

## 38V 5A Synchronous Buck Converter

### ❖ GENERAL DESCRIPTION

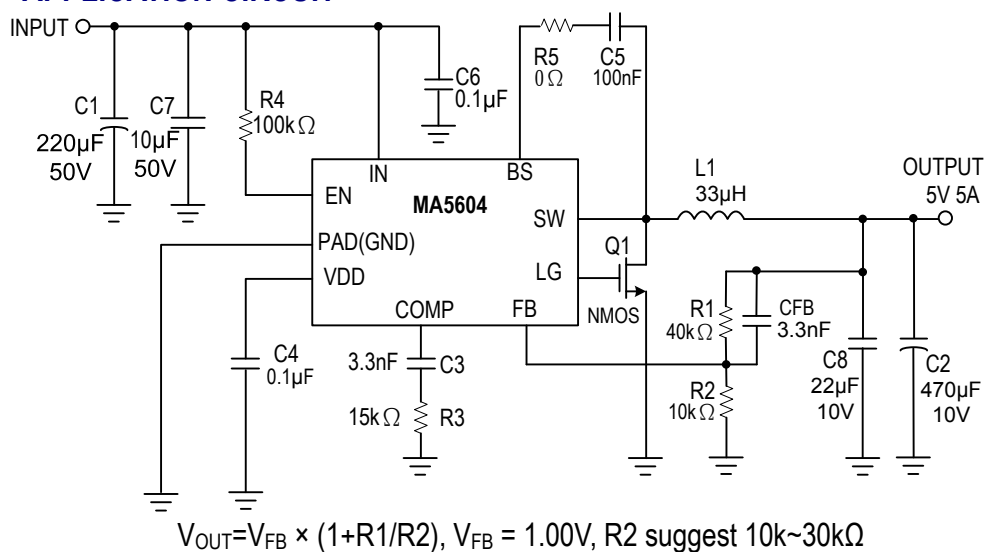
The MA5604 is a monolithic synchronous buck regulator. The device integrates internal high side and external low side power MOSFETs, and provides 5A of continuous load current over a wide input voltage of 8V to 38V. Current mode control provides fast transient response and cycle-by-cycle current limit.

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

### ❖ FEATURES

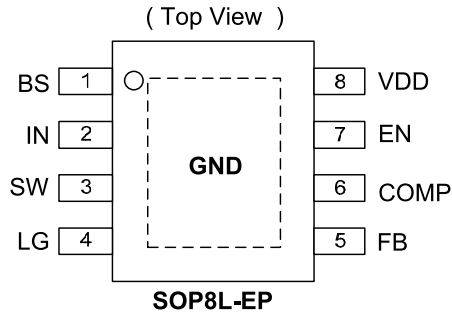
- Wide 8V to 38V Operating Input Range
- Integrated 80mΩ high side Power MOSFET Switches
- Output Adjustable from VFB(1V) to 20V
- Up to 95% Efficiency
- Internal Soft-Start
- Stable with Low ESR Polymer Al-E-Capacitors
- Fixed 160KHz Frequency
- Cycle-by-Cycle Over Current Protection
- Input Under/Over Voltage Lockout

### ❖ APPLICATION CIRCUIT



**❖ PIN ASSIGNMENT**

The package of MA5604 is SOP8L-EP(Exposed pad); the pin assignment is given by:



| Name        | Description  |
|-------------|--|
| <b>BS</b>   | Boot-Strap Pin. Supply high side gate driver. Decouple this pin to LX pin with 0.1uF ceramic cap.  |
| <b>IN</b>   | Power Input pin. Bypass IN to GND with a suitably large capacitor to eliminate noise on the input to the IC.   |
| <b>SW</b>   | 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.                       |
| <b>LG</b>   | Gate drive for external low side N-MOSFET..  |
| <b>PAD</b>  | Ground (Connect to GND).   |
| <b>FB</b>   | Feedback Input. FB senses the output voltage to regulate that voltage. Drive FB with a resistive voltage divider from the output voltage.                          |
| <b>COMP</b> | 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. |
| <b>EN</b>   | Enable control. Pull high to turn on. Do not float.  |
| <b>VDD</b>  | Internal regulator pin   |

**❖ ORDER/MARKING INFORMATION**

| Order Information  | Top Marking (SOP-8L)   |
|--|--|
| <p><b>MA5604 XXX</b> → Packing<br/>Blank: Tube<br/>A : Taping</p> <p>Package Type<br/>ES: SOP8L-EP</p> | <p>Logo ← <b>MA5604</b> → Part number</p> <p><b>XXXXX</b> → ID code:internal</p> <p>                    → WW:01~52</p> <p>                    → Year:12=2012</p> |