EL Driver Demoboard

General Description

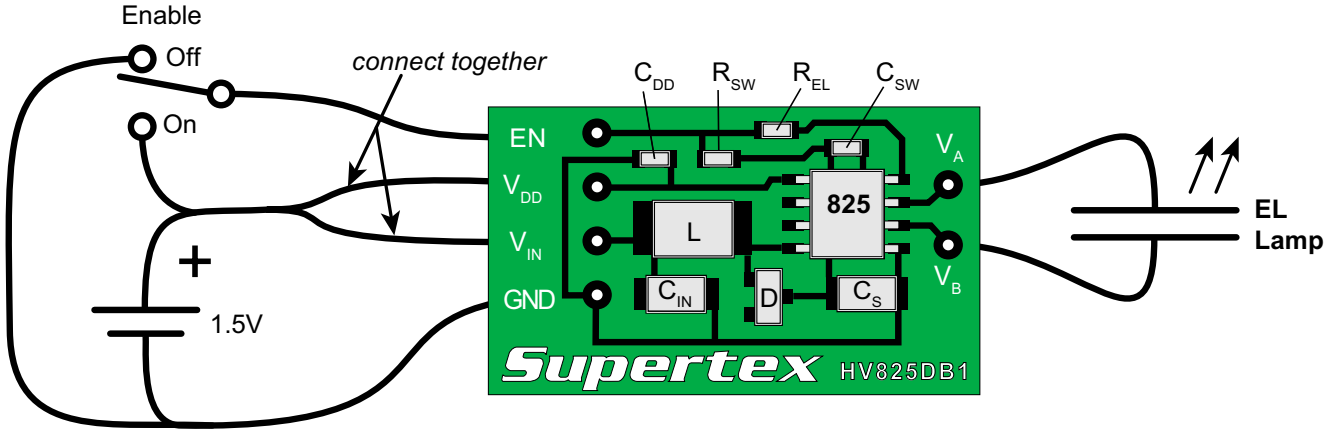
The HV825DB1 EL Driver demoboard contains all the circuitry necessary to drive an EL (Electroluminescent) lamp. Simply connect it to a power supply and a lamp as shown below.

The supplied circuit has been optimized to drive a 1.5in^2 lamp from a 1.5V supply. The circuit may be customized with different component values to suit a particular application. For additional assitance in designing EL driver circuits, please refer to ***Application Notes AN-H33 (EL Lamp Driver Circuits)*** *and* ***AN-H34 (HV823 & HV825 EL Lamp Driver Circuits)***.

Specifications

Parameter	Value
Supply voltage	1.5V
Supply current	27mA (typical)
Lamp size range	1.5in^2
Lamp frequency	450Hz (typical)
Converter frequency	30KHz (typical)

Board Layout and Connection Diagram



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 as shown, or to a logic circuit output that has a source impedance of less than 20kΩ.

V_{DD} - IC Supply

Supplies the HV825 EL driver IC. The supplied circuit is optimized for 1.5V operation. Current draw is less than 1.0µA when disabled.

V_{IN} - Inductor Supply

Supplies the high voltage power converter. Current draw is approximately 27mA.

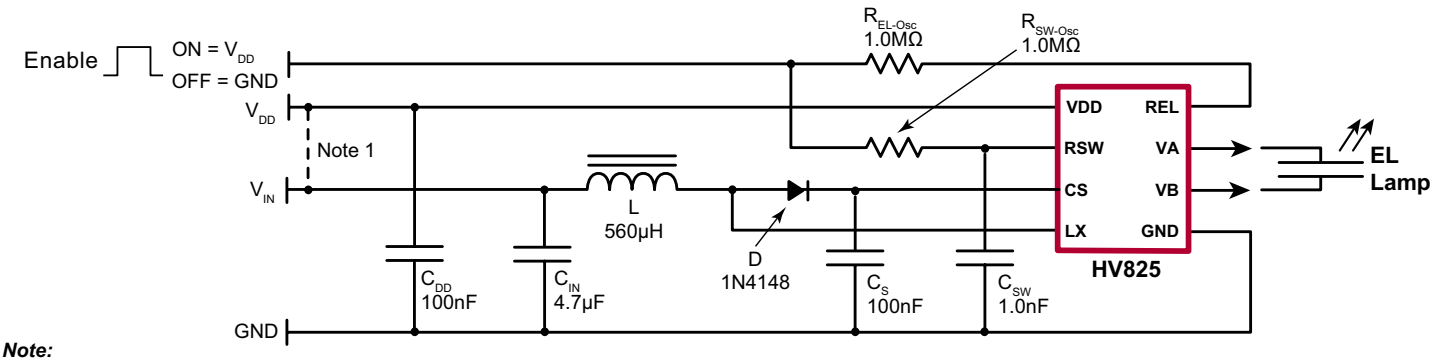
GND - Circuit Ground

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 necessary.

V_A and V_B - Lamp Connections

Connect to EL lamp of 1.5in^2. Polarity is irrelevant.

HV825DB1 Circuit Schematic



Note:

1. *Tie V_{DD} and V_{IN} together if split suppies are not used. C_{DD} is not needed when a single supply is used.*

Modifiying the Supplied Circuit

The supplied circuit is optimized to drive a 1.5in^2 green lamp. To better suit other applications, the circuit can be modified by changing one or more components. The following table lists the typical performance of the HV825 driving a 1.5in^2 and a 2.7in^2 lamp.

The demo board can be easily modified to drive 2.7in2 by changing the inductor, C_S capacitor and the R_{EL} resistor. For component locations, refer to the board layout and connection diagram at the begining of this note. The circuits are designed to operate from a single 1.5V supply connected to V_{DD} and V_{IN}.

Lamp Size (in^2)	Lamp[1] Brightness (ft-lm)	Lamp Color	Lamp Freq (Hz)	V_{IN} Current (mA)	Component Values			
					L[2] (µH)	R_{EL} (MΩ)	R_{SW} (KΩ)	C_S (nF)
1.5	3.6	Green	450	27	560	1.0	1.0	*100*
2.7	3.3	Green	300	45	330	2.0	1.0	10

Notes:

1. *Lamp brightness can vary by type and manufacturer.*
2. *The recommended inductor is a Murata LQH4N series. Other inductors may be used, however, different inductor characteristics (especially series resistance) may result in overall circuit performance different from that listed. Please refer to* ***Application Note AN-H33*** *for more information.*

Supertex inc.
1235 Bordeaux Drive, Sunnyvale, CA 94089
Tel: 408-222-8888
www.supertex.com