DFN 2mmx2mm packages.

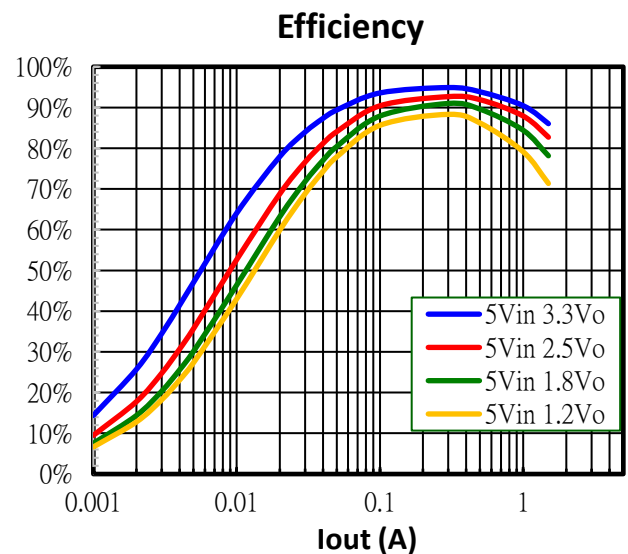
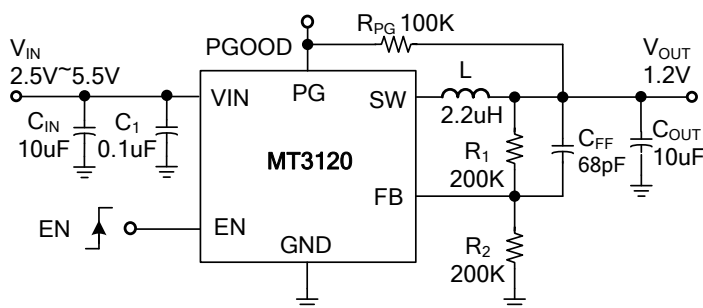
FEATURES

- Wide Input Range from 2.5V to 6V
- Proprietary Fast Transient Constant On Time Architecture Stable with low ESR Ceramic Output Capacitors
- +/- 1.5% 0.6V Feedback Voltage
- Fixed 1.5MHz Switching Frequency
- 1.5A 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 DFN2x2_6L 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



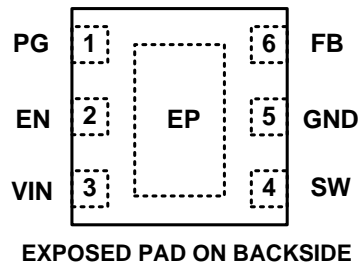
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Ordering Information

Part No.	Marking	Temp. Range	Remark	Package	MOQ
MT3120NDER	3120 YWWxx	-40°C ~+85°C	Adjustable Vout 1.5MHz FPWM mode	DFN2x2_6L	3000/Tape & Reel

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

Pin Configuration



Top View

Pin Description

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