

High Voltage EL Lamp Driver Demoboard

General Description

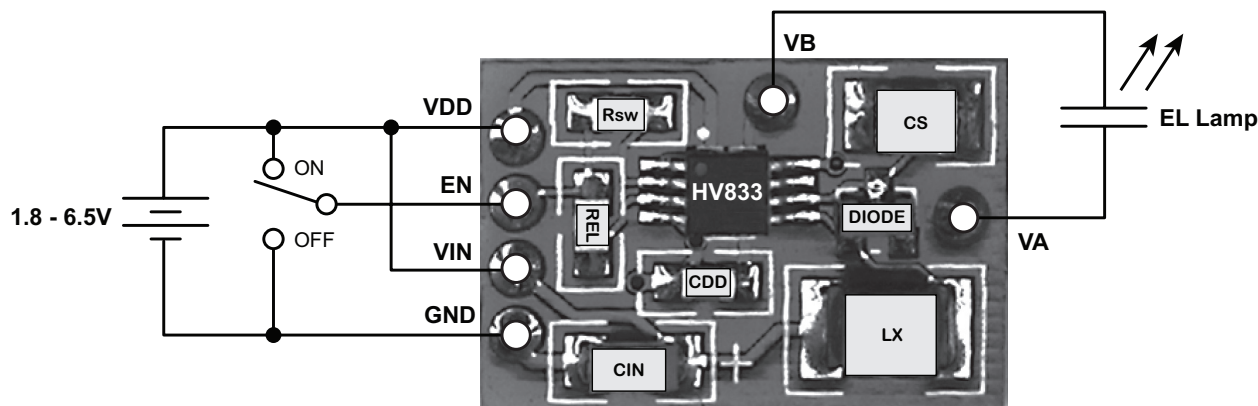
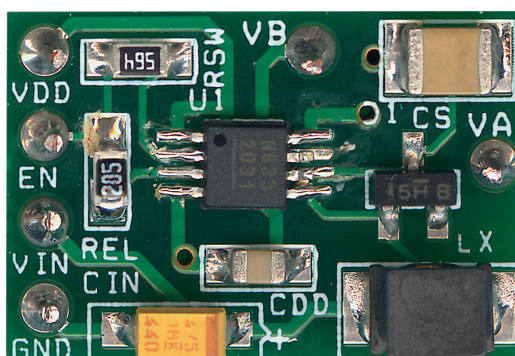
The Supertex HV833DB1 demoboard contains all necessary circuitry to demonstrate the features of the HV833 EL lamp driver.

Simply connect it to a power supply and a lamp as shown below. For additional assistance in designing EL driver circuits, please refer to Application Notes AN-H33 (Effect of External Components on Performance of Supertex EL Drivers) and AN-H45 (EL Lamp Driver Circuits to Reduce Lamp Audible Noise).

Specifications

Parameter	Value
Input voltage	1.8 to 6.5V
Supply current	45mA
Lamp size range	5.5in ² to 10in ²
Lamp frequency	250Hz
Converter frequency	70kHz

Board Layout and Connections



Connections:

EN - Enable Input

Enables/Disables the lamp driver. A logic high (V_{DD}) enables the driver and a logic low (GND) disables the driver. This input may be connected to a mechanical switch, or to a logic circuit output that has a source impedance of less than 20K Ω .

VDD - IC Supply

Supplies the HV833 EL driver IC. The supplied circuit is optimized for 1.8 to 6.5 volt operation.

VIN - Inductor Supply

Supplies the high voltage power converter.

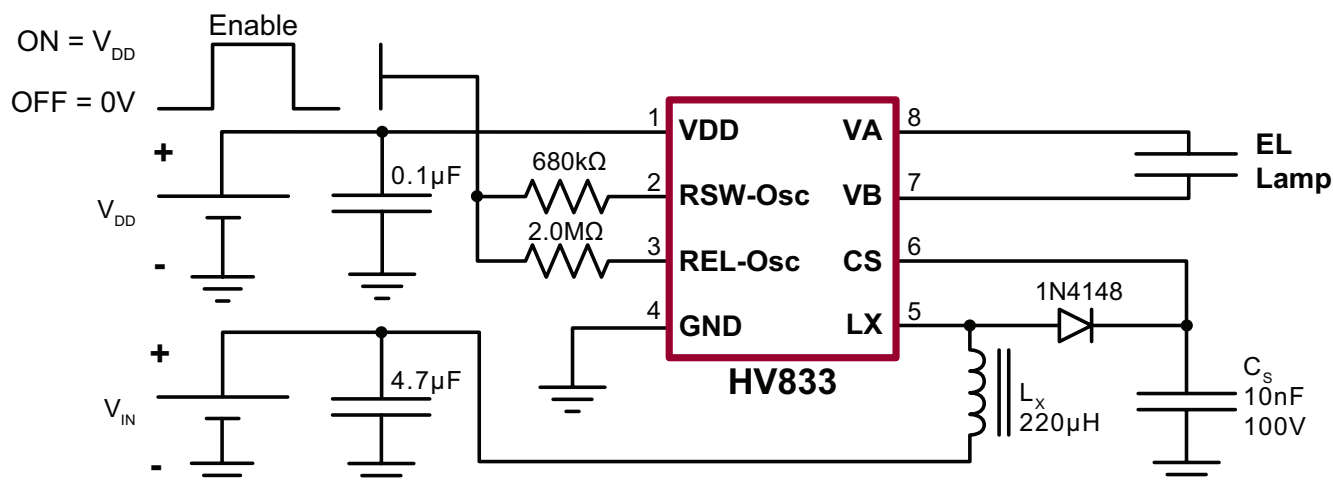
GND - Circuit Ground

Connect to V_{DD} and V_{IN} negative terminals. Supply bypass capacitor for both V_{DD} and V_{IN} are provided on the demo board. External supply bypass capacitors are not necessary.

VA and VB - Lamp Connections

Connect to an EL lamp. Polarity is irrelevant.

Figure1: HV833DB1 Circuit Schematic



Typical Performance

The specific external components used in the above circuit are: $L_x = 220\mu\text{H}$ Murata (LQH43MN221K01), $C_s = 10\text{nF}$ 100V NPO. The following was observed when driving a 10in^2 Green lamp.

V_{IN} (V)	I_{IN} (mA)	V_{CS} (V)	f_{EL} (Hz)	Lamp Brightness	
				ft-lm	cd/m ²
2.0	31.1	49.7	232	1.4	4.7
3.0	41.5	67.8	232	3.4	11.5
4.0	34.0	77.2	232	4.3	14.7
5.0	27.7	81.5	232	4.5	15.5
6.0	24.4	84.3	232	4.7	16.0
6.5	24.2	85.3	232	4.8	16.3

The following was observed when driving a 5.5in^2 Green lamp

V_{IN} (V)	I_{IN} (mA)	V_{CS} (V)	f_{EL} (Hz)	Lamp Brightness	
				ft-lm	cd/m ²
1.8	26.1	56.3	232	2.3	7.9
2.0	29.1	61.9	232	3.0	10.3
3.0	25.2	78.2	232	4.9	16.8
4.0	18.5	82.7	232	5.2	17.8
5.0	14.7	84.6	232	5.2	17.5
6.0	13.5	85.4	232	5.3	18.1
6.5	12.0	86.9	232	5.4	18.5

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