

Input 18V 2.5A 500kHz Synchronous Step-Down DC/DC Converter

DESCRIPTION

The MT3510 is a high efficiency, 2.5A current mode synchronous step-down DC/DC converter with a wide input voltage range from 4.7V to 18V. The device integrates high side and low side MOSFETs to achieve high efficiency conversion. The current mode architecture supports fast transient response and internal compensation. The MT3510 provides complete fault protection including input under-voltage lockout, output short circuit protection, over current protection, and thermal shutdown. The switching frequency is internally set at 500kHz. MT3510N and MT3510A have different operation modes:

- MT3510N is automatic PSM/PWM mode
- MT3510A is Forced PWM mode

In order to improve the light load efficiency, MT3510 has proprietary light load power saving mode (PSM) to minimize the switching loss by reducing the switching frequency. The MT3510 is available in the small 6 leads SOT23 package.

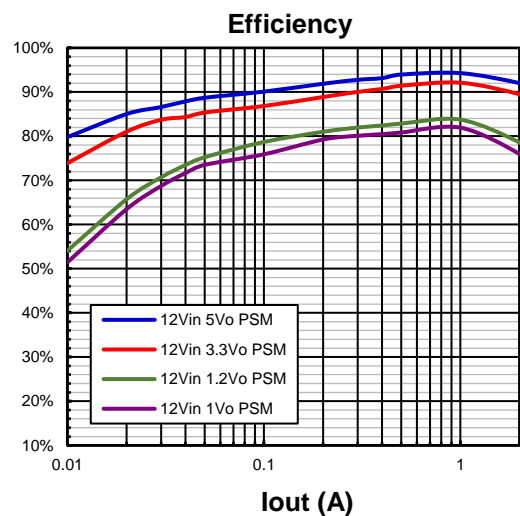
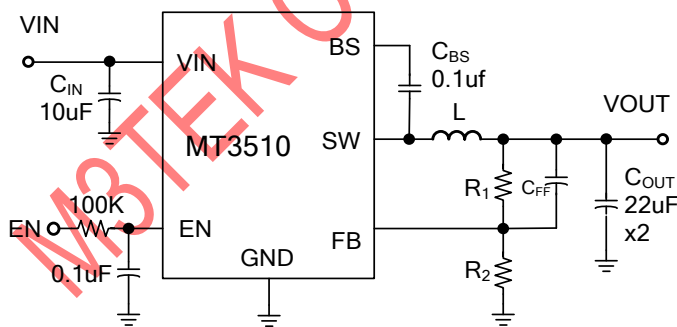
FEATURES

- Input Voltage Range from 4.7V to 18V
- Support 100% Duty Cycle Operation
- 2.5A Continuous, 3A Peak Load Current Capability
- Adjustable Output Voltage from 0.6V to 12V
- 500kHz Switching Frequency
- Built-in 110mΩ/65mΩ Power Switch
- High Efficiency up to 95%
- Internal 1msec Soft-Start
- Peak Current Mode Operation
- Over-temperature Protection
- Input Under Voltage Lockout (UVLO)
- Cycle-by-Cycle Current Limit Protection
- Over-Load and Short Circuit Protection
- Thermal Shutdown Protection
- Available in a small SOT23_6L Package
- Pb-Free RoHS Compliant

APPLICATIONS

- Wireless and DSL Card
- Portable/Handheld Device
- STB, TV, Sound Bar, MP3 Player
- Microprocessor and DSP Core Supply

Typical Applications

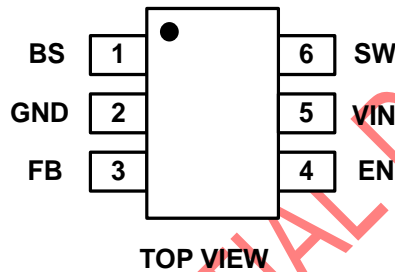


Ordering Information

Part No.	Marking	Temp. Range	Package	MOQ
MT3510NSCR	3510 YWWxx	-40°C ~+85°C	SOT23_6L	3000/Tape & Reel
MT3510ASCR	3510A YWWxx	-40°C ~+85°C	SOT23_6L	3000/Tape & Reel

Note: Y: Year, WW: Week, xx: Manufacture Control Code

Pin Configuration



Pin Description

Pin No.	Symbol	Description
1	BS	High Side Gate Drive Floating Bootstrap Supply Voltage Connect a 0.1uF ceramic capacitor between BS and SW pins.
2	GND	Ground This is the reference of the ground connection for all components in the power supply.
3	FB	Voltage Feedback
4	EN	Regulator Enable Control Input, Don't float this PIN <ul style="list-style-type: none"> • Drive EN High Level to turn on the converter • Drive EN Low Level to turn off the converter For automatic start-up, connect a 100kΩ resistor from EN to VIN.
5	VIN	Main Input Supply Voltage
6	SW	Power Switches Node