

24V(Surge up to 28V) 1.4MHz 3A Fast-PWM Synchronous Step-Down Converter

Description

The MT3515 is a fully integrated high efficiency synchronous step-down converter which requires minimum number of external components. It offers very compact solution with up to 3A continuous output current over a wide input range.

The MT3515 employs proprietary Constant On-Time (COT) control scheme providing superior transient response and maintaining constant switching frequency under the continuous conduction mode operation. The internal ramp compensation network allows stable operation with ultra-low equivalent series resistance (ESR) output ceramic capacitors without using external compensation network. An error amplifier in the control loop provides excellent line and load regulation.

The MT3515 integrates extensive protection functions include: UVLO, OCP, UVP and thermal shutdown. Input Under-Voltage Lockout is internally set as 4.2V. An open drain power good signal indicates the output within its regulation voltage range.

The converter is available in a small 8pin TSOT23 and DFN3x3_10L package.

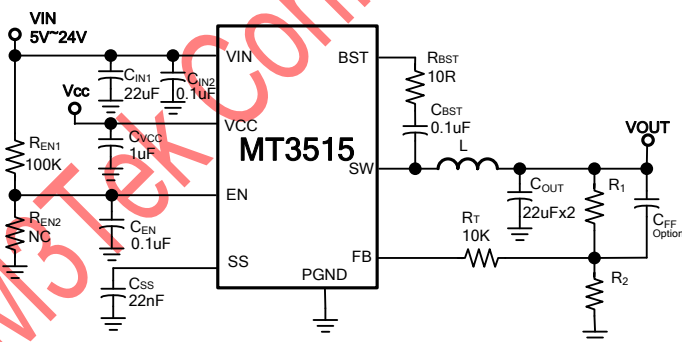
Features

- Input Voltage Range from 4.5V to 24V Surge up to 28V
- 1.5% 0.8V Feedback Voltage Accuracy
- 3A continuous output current
- Support 100% duty cycle Low Dropout Operation
- Stable operation with output low ESR ceramic capacitors
- Fast PWM COT control with superior transient performance
- 1.4MHz Switching frequency
- Integrated HS/LS Switches
TSOT23_8L: 52mΩ/22mΩ
DFN3x3_10L: 75mΩ/35mΩ
- Accurate EN UVLO threshold
- Open Drain Power Good Indication
- Forced PWM (MT3515A) or PFM(MT3515N) at light load
- Low quiescent current
- Thermal Shutdown with Auto recovery.
- Externally-Programmable Soft-Start
- Hiccup mode at short circuit protection
- Available in an 8-pin TSOT23 and DFN3x3_10L Package

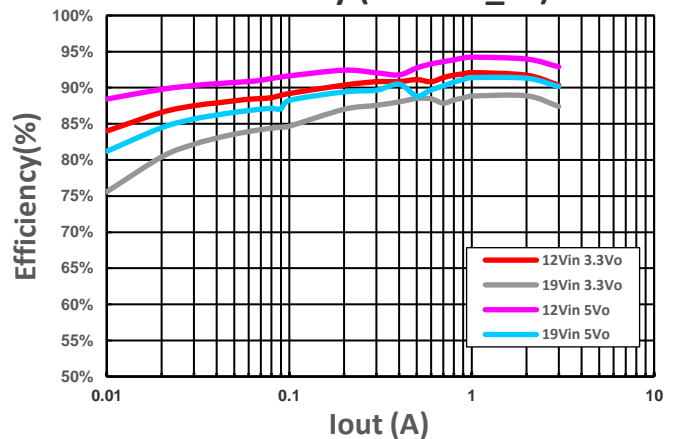
Applications

- Laptop Computer
- Tablet PC
- Networking Systems
- Personal Video Recorders
- Flat Panel Television and Monitors
- Distributed Power Systems

Typical Application Diagram



Efficiency (TSOT23_8L)



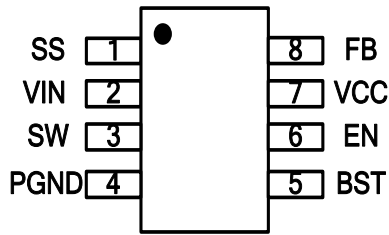
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Ordering Information

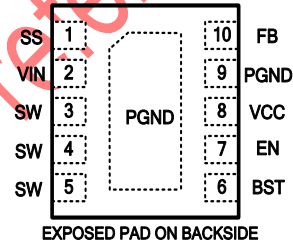
Part No.	Marking	Temp. Range	Remark	Package	MOQ
MT3515ATCR	3515A YWWxx	-40°C ~+85°C	FPWM mode	TSOT23_8L	3000/Tape & Reel
MT3515NTPCR	3515 YWWxx	-40°C ~+85°C	PFM mode	TSOT23_8L	3000/Tape & Reel
MT3515UTCR	3515U YWWxx	-40°C ~+85°C	Ultra-sonic mode	TSOT23_8L	3000/Tape & Reel
MT3515ADCR	3515A YWWxx	-40°C ~+85°C	FPWM mode	DFN3x3_10L	5000/Tape & Reel
MT3515NDCR	MT3515 YWWxx	-40°C ~+85°C	PFM mode	DFN3x3_10L	5000/Tape & Reel
MT3515UDCR	3515U YWWxx	-40°C ~+85°C	Ultra-sonic mode	DFN3x3_10L	5000/Tape & Reel

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

Pin Configuration



TSOT23_8L package



EXPOSED PAD ON BACKSIDE

DFN3x3_10L package

TOP VIEW