

58V Asynchronous Buck Converter

❖ GENERAL DESCRIPTION

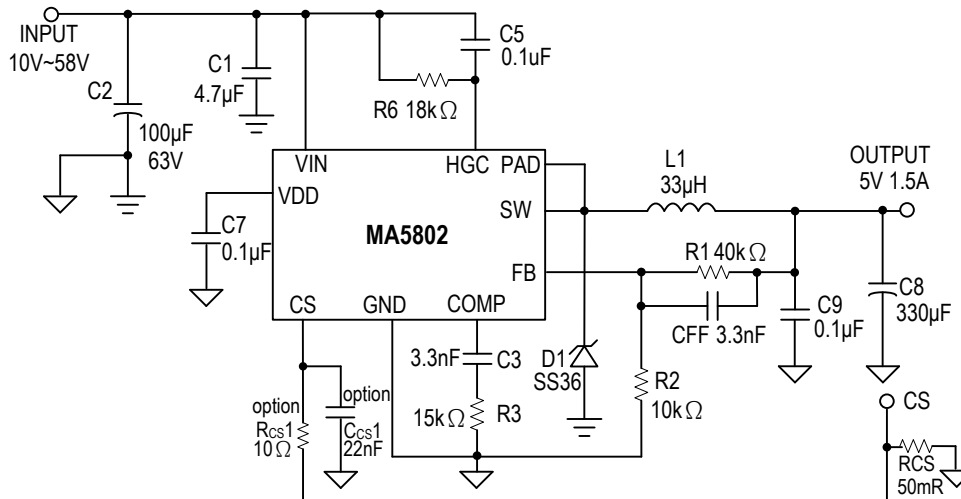
The MA5802 is a monolithic asynchronous buck regulator. The device integrates 110mΩ MOSFET, and provides 2A of continuous load current over a wide input voltage of 10V to 58V. Current mode control provides fast transient response and cycle-bicycle current limit.

The internal soft-start function prevents inrush current at turn-on. This device, available in an SOP8L-EP (Exposed pad) package, provides a very compact solution with minimal external components.

❖ FEATURES

- Wide 10V to 58V Operating Input Range
- Integrated 110mΩ P-channel MOSFET Switches
- Output Adjustable :VFB (1.00V±2%)
- Up to 93% Efficiency
- Internal Soft-Start
- Fixed 240KHz Frequency
- Cycle-by-Cycle Over Current Protection
- Input Under/Over Voltage Lockout

❖ APPLICATION CIRCUIT

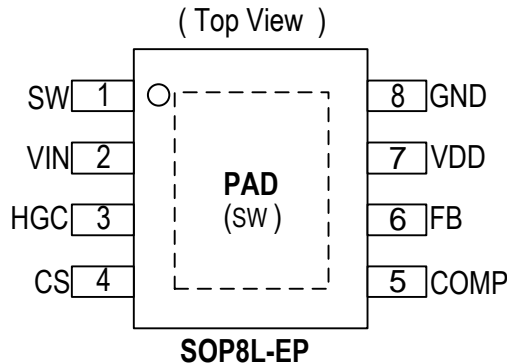


$$V_{OUT} = V_{FB} \times (1 + R1/R2), \quad V_{FB} = 1.0V, \quad R2 \text{ suggest } 1K \sim 20K\Omega.$$

$$I_{CS} = V_{CS} / R_{CS} = 0.1V / 50m\Omega = 2.0A$$

❖ PIN ASSIGNMENT

The package of MA5802 is SOP8L-EP (Exposed pad); the pin assignment is given by:



Name	Description
SW	Power Switching Output. SW is the switching node that supplies power to the output. Connect the output LC filter from SW to the output load.
VIN	Power Input. Bypass VIN to Ground with a suitably high capacitance E-CAP to eliminate noise, and bypass IC PIN2-VIN to pin8-GND with a 4.7uf ceramic MLCC (e.g. X5R).
HGC	Supply high-side gate driver. Decouple this pin to VIN pin with 0.1uf ceramic CAP (e.g. X5R) and 18kΩ resistor.
CS	The Current Sense pin.
COMP	Compensation Node. COMP is used to compensate the regulation control loop. Connect a series RC network from COMP to GND to compensate the regulation control loop.
FB	Feedback Input. FB senses the output voltage to regulate that voltage. Drive FB with a resistive voltage divider from the output voltage.
VDD	Internal regulator pin.
GND	Ground.
PAD	SW (Connect to SW).

❖ ORDER/MARKING INFORMATION

Order Information	Top Marking
<p>MA5802XXX → Packing Blank: Tube A : Taping</p> <p>Package Type ES: SOP8L-EP</p>	<p>MA5802 → Part number XXXXX → ID code:internal → WW:01~52 → Year:18=2018</p>