



## Design Solution 5

### SP7653 Converts 5V input to 1.2V output at 2.5A

**Date:** January 3, 2006

**Designed by:** Brian Kennedy (bkennedy@sipex.com)

**Part Number:** SP7653

**Application Description:** Generic Power Converter

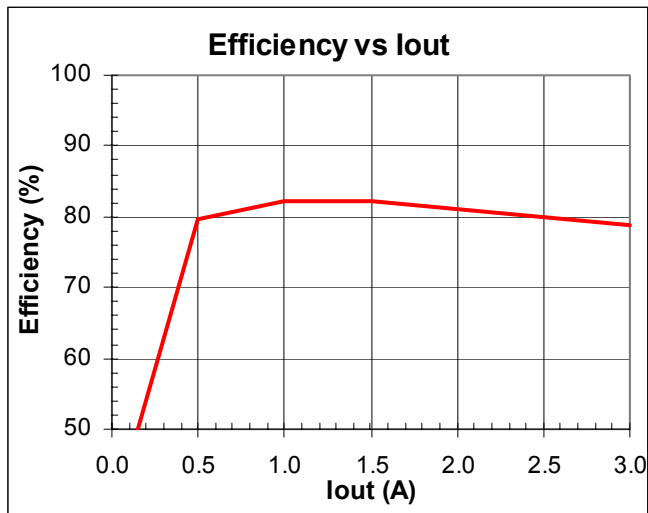
#### Electrical Requirements:

Input Voltage	4.5V – 5.5V
Output Voltage	1.2V
Output Current	2.5A

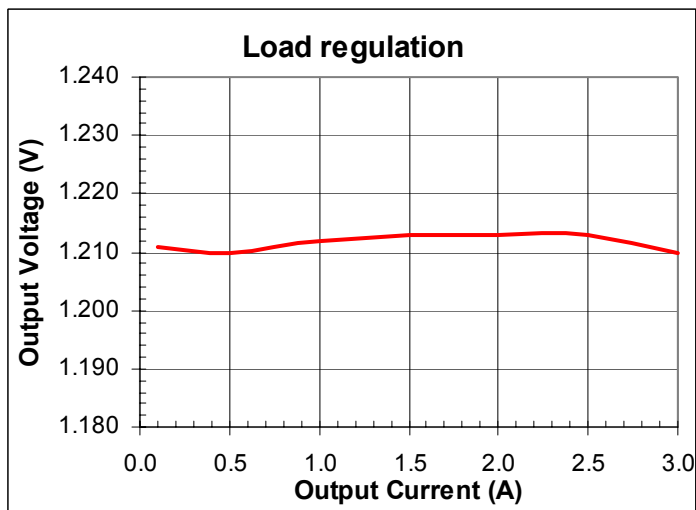
#### Circuit Description:

This circuit is designed to provide 1.2V output at 2.5A using fully integrated Power Blox converter. High operating frequency (1.3MHz) allows to use small inductor and input/output capacitors. Combination of this high switching frequency and integrated solution ensures minimum PCB footprint. Feedback compensation provides high crossover frequency resulting in excellent transient response (Fig. 5).

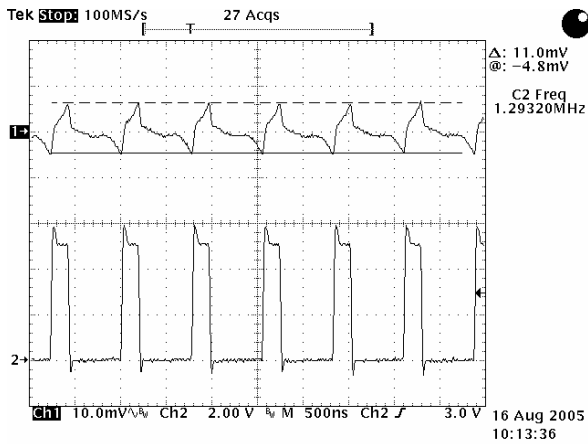
This report includes application schematic and figures 1-6 illustrating electrical performance of the design.



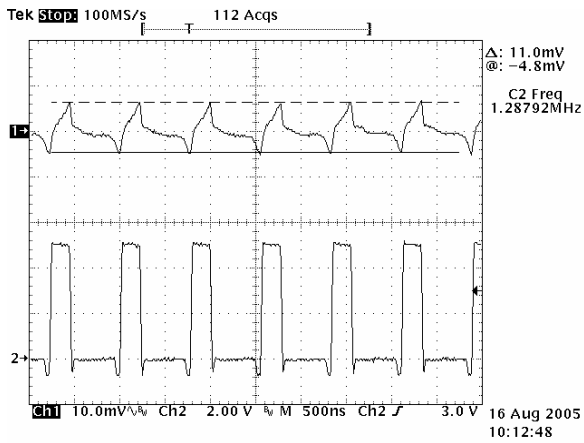
**Figure 1.** Efficiency vs. Output Current



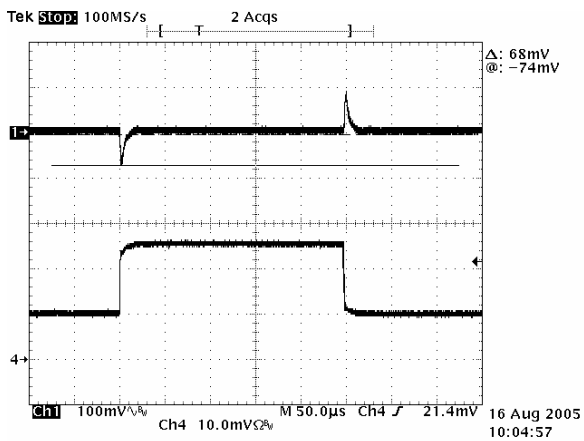
**Figure 2.** Output Voltage vs. Output Current (Load Regulation)



**Figure 3.** Output Ripple (CH1) and Switching Node (CH2) at No Load



**Figure 4.** Output Ripple (CH1) and Switching Node (CH2) at Full Load



**Figure 5.** Transient Response: Output Voltage (CH1) and Output Current (CH4 1A/DIV)

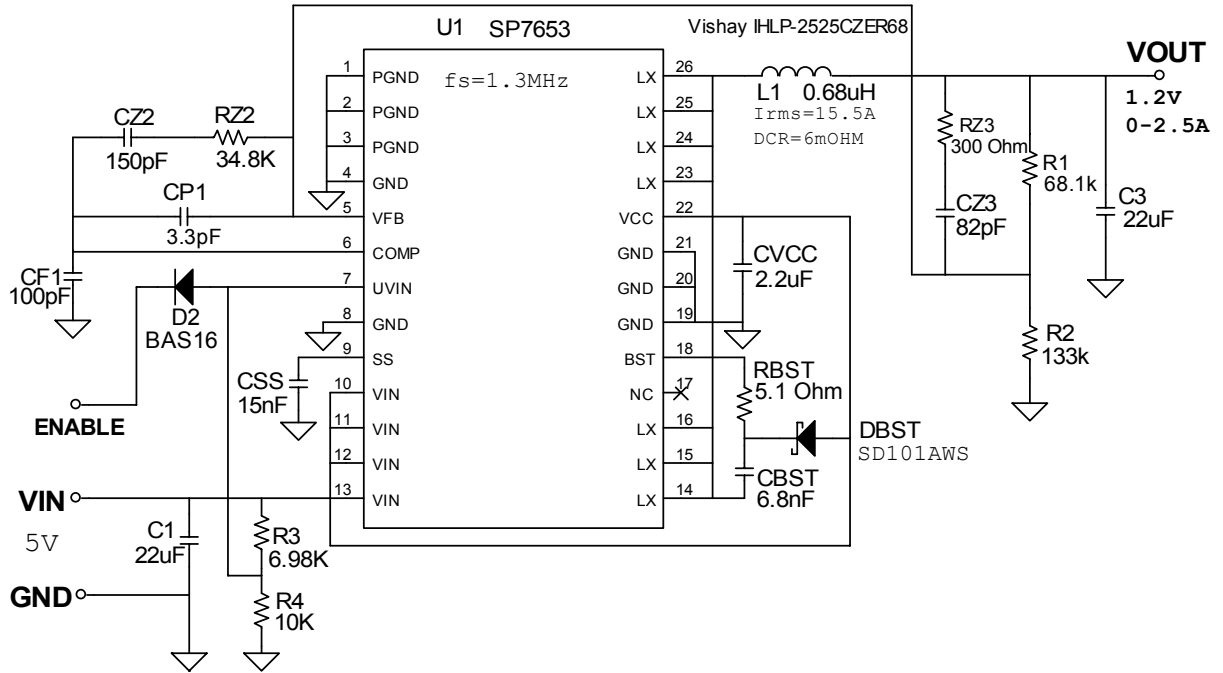


Figure 6. Applications Schematic