

38V Synchronous Buck Converter With CC/CV

❖ GENERAL DESCRIPTION

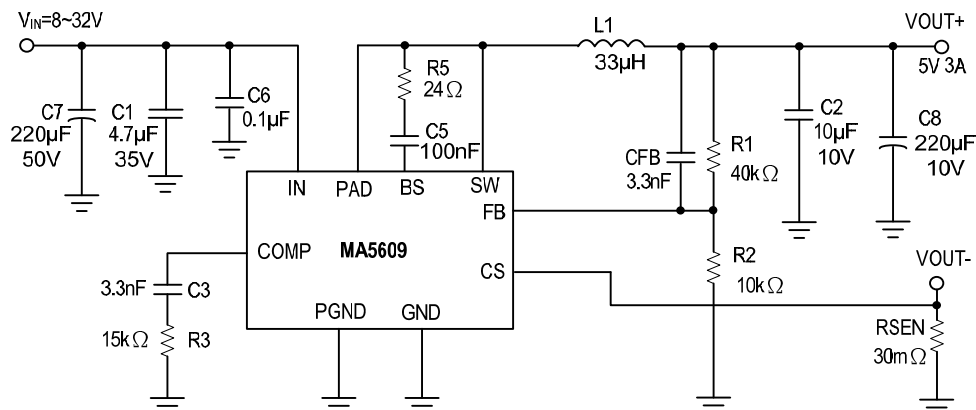
MA5609 is a wide input voltage, high efficiency Active CC step-down DC/DC converter that operates in either CV (Constant Output Voltage) mode or CC (Constant Output Current) mode. MA5609 provides up to 4A output current at 160kHz switching frequency. Current mode control provides fast transient response and cycle-by-cycle current limit.

An internal soft-start 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 8V to 36V Operating Input Range
- Integrated 80/50mΩ Power MOSFET Switches
- Output Adjustable from VFB(1.00V±2%) to 16V
- Up to 93% Efficiency
- Internal Soft-Start and Fixed 160KHz Frequency.
- Stable with Low ESR Ceramic Output Capacitors
- Duty on ratio : 0% to 95% PWM control
- Cycle-by-Cycle Over Current Protection
- Input Under/Over Voltage Lockout

❖ APPLICATION CIRCUIT



$$V_{OUT} = V_{FB} \times (1 + R1/R2), \quad V_{FB} = 1.00V, \quad R2 \text{ suggest } 10k \sim 40k\Omega$$

$$I_{SEN} = 3.3A \quad (I_{SEN} = V_{CS}(0.1V) / R_{SEN}(30m\Omega))$$