Neonixie High Voltage Switch Mode DC-DC Converter

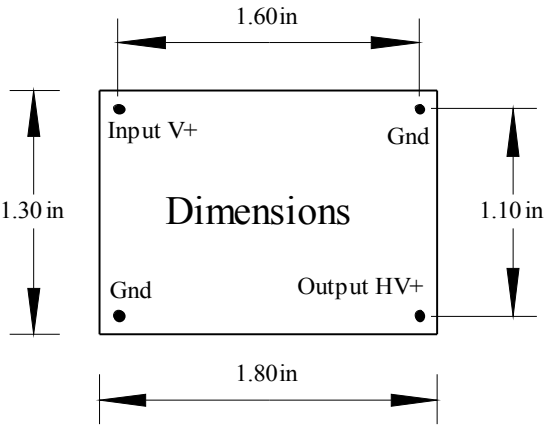
Model # HV-SMPS

The HV-SMPS is a high voltage switch mode DC-DC converter built on the efficient MAX1771 integrated circuit.

Ideal for use in nixie clocks and other projects where high voltage is needed, it provides the benefits of line isolation without the size and weight penalties of a transformer based solution.

Features

- Wide input range 9-30 volts DC[1]
- Wide output range 95-190 volts DC[2]
- High output capability
  - 25ma at 180 volts DC
  - 50ma at 95 volts DC
- Highly efficient, 85+ %
- Precision 21 turn adjustment potentiometer
- Small footprint, 1.8" x 1.3"



Minimum input voltage range varies with high current use. Below are the input voltage requirements for 180v DC output.

Max 5% voltage drop	*HV CURRENT @ 180v DC*	*MIN INPUT VOLTAGE DC*
Full Load	25.0 ma	12.30
Half Load	12.5 ma	8.90

While maximum HV current draw is limited at minimum input voltages, HV current draw at higher (input) voltages is limited by thermal considerations in the supply. Power dissipated in the supply should be limited to 0.8 watts. The chart below is provided as a guideline for maximum allowable current draw.

50.0ma @ 95v	38.9ma @ 130v	27.8ma @ 170v
47.2ma @ 100v	36.1ma @ 140v	25.0ma @ 180v
44.4ma @ 110v	33.4ma @ 150v	22.3ma @ 190v
41.6ma @ 120v	30.6ma @ 160v	**Input = 14v**

Maximum HV current differs with various input and output voltages. If your HV draw approaches the maximum values in the chart, you should evaluate your power dissipation. The following formula can be used:

Input Watts - Output Watts = Loss in Supply

The loss or power dissipation in the supply should NOT exceed 0.8 watts!

Input current is limited to a maximum of 500ma +/- 30ma. Under certain input/output voltage combinations this value can be less.

It is highly recommended that a current limiting device, or a fuse, be installed on the input of the supply. A fuse can also be installed on the high voltage output.

!! HIGH VOLTAGE WARNING !!

This device generates high voltage
and can be lethal.
Assembly and use should only be attempted by
persons familiar with high voltage safety!

[1]High output currents have minimum input voltage requirements, see minimum input voltage chart for details.

[2]Two output voltage ranges depending on resistor chosen during assembly, 95v-140v and 135v-190v.

 www.neonixie.com **info@neonixie.com**