

### Introduction

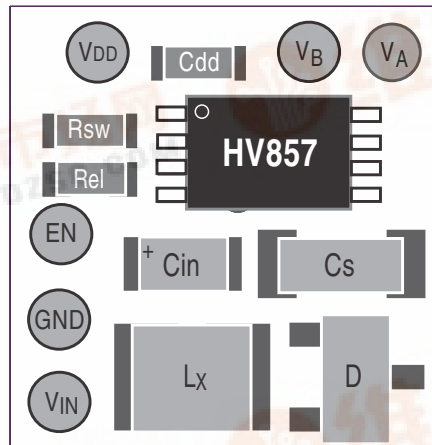
The Supertex HV857DB1 demo board contains all necessary circuitry to demonstrate the features of the HV857 EL lamp driver.

Simply connect it to a power supply and a lamp. 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-H43 (EL lamp driver circuits to reduce audible lamp noise).

### Specifications

Input Voltage	1.8V to 5.0V
Supply Current	25mA
Lamp Size Range	up to 2.6in <sup>2</sup>
Lamp Frequency	250Hz
Converter Frequency	80KHz

### Board Layout and Connections



### Demo Board Connections:

#### EN Enable Input

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

#### $V_{DD}$ IC Supply

Supplies the HV857 EL driver IC. The supplied circuit is optimized for 3.0V operation. The operating range can be from 1.8V to 5.0V. Connect to positive terminal of a power supply.

#### $V_{IN}$ Inductor Supply

Supplies the high voltage power converter. Connect to positive terminal of a power supply.

#### GND Circuit Ground

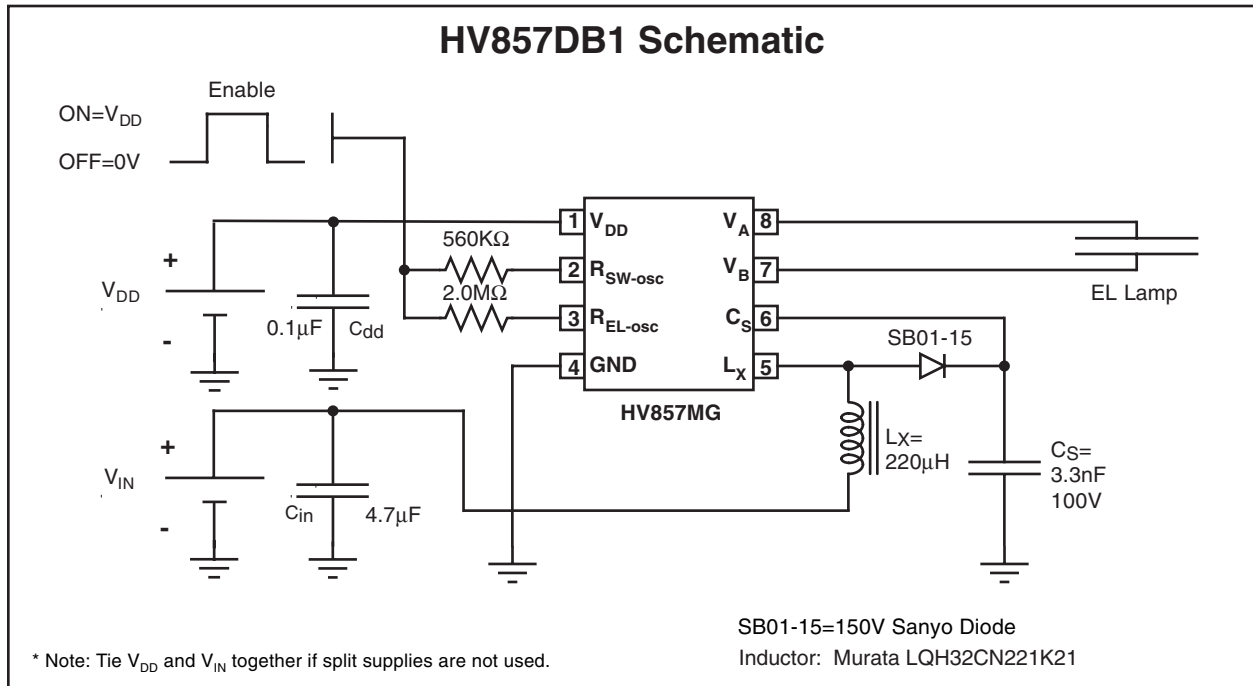
Connect to  $V_{DD}$  and  $V_{IN}$  negative terminals. Supply bypass capacitors for both  $V_{DD}$  and  $V_{IN}$  are provided on the demo board. External supply bypass capacitors are not required.

#### $V_A$ and $V_B$ Lamp Connections

Connect to an EL lamp. Polarity is irrelevant.

\* Note: Make sure all the above connections are made before powering up the supply voltages.





## Typical Performance

The specific external components used in the above circuit are L<sub>X</sub>=220µH Murata (LQH32CN221K21), C<sub>S</sub>= 3.3nF 100V NPO. The following was observed when driving a 2.6in<sup>2</sup> Green lamp.

V <sub>DD</sub> = V <sub>IN</sub> (V)	I <sub>IN</sub> (mA)	V <sub>CS</sub> (V)	f <sub>EL</sub> (Hz)	Brightness	
				ft-lm	cd/m <sup>2</sup>
1.8	24.3	69.6	250	4.26	14.6
2.0	24.9	72.3	250	5.07	17.3
3.0	24.6	85.0	250	8.09	27.7
4.0	20.3	90.0	250	8.64	29.6
5.0	17.7	92.7	250	8.81	30.2

The following was observed when driving a 1.7in<sup>2</sup> Green lamp.

V <sub>DD</sub> = V <sub>IN</sub> (V)	I <sub>IN</sub> (mA)	V <sub>CS</sub> (V)	f <sub>EL</sub> (Hz)	Brightness	
				ft-lm	cd/m <sup>2</sup>
1.8	22.1	76.3	250	4.91	16.8
2.0	20.5	79.8	250	5.76	19.7
3.0	17.3	89.0	250	7.25	24.8
4.0	13.7	92.0	250	7.49	25.6
5.0	11.7	93.5	250	7.54	25.8

The above circuit may need to be optimized further based on specification of the lamp used.