

HV809DB2 EL Driver Demo Board

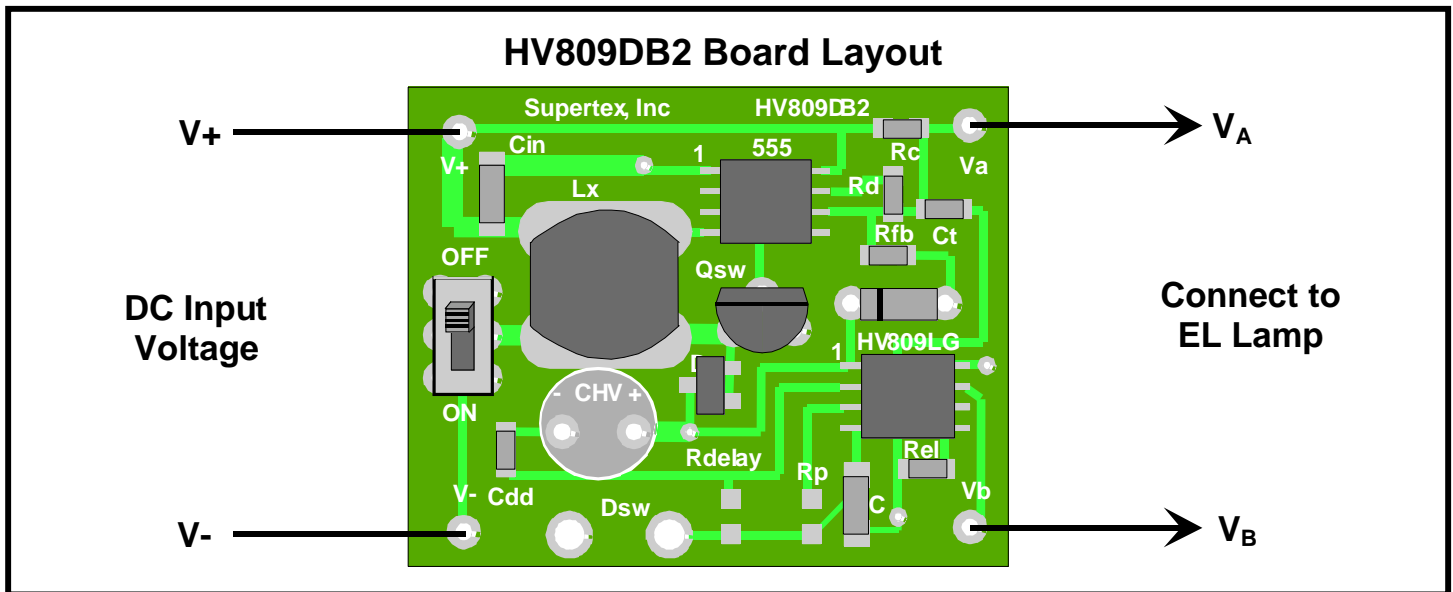
Introduction

The Supertex HV809DB2 EL Driver demo board contains all the circuitry necessary to drive an EL (Electroluminescent) lamp. Simply connect it to a 4.5V to 6.0V DC supply and an EL lamp as shown below.

For additional assistance in designing EL driver circuits, please refer to application note AN-H36 (EL Lamp Driver Circuits).

Specifications

Supply Voltage	6.0V
Supply Current	~170mA
Lamp Size Range	Up to 12.5in ²
Lamp Frequency	~200Hz



V+ and V-

DC input supply voltage. V+ is the positive side of the supply and V- is the return side. It supplies the boost converter circuit to generate the high DC voltage to the HV809. The supplied circuit is optimized for an operating range of 4.5 to 6.0 volts.

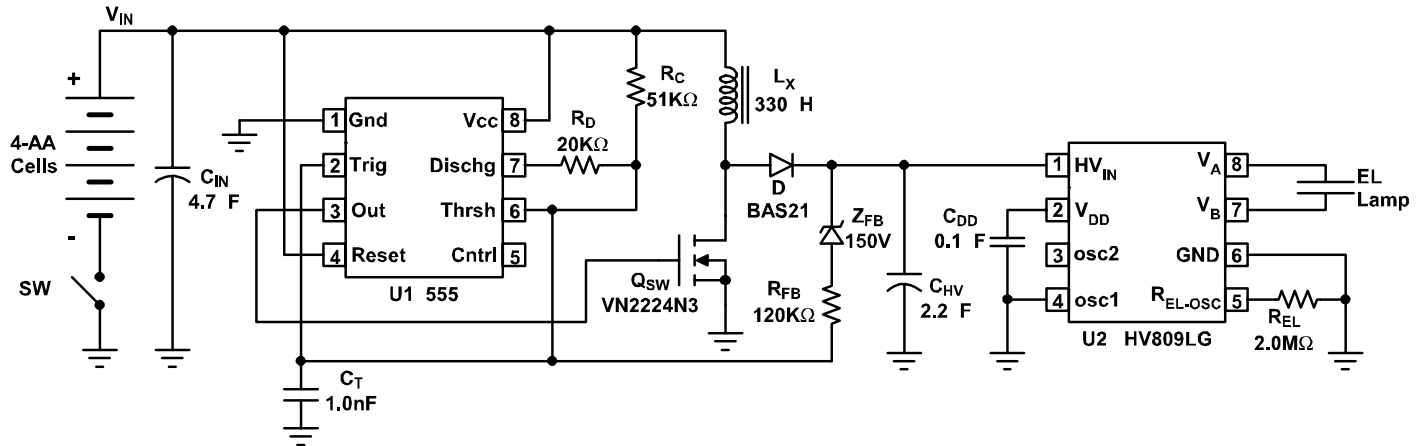
V_A and V_B

V_A and V_B are the EL lamp connections. Polarity is irrelevant. Maximum lamp size should be limited to 12.5in².

Switch

An On/Off slide switch is provided. When in the off position, it disconnects the input voltage to the circuit.

HV809DB2 Schematic



Typical Performance

Lamp Size (in ²)	Input Voltage (V)	Input Current (mA)	Lamp Frequency (Hz)	Brightness (ft-lm)
3.0	4.5	48.4	208	13.5
3.0	6.0	40.5	208	14.1
6.0	4.5	81.5	208	13.0
6.0	6.0	66.9	208	13.6
12.5	4.5	164.4	208	14.9
12.5	6.0	130.2	208	15.5

Note that the differences in brightness in the above measurements are due to the differences between lamps used (it is within the tolerance of the lamp for most manufacturers).

Bill of Materials

Item	Description	Value	Package	Manufacturer	Part Number
R _C	Thick film chip resistor	51kΩ ±5%	0805	Any	-
R _D	Thick film chip resistor	20kΩ ±5%	0805	Any	-
R _{FB}	Thick film chip resistor	120kΩ ±5%	0805	Any	-
R _{EL}	Thick film chip resistor	2.0MΩ ±5%	0805	Any	-
C _{IN}	Tantalum capacitor	4.7μF, 16V	1206	Any	-
C _T	X7R ceramic chip capacitor	1.0nF, 50V	0805	Any	-
C _{HV}	Radial electrolytic capacitor	2.2μF, 250V	6.3mm	Any	-
C _{DD}	X7R ceramic chip capacitor	0.1μF, 16V	0805	Any	-
D	250V diode	250V	SOT-23	Motorola	BAS21
Z _{FB}	Zener diode	150V, 5%	DO-35	Microsemi	1N5276B
Q _{SW}	N-channel MOSFET	250V, 1.25Ω	TO-92	Supertex	VN2224N3
L _X	Inductor	330μH	Surface Mount	J.W. Miller	PM105-331K
SW	Slide switch	SPDT	PC Mount	E-Switch	EG1271A
U ₁	Timer IC	-	SO-8	National	LM555CM
U ₂	EL lamp driver IC	200V	SO-8	Supertex	HV809LG

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