Pololu 5V Step-Up Voltage Regulator U1V11F5

Typical Efficiency and Output Current

The efficiency of a voltage regulator, defined as (Power out)/(Power in), is an important measure of its performance, especially when battery life or heat are concerns. As shown in the graphs below, this switching regulator typically has an efficiency of 70 to 90%.

The maximum achievable output current is approximately proportional to the ratio of the input voltage to the output voltage. If the input current exceeds the switch current limit (typically somewhere between 1.2 and 1.5 A), the output voltage will begin to drop. Additionally, the maximum output current can depend on other factors, including the ambient temperature, air flow, and heat sinking.

LC Voltage Spikes

When connecting voltage to electronic circuits, the initial rush of current can cause damaging voltage spikes that are much higher than the input voltage. In our tests with typical power leads (~30″ test clips), input voltages above 4.5 V caused voltage spikes that could potentially damage the regulator. You can suppress such spikes by soldering a 33 µF or larger electrolytic capacitor close to the regulator between VIN and GND.

More information about LC spikes can be found in this application note, **Understanding Destructive LC Voltage Spikes**.