Current Sense for High-Side Buck Switcher

Description

- Current sense method for a high-side buck switcher referenced to the source of device
- During switch on-time, current increases in the inductor L₁ to the load
- When the switch is open, the inductor current circulates through the freewheeling diode D1 and is sensed across a current sense module
- The sensed current provides a feedback (FB) signal to the controller to maintain constant current load regulation
- Controller receives supply (BP) from output and may include overvoltage protection

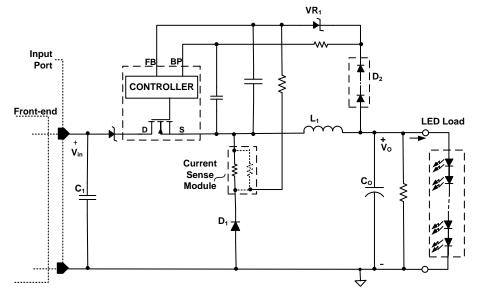


Figure 1. Current sense and feedback circuit for a high-side switch non-isolated buck converter

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Benefits

- The feedback (FB) current sense signal in the freewheeling path may accurately represent the output current and provide well-controlled output regulation
- It allows a low-side buck controller such as the LYTSwitch™ product to be used in a high-side non-isolated application
- The current sense module has a common reference level with the controller and does not need additional components for level shifting
- The reduced component count is characterized by lower loss, higher efficiency, less heat dissipation and smaller heat emission surface resulting in a reduced size
- The reduced size and compact power converter design allows assembly in the bulb base of an LED lamp
- **Could be used with:** Lighting products