

High Voltage, Low Noise, Inductorless EL Lamp Driver Demoboard

General Description

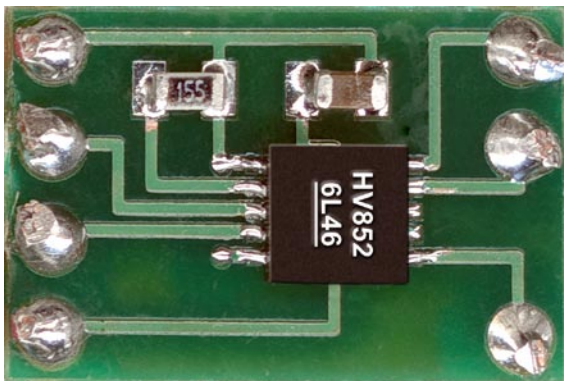
The Supertex HV852DB1 demoboard contains all necessary circuitry to demonstrate the features of the HV852 EL lamp driver.

Simply connect it to a power supply and a lamp, as shown below. For additional assistance in implementation of the HV852 circuit, please refer to the HV852 data sheet.

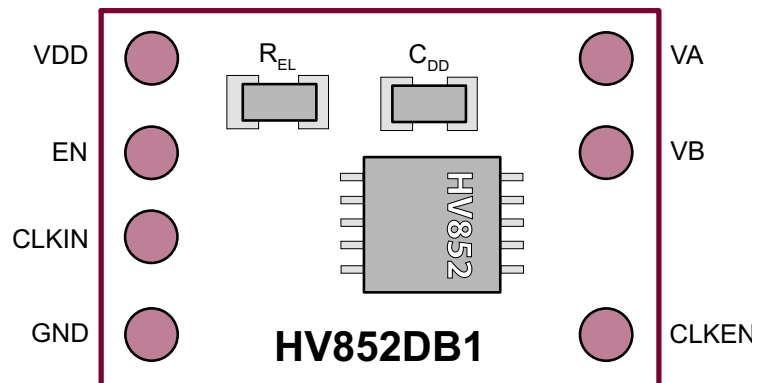
Specifications

Parameter	Value
V _{DD} input voltage:	2.4 to 5.0V
Supply current:	25mA
Lamp size:	1.5in ²
Lamp frequency:	245Hz

Board Layout and Connection Diagram



Actual Dimensions: 13mm x 8.0mm



Connections:

EN - Enable Input

Enables/Disables the lamp driver. 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.

V_{DD} - IC Supply

Supplies the HV852 EL driver IC. The supplied circuit is optimized for 2.4 to 5.0V operation.

V_A and V_B - Lamp Connections

Connects to an EL lamp. Polarity is irrelevant.

GND - Circuit Ground

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

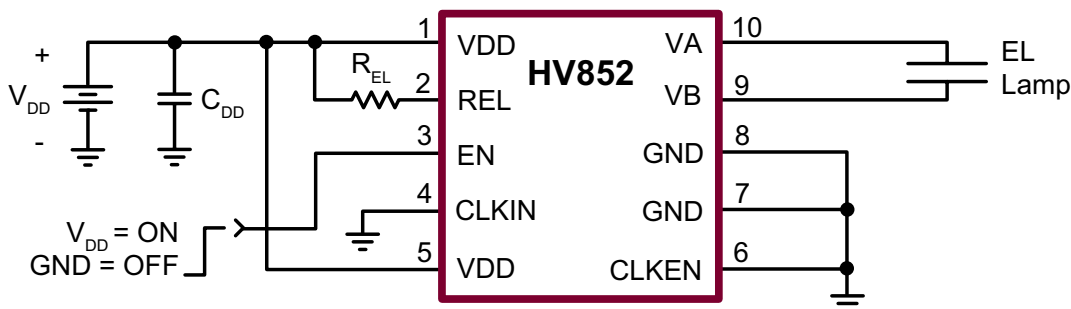
CLK_{EN} - Clock Enable

To use external clock for setting the EL lamp frequency, this pin will need to be connected to V_{DD}. To set the lamp frequency via REL, this pin will need to be connected to GND.

CLK_{IN} - Logic Input

An external logic clock applied to this pin can be used to set the EL lamp frequency. When using external clock signal, R_{EL} will need to be removed, and R_{EL} pin will need to be connected to GND. CLK_{EN} will need to be connected to V_{DD} when an external clock signal is used. Connect both CLK_{EN} and CLK_{IN} to GND when not in use.

Circuit Schematic



Typical Performance

The specific external components used in the above circuit are: $C_{DD} = 2.2\mu\text{F}$, 6.3V ceramic capacitor and $R_{EL} = 1.5\text{M}\Omega$.

The following was observed when driving a 0.93in² green lamp and 1.5in² green lamp.

Lamp Size (in ²)	V_{DD} (V)	I_{DD} (mA)	V_{PEAK} (V)	f_{EL} (Hz)	Lamp Brightness	
					(ft-lm)	(cd/m ²)
0.93	2.4	15.6	79	245	4.30	14.7
0.93	3.0	14.9	79	245	5.10	17.4
0.93	3.6	14.7	79	245	5.32	18.2
0.93	4.2	15.1	79	245	5.50	18.8
0.93	5.0	15.7	79	245	5.61	19.2
1.50	2.4	19.0	66	245	2.81	9.60
1.50	3.0	23.4	79	245	4.77	16.3
1.50	3.6	23.5	79	245	5.26	18.0
1.50	4.2	23.7	79	245	5.53	18.9
1.50	5.0	24.1	79	245	5.73	19.6

Bill of Materials

Part	Description	Package	Manufacturer	Part Number
R_{EL}	1%, 1.5M Ω resistor	0603	Any	---
C_{DD}	2.2 μF , 6.3V, ceramic chip capacitor	0603	Any	---
U1	EL driver IC	10-Lead DFN	Supertex Inc	HV852K7-G

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

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