3-)Boost Converter (Webench)

First of all, I chose, $V_{in,min}$=4.8 V, $V_{in,max}$=5.2 V, output 12 V at 2 A and 25 °C. I sorted all of the results. Finally, I select TPS61088 because it has higgest efficiency with 95.8 and low BOM area with 123 mm^2. Its cost is average. BOM cost of it is $3.53 and IC cost of it is $1.60.

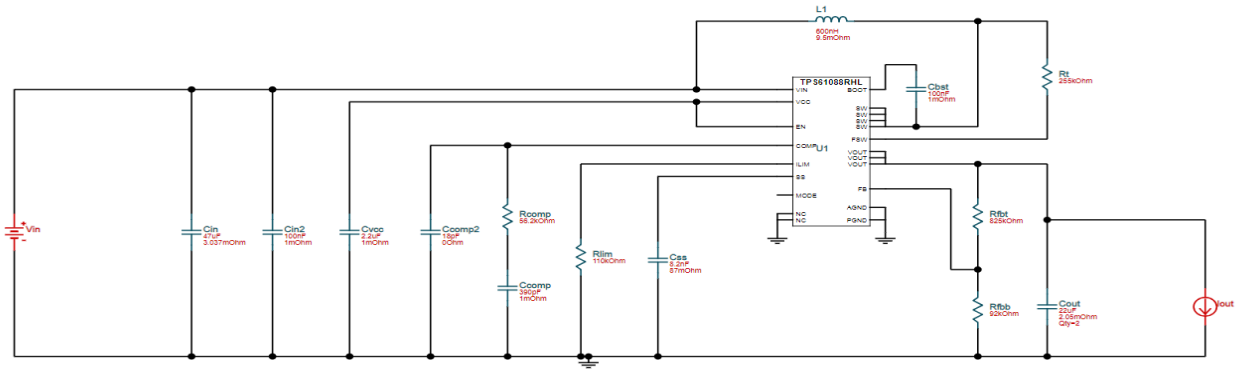

Figure 1: Circuit Schematic of TPS61088 (Boost converter)

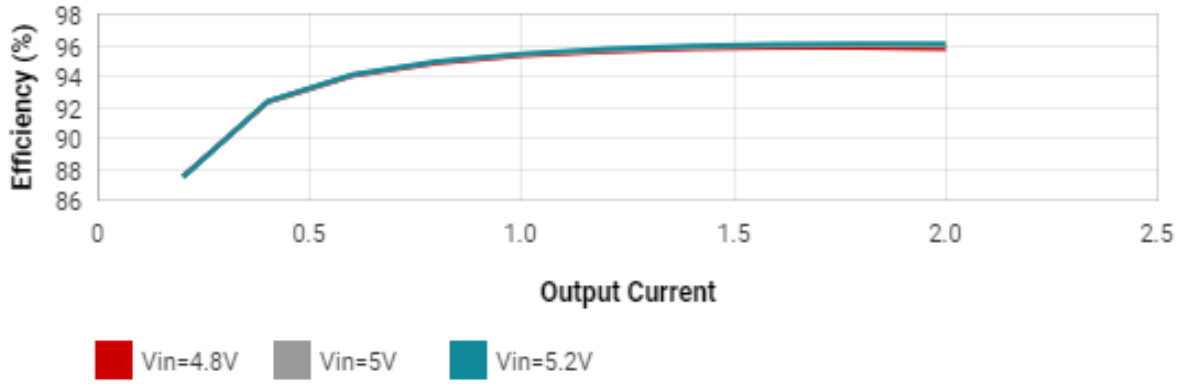

Figure 2: Efficiency vs Output current graph of TPS61088

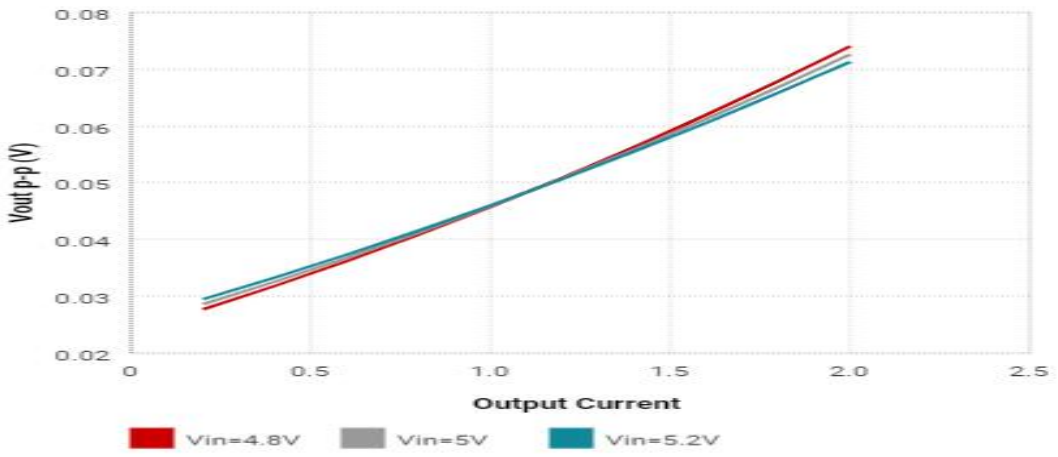

Figure 3: Output voltage ripple vs Output current graph of TPS61088

Table 1 : Operation Values of TPS61088

Inductor Current Peak to Peak Value	8.2 A
Output Voltage Peak to Peak Value	74.05 mV
Efficiency	%95.8
IC Junction Temperature	53.33 °C
Mode	BOOST CCM
FootPrint	123 mm^2
BOM Cost	$3.53

Table 2: Power Dissipation of circuit elements of TPS61088

Cin	17.04 mW
Cout	8.73 mW
L	301.54 mW
IC	730.06 mW
Total	1.06 W

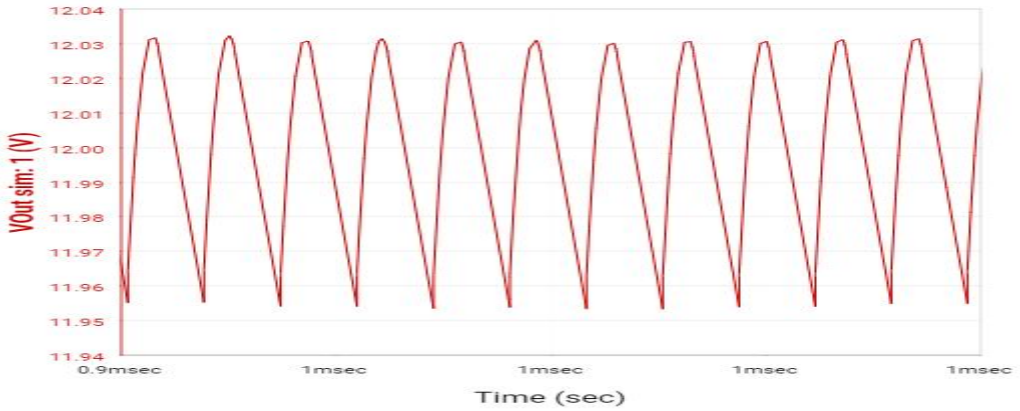

Figure 4: Output Voltage vs Time Graph for Steady-State of TPS61088

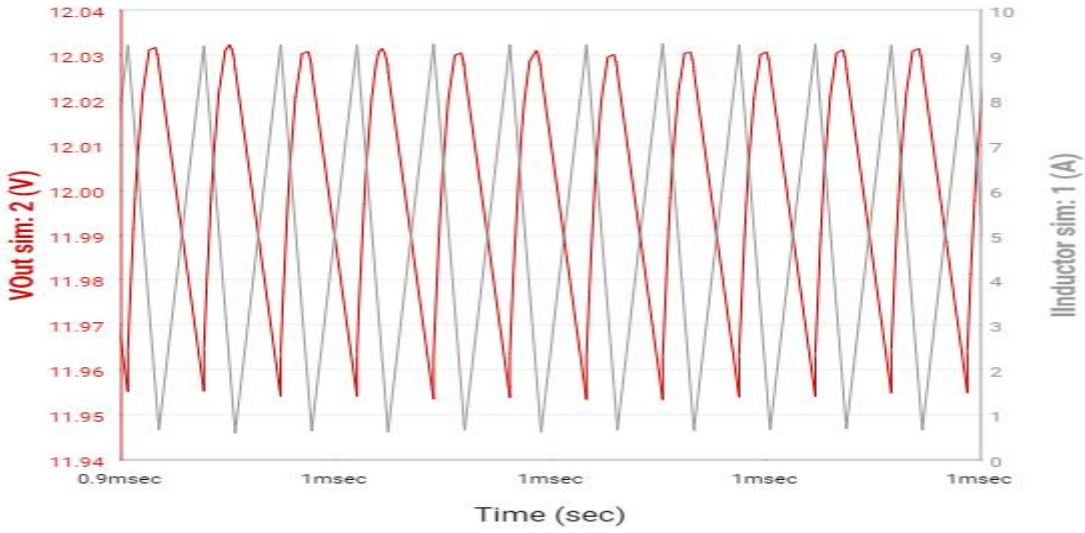

Figure 5: Inductor Current vs Time Graph for Steady-State of TPS61088

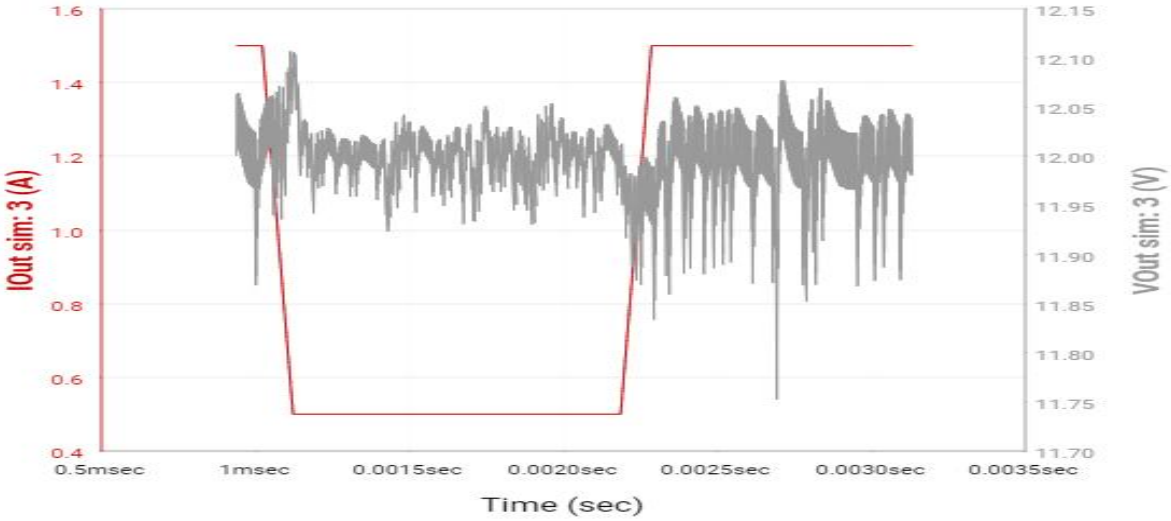

Figure 6: Output Voltage & Load Current vs Time for Load Transient of TPS61088