

HV809 Drives Large Lamps at High Brightness

We are pleased to introduce the HV809, an EL backlight IC suitable for driving very large displays up to 100 square inches.

Unlike other EL Backlight ICs from Supertex, this product does not have a built in DC to DC converter to generate the high voltage DC from a low voltage battery. This IC can be powered by a DC input voltage of 50 to 200V, which may be obtained by rectifying utility voltages or from some other kind of power supply. The output of its inverter stage supplies the EL lamp with an AC square wave with a peak-to-peak voltage of two times the input DC voltage.

Main Specifications

Input Voltage:	50V to 200V
Output Voltage:	100V to 400V P-P
Load capacitance:	350nF max.
Output drive frequency:	320Hz to 1.2KHz
Package options:	7-Pin TO-220 8-Lead P-Dip 8-Lead SO Die

Operation

The HV809 has two internal oscillators, a low output voltage linear regulator, and a high voltage output H-bridge. The high voltage output H-bridge frequency is set by an external resistor connected between the R_{EL-OSC} and GND pins. This H-bridge inverts the DC input to an AC output at two times the DC input voltage. The EL lamp is connected between V_A and V_B . For the HV809 in the 8-Pin package, an external RC network can be connected between the oscillator's OSC1 and OSC2 pins to pulse the EL lamp on and off.

Features and Benefits

Features	Benefits
– Input voltage up to 200V	❖ Allows operation from 120V rectified AC, and does not require use of a transformer
– Up to 400V peak-to-peak output voltage	❖ Provides high brightness. Depending on panel size, up to 50 Foot Lamberts (170 candela per sq. meter) can be achieved
– Output load up to 350nF	❖ Ability to backlight very large panels
– Adjustable output lamp frequency up to 1.2KHz	❖ Allows adjustment of lamp color including white at high frequencies ❖ Allows adjustment of brightness and optimization of power consumption
– Adjustable On/Off pulsing frequency.	❖ Allows the lamp to be flashed at different rates depending on requirements

Applications

The ability of the HV809 to drive large loads will make it suitable for lighting up advertising signs and displays because their size can be quite large, up to 100 square inches. Additionally, the high AC output voltage will allow high brightness suitable for various applications, some of which are listed below:

Advertising signs/displays

Electronic games

Global positioning systems

Point of sale terminals

Handheld personal computers

Data acquisition terminals

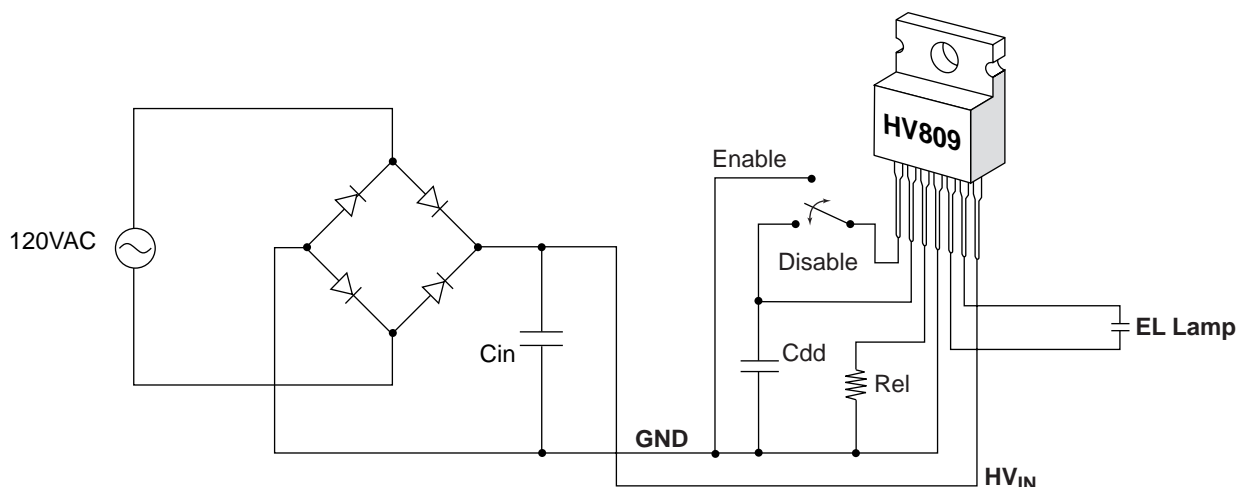
Remote control terminals

Instrumentation panels

Control panels/Keypads

A typical application schematic using the HV809 as an Off-Line EL driver scheme is shown in Figure 2. Application schematics showing a pulsating EL driver deriving its input voltage from a DC-DC converter powered by a battery, and as an EL driver with delayed turn-off are shown in the datasheet in Supertex's new 1998-99 data book.

Off-Line EL Lamp Driving Scheme



Pricing and Availability

Pricing is shown in the Price List on this website. For samples and production leadtimes, please contact your local sales representative or distributor.

Supertex inc.

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EL LAMP DRIVER REQUIREMENTS

CUSTOMER

Name	Title	
Company	Division	
Address		
City	State	Zip Code

APPLICATION

Project	Quantity	Units/month	Design Start Date
<input type="checkbox"/> Pager <input type="checkbox"/> Cell Phone <input type="checkbox"/> Wireless Terminal <input type="checkbox"/> PDA/HPC/Organizer <input type="checkbox"/> Other (specify):			Pre-Production
			Full Production

GENERAL REQUIREMENTS

Lamp Size	Brightness at Lamp: _____ <input type="checkbox"/> Ft. Lm. <input type="checkbox"/> Candelas <input type="checkbox"/> Nits <input type="checkbox"/> Other _____
More Important: <input type="checkbox"/> Brightness <input type="checkbox"/> Current	Supply _____ Volts \pm _____ Volts @ _____ mA (available)

DETAILED REQUIREMENTS

1. LAMP

Usage: <input type="checkbox"/> Display Backlight <input type="checkbox"/> Keypad Backlight <input type="checkbox"/> Other (specify): _____	Manufacturing:
Color: <input type="checkbox"/> Green <input type="checkbox"/> Blue <input type="checkbox"/> Blue-Green <input type="checkbox"/> White <input type="checkbox"/> Other: _____	Capacitance: _____ nF
On-time: _____ hr/day	Lamp Frequency: _____ Hz
Lamp Connector: <input type="checkbox"/> solder pins <input type="checkbox"/> flex connector <input type="checkbox"/> elastomeric <input type="checkbox"/> Other: _____	

2. SUPPLIES AVAILABLE

<input type="checkbox"/> Battery _____ Volts \pm _____ % @ _____ mA	Other: _____ Volts \pm _____ % @ _____ mA
<input type="checkbox"/> DC Regulated _____ Volts \pm _____ % @ _____ mA	_____ Volts \pm _____ % @ _____ mA

3. FEATURES (Check All That Apply)

<input type="checkbox"/> ON / OFF Control: <input type="checkbox"/> Logic Level <input type="checkbox"/> Push Button (SPST-NO)	<input type="checkbox"/> Brightness Control: <input type="checkbox"/> Trimmer <input type="checkbox"/> Logic <input type="checkbox"/> Push Button
<input type="checkbox"/> On/Off Switch (SPDT) <input type="checkbox"/> Push Button w/ time-out	<input type="checkbox"/> Ambient Light Compensation
	<input type="checkbox"/> DC-DC Converter Oscillator: <input type="checkbox"/> Internal <input type="checkbox"/> External
<input type="checkbox"/> DC-DC Osc Frequency: _____ Khz \pm _____ % <input type="checkbox"/> Not Critical	<input type="checkbox"/> Independent Lamp Oscillator

4. SIZE

PACKAGE: <input type="checkbox"/> SO-8 <input type="checkbox"/> MSOP <input type="checkbox"/> Die <input type="checkbox"/> Other: _____	Height Limit: _____ <input type="checkbox"/> mm <input type="checkbox"/> inches
	Board Area Limit: _____ <input type="checkbox"/> cm ² <input type="checkbox"/> in ²

5. SPECIAL REQUIREMENTS (List In Space Below)

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6. OTHER ALTERNATIVES (List In Space Below)

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Fax completed form to (408) 222-4895, Attn: Applications Department

DATE: _____ REP: _____ PHONE: _____