

SP6136: 12V input to 1.2V output at 10A

Designed by: Shahin Maloyan

Part Number: SP6136ER1

Application Description: 12V input to 1.2V output at 10A

Electrical Requirements:

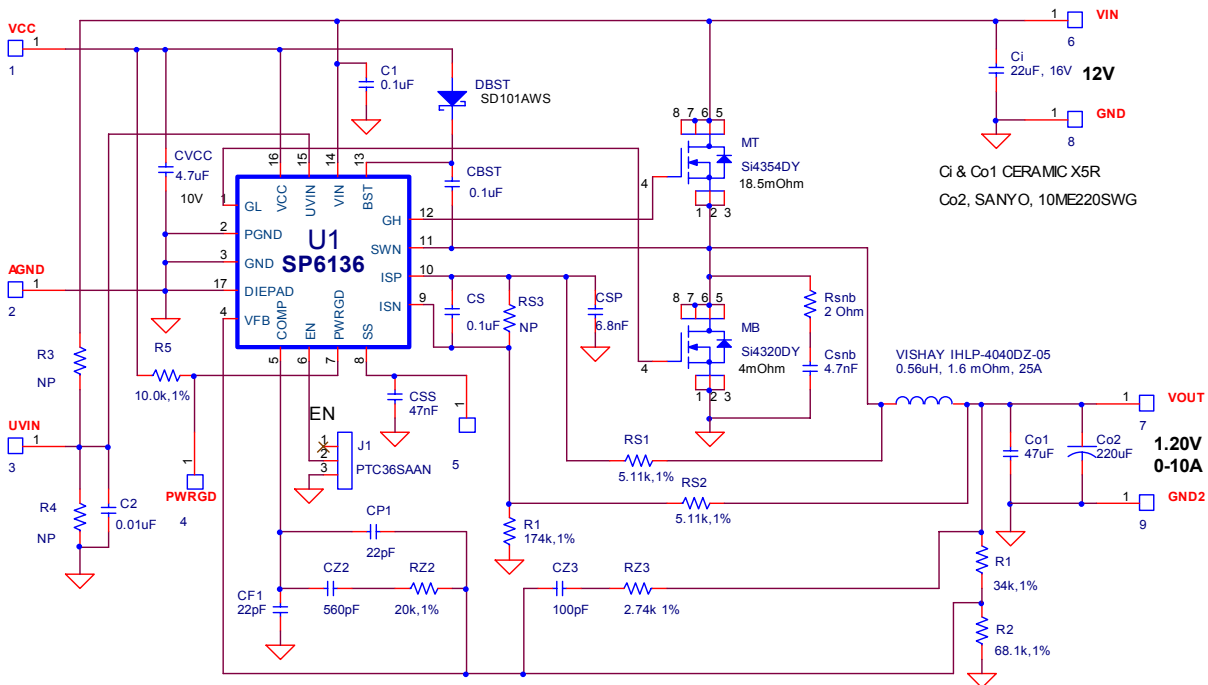
Input Voltage	12V
Output Voltage	1.2V
Output Current	10A

Circuit Description:

This buck converter has been designed to provide 1.2V output at 10A for Point-of-Load applications. The SP6136 is a high performance buck regulator controller that provides all necessary functions required by a buck regulator: over-current protection, power-good output, adjustable UVLO and Enable input. High switching frequency (600kHz) minimizes solution cost and size.

This report includes the application schematic complete with component part numbers and figures 1-6 illustrating electrical performance of the design.

Schematic:



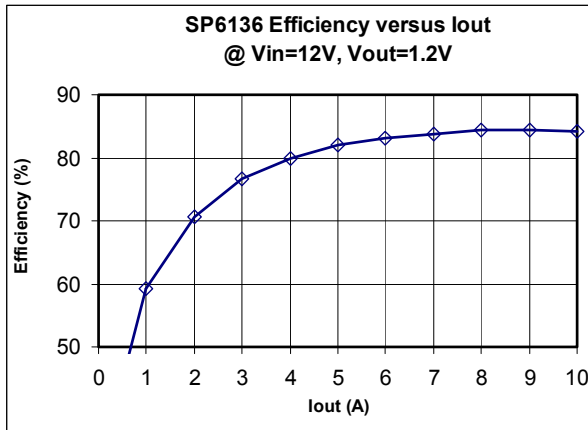


Figure 1: Efficiency, natural convection

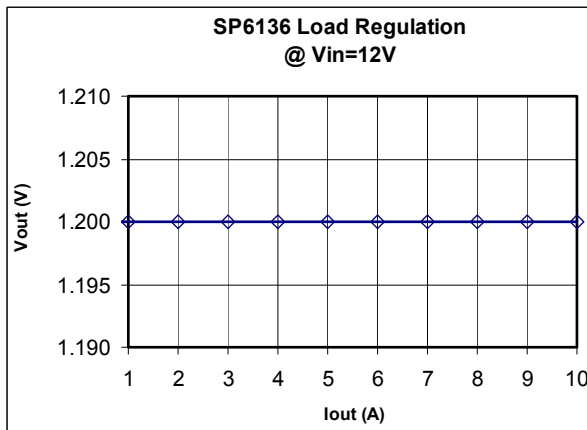


Figure 2. Load regulation

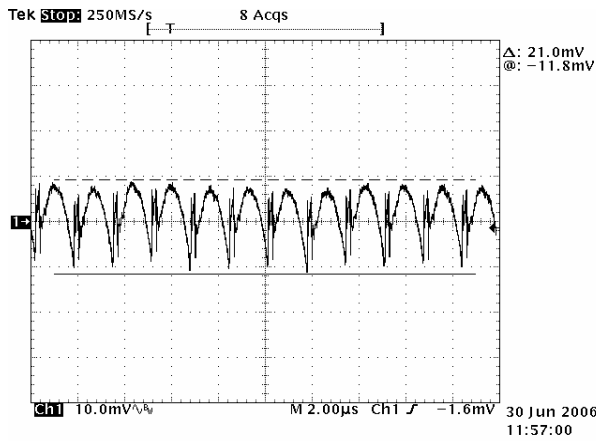


Figure 3. Output ripple at 10A is 21mV

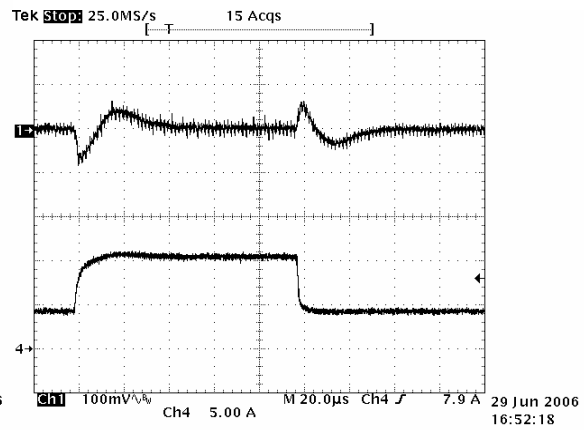


Figure 4. Step load 4A-10A
 Ch1: Vout, ch2: Iout

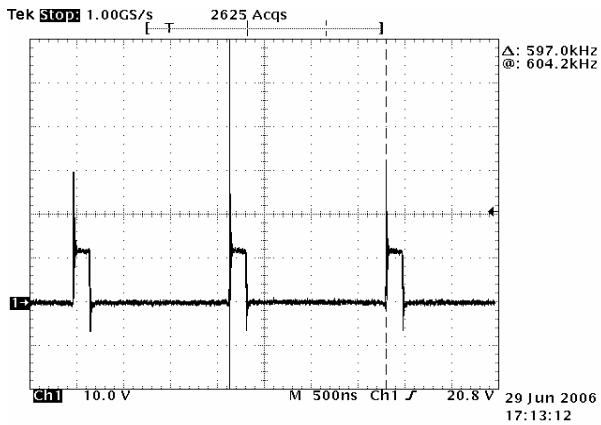


Figure 5. Switching node at 10A

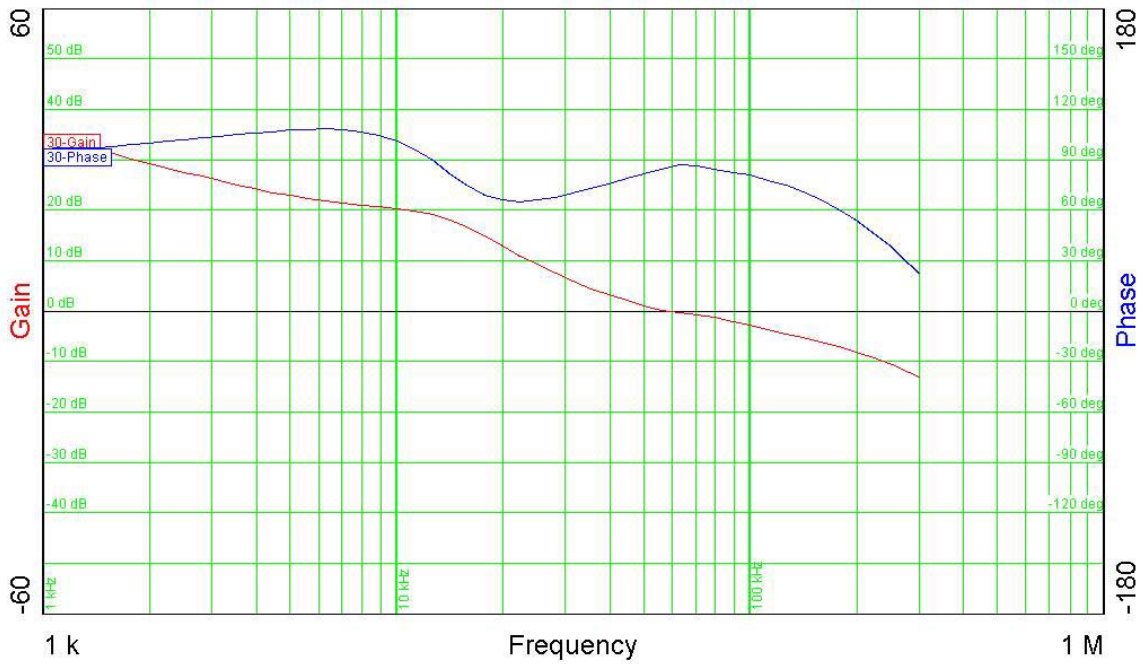
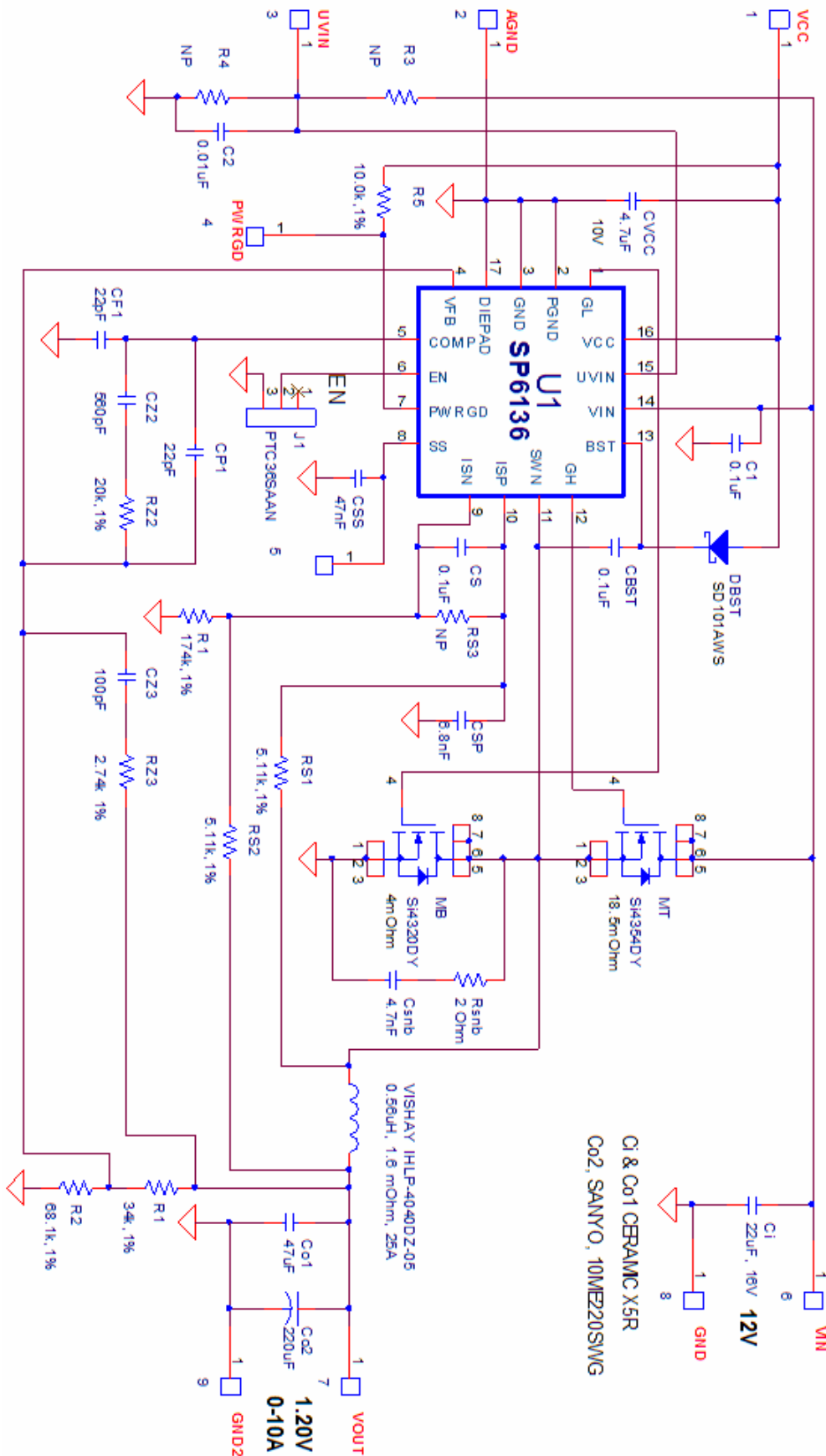


Figure 6. Loop gain-phase plot, $f_c=60\text{kHz}$, phase margin=80 degrees

Circuit Schematic



For further assistance:

Email: Sipexsupport@sipex.com
WWW Support page: <http://www.sipex.com/content.aspx?p=support>
Sipex Application Notes: <http://www.sipex.com/applicationNotes.aspx>



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