HV832DB1
Dual EL Lamp Driver

Introduction

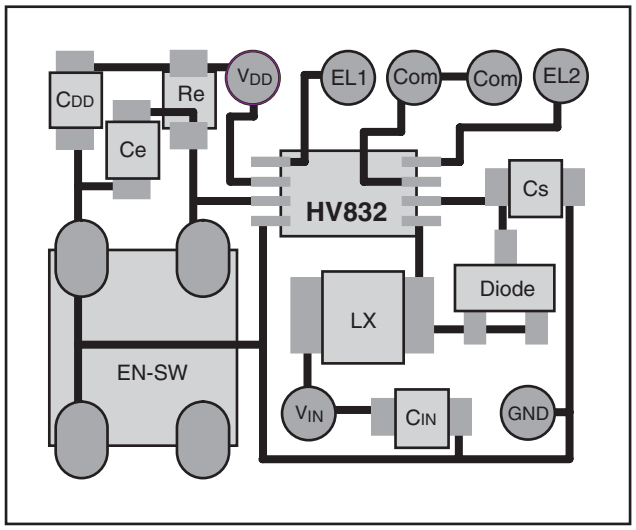
The Supertex HV832DB1 demo board contains all necessary circuitry to demonstrate the features of the HV832 dual EL lamp driver.

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), application note AN-H44 (HV832 application circuits), and AN-H43 (EL lamp driver circuits to reduce lamp audible noise).

Specifications

Input Voltage	3.0V to 4.2V
Supply Current	40mA Max.
Lamp Size Range	Up to 2.7in^2
Lamp Frequency	417Hz
Converter Frequency	53.4KHz

Board Layout and Connections



Demo Board Connections:

Control lamp selection/Enable Input (EN-SW)

Various modes of the device are selected via the control pin/EN-SW. Each logic pulse applied to the control pin/EN-SW will cause the device to change to the next mode. The sequence for the modes is: 1) EL1 on, 2) EL2 on, 3) both EL1 and EL2 on, and 4) device shuts down. This input may be connected to a mechanical switch, or to a logic circuit output that has a source impedance of less than 20KΩ.

V_{DD} IC Supply

Supplies the HV832 EL driver IC. The supplied circuit is optimized for 3.0 to 4.2 volt operations. 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 necessary.

EL1 and EL2 Lamp Connections

Connects to lamps 1 and 2. Polarity is irrelevant.

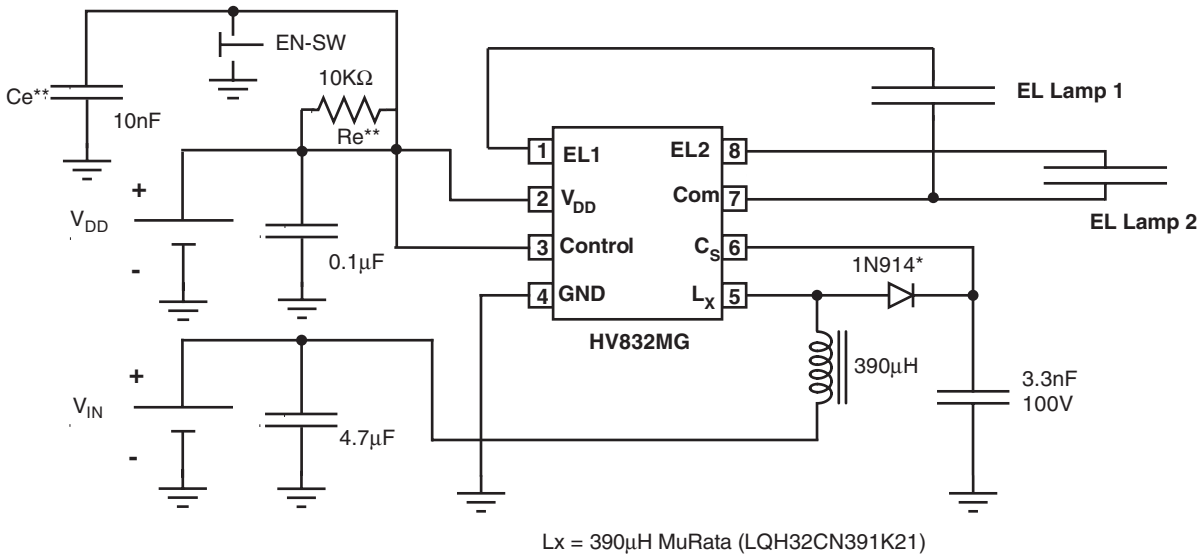
Com Lamp Connections

Connects to the other side of lamps 1 and 2. Polarity is irrelevant.

12/14/01

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HV832DB1 Schematic



Lx = 390µH MuRata (LQH32CN391K21)

* Any (equivalent or better)> 90V, fast reverse recovery diode
** Re and Ce are used to prevent change in lamp selection due to use of mechanical switch which can have contact bounce.

Typical Performance

The specific external components used in the above circuit are L_X=390µH Murata (LQH32CN391K21), Cs= 3.3nF 100V NPO.

The following was observed when driving a 0.93in^2 Green lamp.

V_{DD}(V)	V_{IN}(V)	Lamp Selection	I_{IN}(mA)	V_{CS}(V)	f_{EL}(Hz)	Brightness	
						ft-lm	cd/ m^2
3.3	3.3	Lamp 1 or 2	20.9	80.7	417	11.75	40.2
		Both lamps	31.1	73.0		10.64	36.4
3.0	3.0	Lamp 1 or 2	21.9	78.4		11.34	38.8
		Both lamps	32.0	70.1		9.82	33.6
	3.2	Lamp 1 or 2	21.3	79.8		11.64	39.8
		Both lamps	31.4	72.3		10.29	35.2
	4.2	Lamp 1 or 2	19.3	85.2		12.43	42.5
		Both lamps	28.3	81.0		11.58	39.6

The following was observed when driving EL1=1.3in^2 and EL2=0.93in^2 Green lamps.

V_{DD}(V)	V_{IN}(V)	Lamp Selection	I_{IN}(mA)	V_{CS}(V)	f_{EL}(Hz)	Brightness	
						ft-lm	cd/ m^2
3.3	3.3	EL1	23.8	81.3	417	10.79	36.9
		EL2	20.9	80.7		11.75	40.2
		Both lamps	34.2	71.7		9.59	32.8

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

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