

3A High Voltage Boost Converter

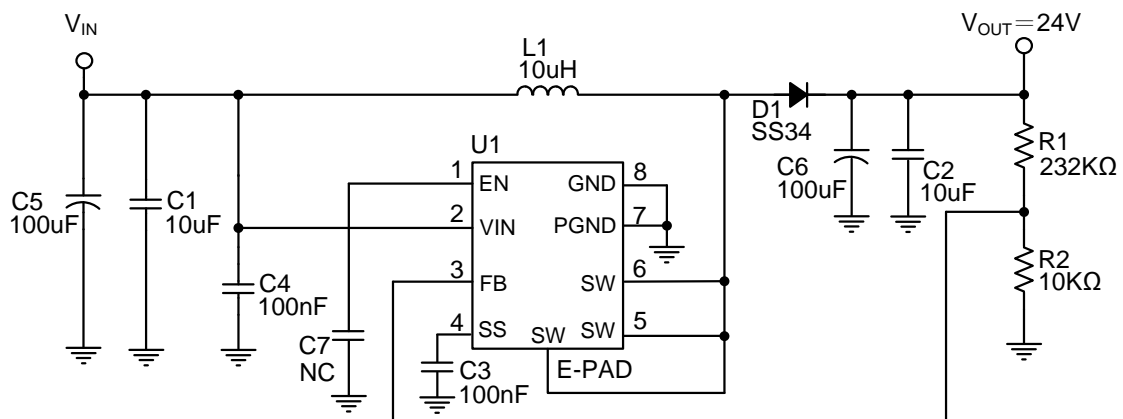
❖ GENERAL DESCRIPTION

The MA2011 is a current mode step up converter intended for small, low power applications. The converter input voltage ranging from 3.5V to 28V. The output voltage can be set up to 38V. The switching frequency is 800KHz and allows small external inductor and capacitors and extremely fast transient response. External soft-start results in small inrush current and extends battery life. Internal power MOSFET with very low $R_{DS(ON)}$ provides high efficiency. The converter also provides protection functions such as input Under Voltage Lock-Out, Current Limit and Thermal Shutdown. The MA2011 is available in SOP8L-EP package.

❖ FEATURES

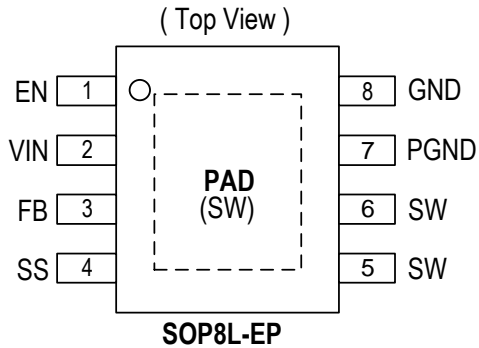
- 3.5V to 28V Operating Input Voltage Range
- 800KHz Fixed Switching Frequency
- Adjustable Output Voltage Range up to 38V ($V_{FB}=1.0V$)
- Up to 96% Efficiency
- External Soft-Start Function
- Internal Compensation
- Internal 3A Switching Current Limit (or called Over Current Protection, OCP)
- Thermal Shutdown Protection (or called Over Temperature Protection, OTP)
- Input Under Voltage Lock-Out. (UVLO)
- Available in SOP8L-EP Package

❖ SIMPLIFIED APPLICATION CIRCUIT



❖ PIN ASSIGNMENT

The package of MA2011 is SOP8L-EP. The pin assignment is given by:



Name	Description
EN	Chip Enable Pin. Active high. Internal pull high. Leave this pin floating to turn on MA2011. Connect this pin to GND or give logic low signal to turn off. Add an extra MLCC capacitor from EN pin to GND to adjust turn on delay time and avoids power sequence issue.
VIN	Input Supply Pin. When $V_{IN} > 5V$, connect this pin to input power through a resistor about $0 \sim 2.2 \Omega$. If $V_{IN} \leq 5V$, connect to V_{OUT} through a resistor about $4.7 \sim 10 \Omega$.
FB	Negative Feedback Input Pin. The FB voltage is 1.0V. Set output voltage through a precision resistor divider, recommended tolerance $\pm 1\%$ or lower.
SS	Soft-Start Pin. Connect an MLCC capacitor to GND, recommended $0.1\mu f / X5R$ at least.
SW	Power Switch Output. SW is the drain of the internal MOSFET switch.
PGND	Power Ground Pin.
GND	Signal Ground Pin.
PAD	Exposed-Pad. Connect to SW pin, and make sure a large area to SW-pad for cooling.

❖ ORDER / MARKING INFORMATION

Order Information	Top Marking
<p>MA2011XX X → Packing Blank: Tube A : Taping</p> <p>Package Type ES: SOP8L-EP</p>	<p>MA2011 → Part number XXXXX → ID code:internal WW:01~52 Year:18=2018</p>