Summary of the Idea

A sensing circuit enables design of a forward converter using TOPSwitch^{TM}-GX by ensuring that the transformer resets each cycle.

Description

The forward converter may include a transformer with an input winding, output winding, and a bias winding. A switch coupled to the input winding is controlled ON and OFF to transfer energy between the input winding and the output winding. A sensing circuit is coupled to the bias winding to sense the voltage of the bias winding during the OFF time of the switch. While the bias winding voltage is high, a signal is applied to the L pin of TOPSwitch-GX to disconnect the L pin from the S pin and inhibit the internal power MOSFET from initiating another ON cycle. When the voltage on the bias winding starts to collapse, indicating that the transformer has been reset, the L pin is connected to the S pin, and switching is enabled.
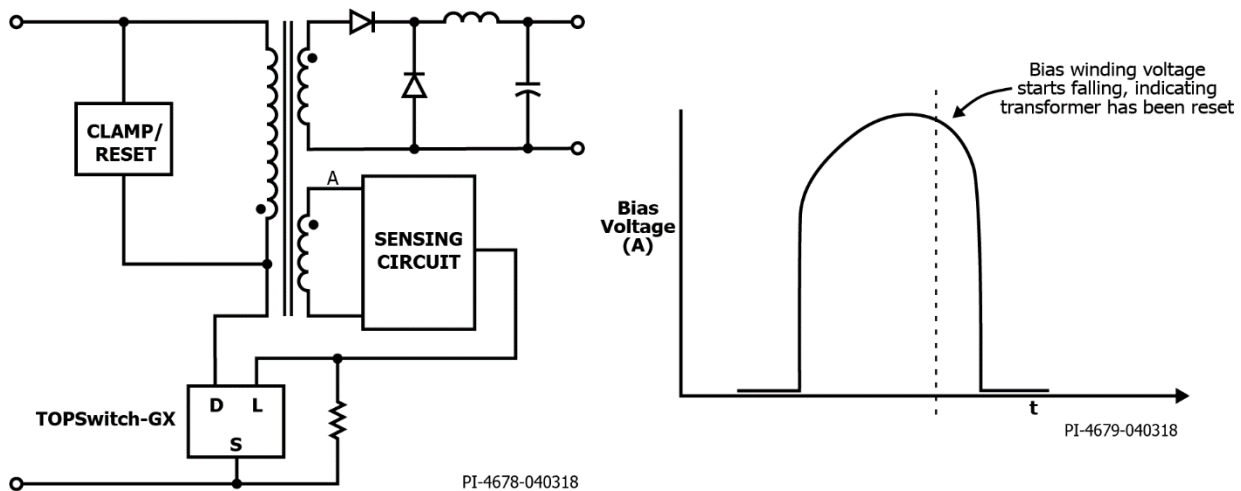

Figure 1. Forward converter reset sensing scheme.

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