

## Low Noise, High Voltage EL Lamp Driver IC Demoboard

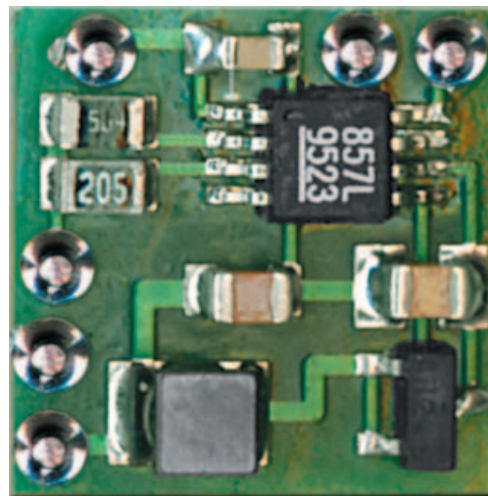
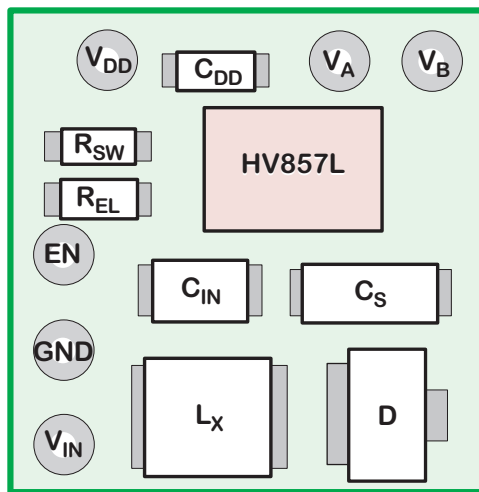
### General Description

The Supertex HV857LDB1 demo board contains all necessary circuitry to demonstrate the features of the HV857L 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).

Specifications	
Input voltage:	1.8V to 5.0V
Typical supply current:	27mA
Lamp size:	3.0in <sup>2</sup>
Lamp frequency:	204Hz
Converter frequency:	70kHz

### Board Layout and Connection Diagram



Actual Dimensions: 12mm x 12mm

### 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 that has a source impedance of less than 20k $\Omega$ .

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

Supplies the HV857L 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 capacitor for both  $V_{DD}$  and  $V_{IN}$  are provided on the demo board. External supply bypass capacitors are not required.

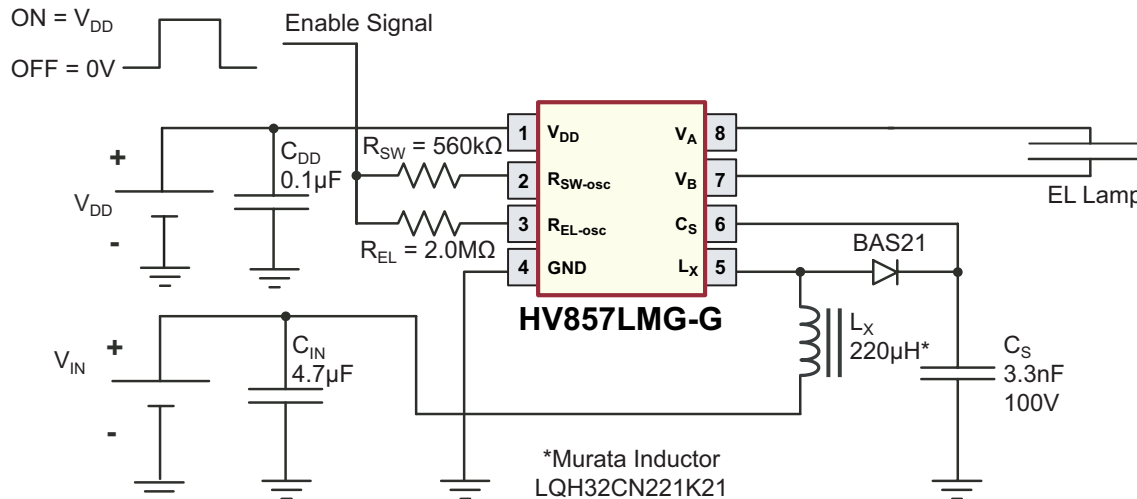
#### $V_A$ and $V_B$ Lamp Connections

Connect to an EL lamp. Polarity is irrelevant.

**Note:**

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

## HV857LDB1 Schematic



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

## Typical Performance (when driving a 3in<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	27.06	70	202	2.49	8.51
2.0	26.95	73	202	3.04	10.40
3.0	27.01	90	204	5.49	18.78
4.0	21.94	96	204	5.97	20.42
5.0	17.55	98	204	6.24	21.33

## HV857LDB1 Bill of Materials

Component	Description	Package	Manufacturer	Part #
L <sub>x</sub>	220µH Inductor	-	Murata	LQH32CN221K21
C <sub>s</sub>	3.3nF, 100V, NPO chip capacitor	0805	Novacap	0805N332K101NT
R <sub>SW</sub>	5%, 560kΩ resistor	0805	Any	---
R <sub>EL</sub>	5%, 2MΩ resistor	0805	Any	---
C <sub>IN</sub>	4.7µF, 10V ceramic chip capacitor	0805	Any	---
C <sub>DD</sub>	0.1µF, 16V ceramic chip capacitor	0603	Any	---
Diode	250V fast recovery diode	SOT-23	Diodes Inc	BAS21
U1	EL driver IC	MSOP-8	Supertex Inc	HV857LMG-G

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