

30V, 2.5A Synchronous Step-Down DC/DC Converter with Adjustable Soft-start Time

FEATURES

- High Efficiency: Up to 95% @ 12V to 5V
- Wide input voltage: 4.5V ~ 30V
- Up to 2.5A Output Current
- Low Typical 3 μ A Shutdown Current
- Adjustable Soft-Start Time
- Fixed 570kHz Switching Frequency
- Stable with Low ESR Ceramic Output
- Peak Current Mode with External Compensation
- PFM in Light Load Condition
- 0.8V Voltage Reference with $\pm 2\%$ Accuracy
- Thermal Shutdown
- Cycle-by-cycle Current Limit Protection
- Over Current Protection with Hiccup Mode
- SOP8 Package

GENERAL DESCRIPTION

TMI33431 is a wide input voltage of 4.5V to 30V, high efficiency current mode, synchronous step-down DC/DC converter capable of delivering 2.5A current with adjustable soft-start time. TMI33431 integrates main switch and synchronous switch with low $R_{DS(on)}$ to minimize the conduction loss.

The device integrates 120m Ω High-Side and 80m Ω Low-side Power MOS, and has advanced features include UVLO, Thermal Shutdown, Soft Start, input OVP.

APPLICATIONS

- Vacuum Robot
- Smart Home Applications
- Printer
- Consumer Applications: TV and Set Top Box
- General 5V, 12V, 24V DC/DC Power Bus Supply

TYPICAL APPLICATION

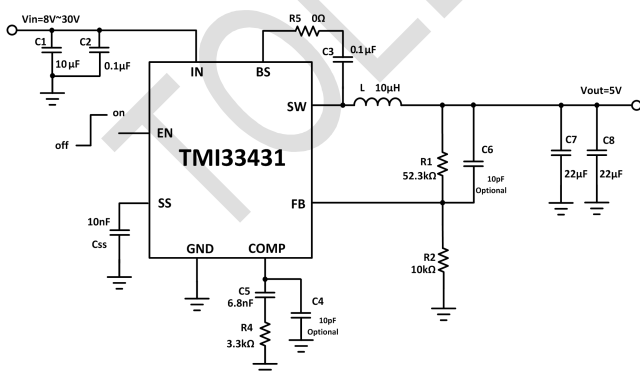


Figure 1. Basic Application Circuit

Efficiency

$V_{OUT}=5V$, $I_{OUT}=0.001A$ to $3.0A$, $T_A=25^\circ C$

