

**5V Input 2A 2.5MHz Synchronous Step-Down Converter for 1-Cell Li-Ion Application**

**DESCRIPTION**

The MT3112 is a 2.5MHz, 2A 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. MT3112 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 MT3112 to achieve nearly constant switching frequency across load range with COT PFM mode. MT3112 has cycle-by-cycle current limit and hiccup mode to protect over-load or short circuit fault conditions. MT3112 is available in low profile 5 leads SOT23 package.

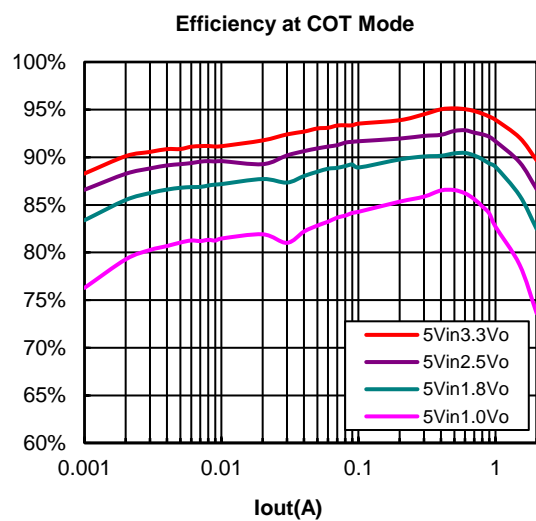
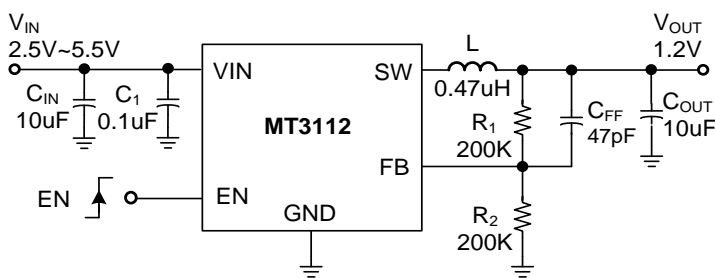
**FEATURES**

- Wide Input Range from 2.5V to 6V
- Optimized Light Load Operation for 1-cell Li-Ion Battery Application
- 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
- 2A Continuous
- 1.21V Accurate Enable Threshold
- Up to 95% Efficiency
- 100% Duty Cycle Operation
- Built-in 110mΩ/90mΩ Power Switches
- Internal 1msec Soft-Start
- Cycle-by-cycle Current Limit Protection
- Over-Load and Short Circuit Hiccup Mode
- Open Drain Power Good Indication Option
- Output Discharge
- Thermal Shutdown Protection
- Available in Small 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 Applications**



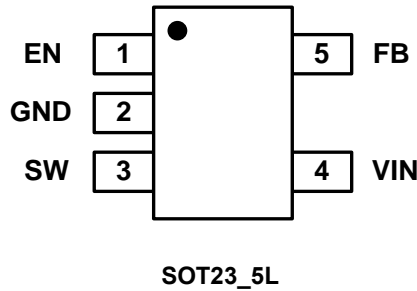
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**Ordering Information**

Part No.	Marking	Temp. Range	Remark	Package	MOQ
MT3112NSBR	3112 YWWxx	-40°C ~+85°C	Adjustable Vout	SOT23_5L	3000/Tape & Reel

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

**Pin Configuration**



**Pin Description**

SOT23_5 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"> <li>• Drive EN above 1.21V to turn on the converter</li> <li>• Drive EN below 1.11V to turn off the converter and discharge output</li> </ul>
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.