Ultra-Low Quiescent Synchronous Boost Converters

FEATURES

- Up to 92% Efficiency
- Up to 100mA Output Current from a Single AA Cell
- Low Start-up Voltage: 0.85V
- Internal Synchronous Rectifier
- Output Voltage: 2.2V/3.0V/3.3V (Fixed Version)
- Programmable Output Voltage (TMI5120C)
- Low Device Quiescent Current: 20μA
- Shutdown Current: <1μA
- Available in SOT23 (TMI5120), SOT23-6 (TMI5120A and TMI5120E) and SOT23-5 (TMI5120B) and SC-70-6 (TMI5120C) Packages

APPLICATIONS

- One, Two and Three Cell Alkaline and NiMH/NiCd Portable Products
- Single-Cell Li-Ion Powered Devices
- Personal Medical Products
- Wireless Handsets
- Handheld Instruments
- Bluetooth Handsets

GENERAL DESCRIPTION

The TMI5120/5120A/5120B/5120C/5120E are a series of compact, high-efficiency, synchronous step DC-DC Converters. It provides an easy-to-use power by either single-cell, two-cell, or three-cell alkaline, NiCd, NiMH, and single-cell Li-Ion or Li-Polymer batteries.

The boost converter is based on a PFM mode controller topology using synchronous rectification to obtain maximum efficiency at minimal quiescent currents.

The output voltage can be set internally to a fixed output voltage or is programmed by an external resistor divider (TMI5120C).

For standby applications, the device consumes only 20μA from battery while operating at no load, and the device feature low shutdown current of under 1μA.

TYPICAL APPILCATION

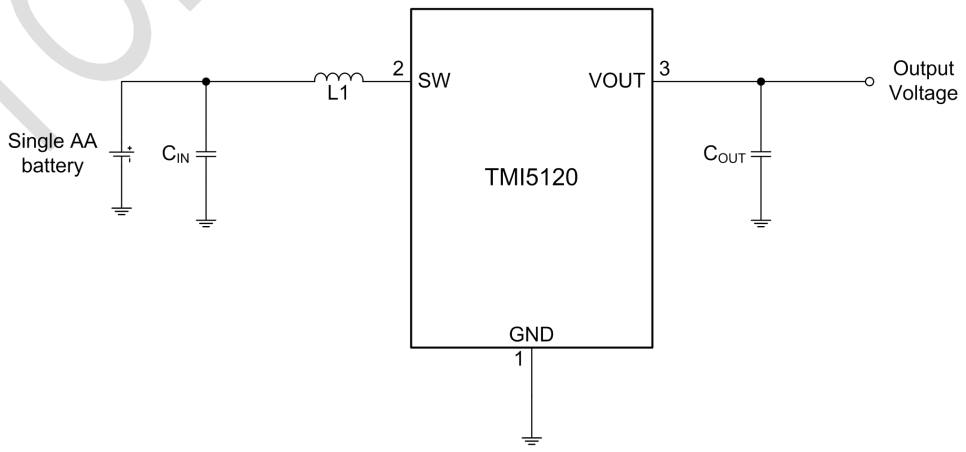

Figure 1. Basic Application Circuit of TMI5120

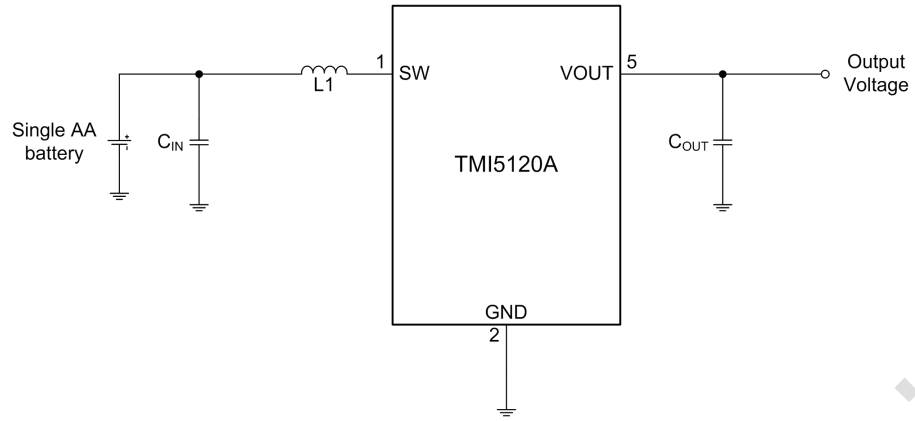

Figure 2. Basic Application Circuit of TMI5120A

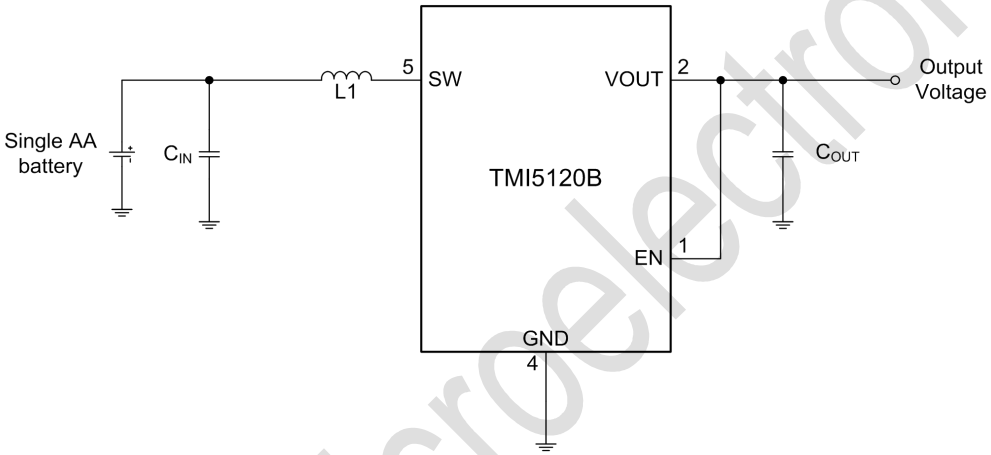

Figure 3. Basic Application Circuit of TMI5120B

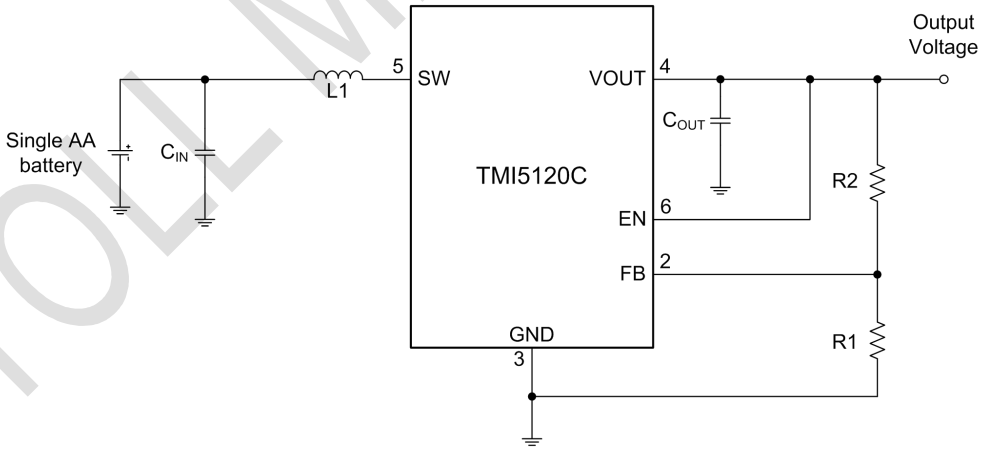

Figure 4. Basic Application Circuit of TMI5120C

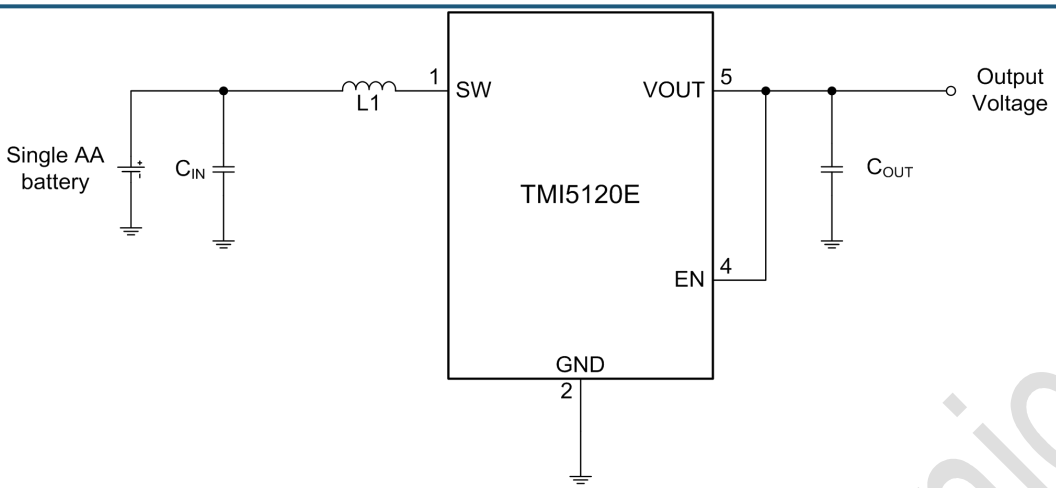

Figure 5. Basic Application Circuit of TMI5120E