

HV857 EL Lamp Driver Circuits

This application note presents six EL driver circuits utilizing the Supertex HV857 integrated circuit. They have been optimized for a variety of applications and may be used as is or used as a starting point in designing a circuit for a particular application.

When constructing and testing one of the driver circuits listed below, keep in mind that results may differ from those given due to component tolerances and lamp characteristics.

When making component changes, always remove supply

voltage first. After making adjustments, bring up the supply voltage slowly (starting from the minimum required device input voltage) while monitoring input current. Excessive input current may be a good indication of connection errors or incorrect component values. A sharp rise in current usually indicates a saturated inductor. To avoid inductor saturation, use a higher current rated inductor or increase the conversion frequency by lowering the R_{SW} resistor value.

Circuit Selector Guide

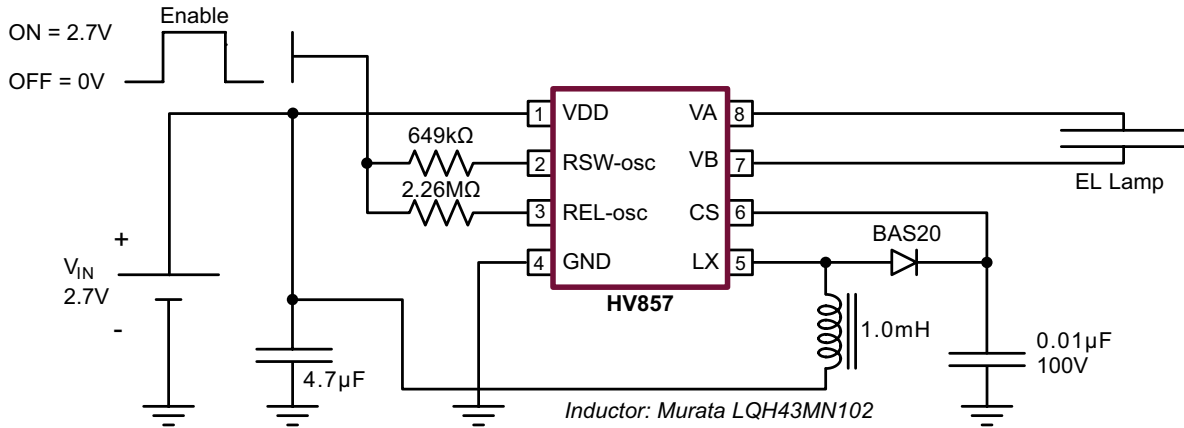
Circuit	Applications	Lamp Color/ Size (in ²)	Lamp Brightness ¹ (ft-lm)	Supply Voltage (V)	Supply Current (mA)	Output Voltage (V _{p.p})	Output Frequency (Hz)
1	Watches.	Green/ 1.0	4.2	2.7	8.5	166	197
2	Travel clocks, wall thermostats, thermometers.	Green/ 1.6	5.9	1.5/3.0	48.0	154	393
3	MP3 players, travel clocks, wall thermostats, thermometers.	Green/ 1.6	3.5	3.0	10.0	156	197
4	Pulse oximeters, cell phones, glucometers.	Green/ 2.0	5.3	3.0	11.8	172	197
5	GPSs, cell phones, organizers, glucometers, BP monitors.	Green/ 3.0	5.9	3.0	20.9	172	260
6	PDA's, GPSs, cell phones, radios, clocks, organizers, glucometers, BP monitors.	Green/ 4.0	8.5	3.0	38.0	172	393

Notes:

1. Lamp brightness can vary by type and manufacturer.

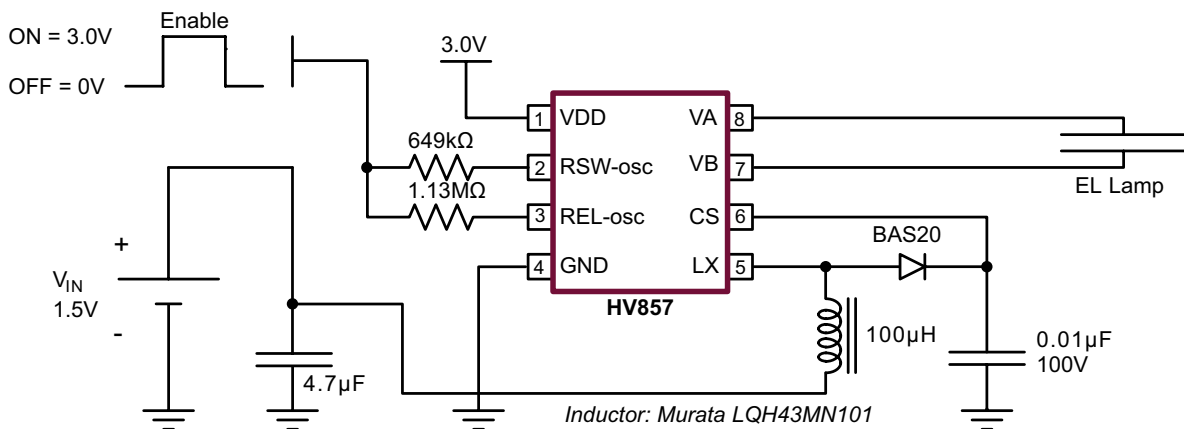
Circuit 1

Application	Lamp Color/ Size (in ²)	Lamp Brightness (ft-lm)	Supply Voltage (V)	Supply Current (mA)	Output Voltage (V _{p-p})	Output Frequency (Hz)
Watches.	Green/ 1.0	4.2	2.7	8.5	166	197



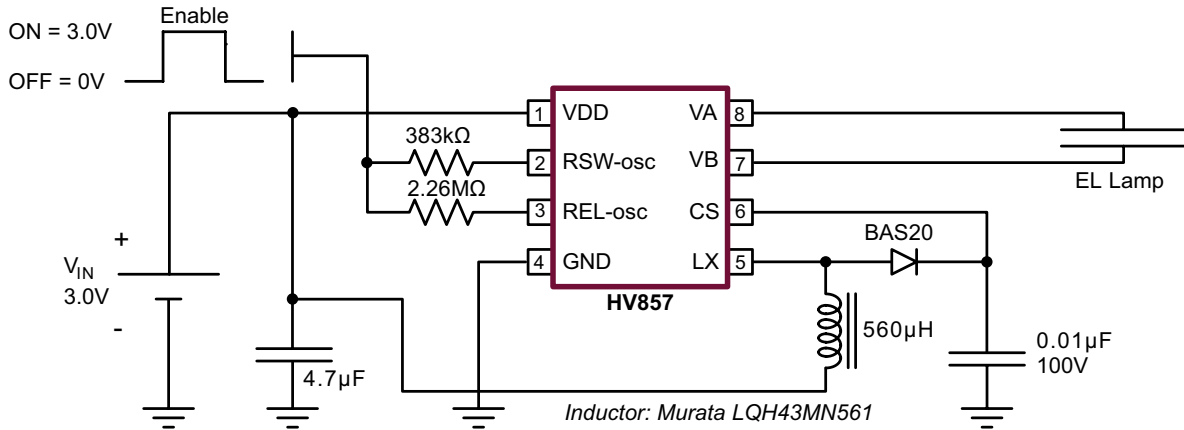
Circuit 2

Application	Lamp Color/ Size (in ²)	Lamp Brightness (ft-lm)	Supply Voltage (V)	Supply Current (mA)	Output Voltage (V _{p-p})	Output Frequency (Hz)
Travel clocks, wall thermostats, thermometers.	Green/ 1.6	5.9	1.5 / 3.0	48.0	154	393



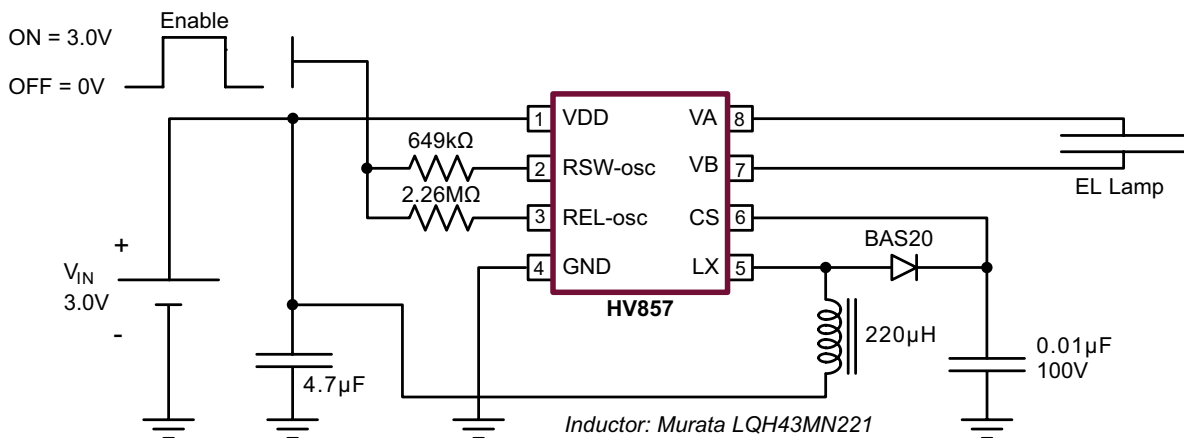
Circuit 3

Application	Lamp Color/ Size (in ²)	Lamp Brightness (ft-lm)	Supply Voltage (V)	Supply Current (mA)	Output Voltage (V _{p-p})	Output Frequency (Hz)
MP3 players, travel clocks, wall thermostats, thermometers.	Green/ 1.6	3.5	3.0	10.0	156	197



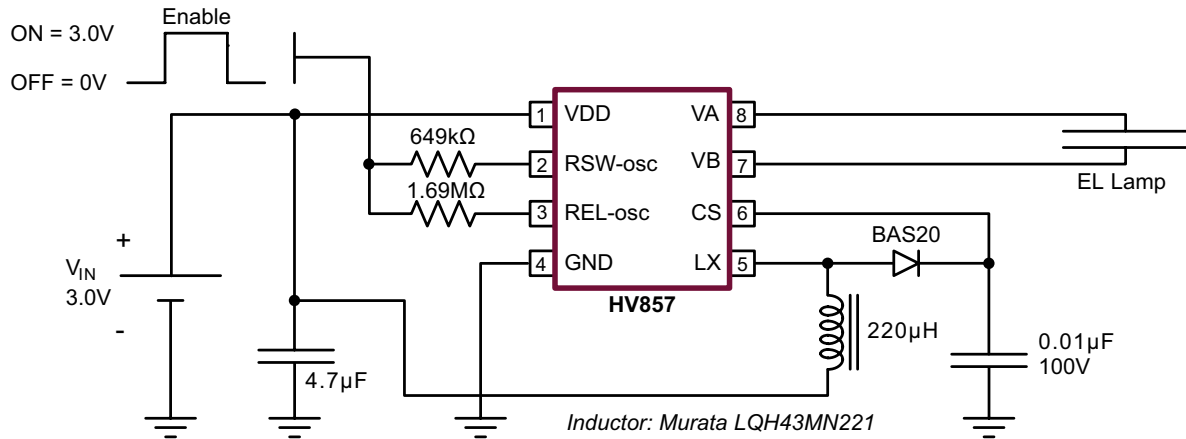
Circuit 4

Application	Lamp Color/ Size (in ²)	Lamp Brightness (ft-lm)	Supply Voltage (V)	Supply Current (mA)	Output Voltage (V _{p-p})	Output Frequency (Hz)
Pulse oximeters, cell phones, glucometers.	Green/ 2.0	5.3	3.0	11.8	172	197



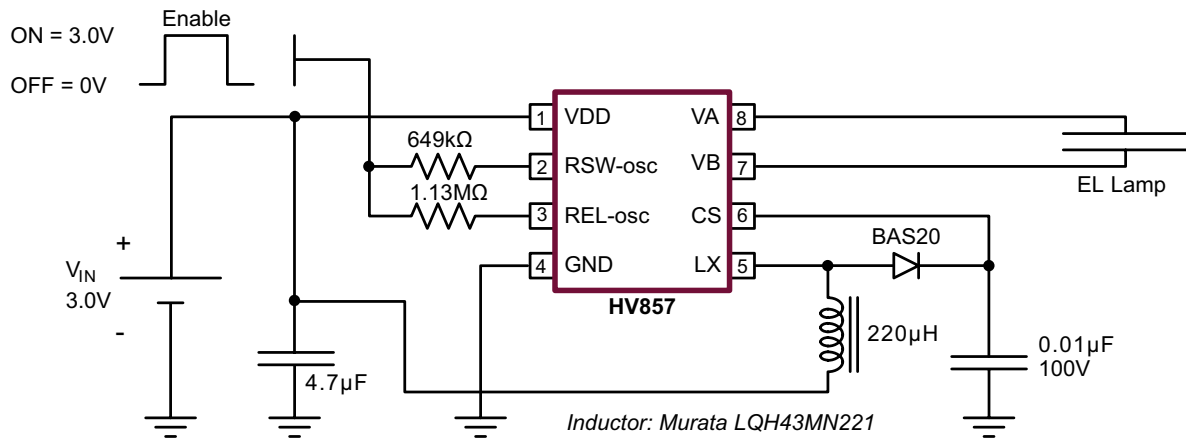
Circuit 5

Application	Lamp Color/ Size (in ²)	Lamp Brightness (ft-lm)	Supply Voltage (V)	Supply Current (mA)	Output Voltage (V _{p-p})	Output Frequency (Hz)
GPSs, cell phones, organizers, glucometers, BP monitors.	Green/ 3.0	5.9	3.0	20.9	172	260



Circuit 6

Application	Lamp Color/ Size (in ²)	Lamp Brightness (ft-lm)	Supply Voltage (V)	Supply Current (mA)	Output Voltage (V _{p-p})	Output Frequency (Hz)
PDA's, GPSs, cell phones, radios, clocks, organizers, glucometers, BP monitors.	Green/ 4.0	8.5	3.0	38.0	172	393



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