LX1691B

Enhanced Multi-Mode CCFL Controller

PRODUCTION DATA SHEET

DESCRIPTION

The LX1691B is an enhanced Direct Drive CCFL (Cold Cathode Fluorescent Lamp) Controller. Its architecture is based on the LX1691. The LX1691B is optimized for wide input voltage applications. It is similar to the LX1691 except it has a guaranteed minimum lamp strike interval of one second[1] to meet notebook and monitor panel manufacturer's specifications. The "B" version also adds feed forward input voltage sensing to enhance transient response when used in inverters that derive lamp power from unregulated input supplies and batteries.

The LX1691B can also be used with fixed input supplies where it produces performance equal to the LX1691.

LX1691B based inverter modules can be designed for virtually any CCFL appliance from digital cameras and PDA's to big screen monitors and driver viewable automotive displays.

New versatile dimming circuitry can accept digital and analog control inputs and provides six different dimming modes that control lamp current amplitude and duty cycle simultaneously or separately. Designers can select normal or reverse polarity dimming and precisely program minimum and maximum lamp currents with resistors. Fault protection includes open lamp voltage regulation and shutdown for over voltage and over current conditions. The LX1691B employs Microsemi's proven and patented strike method that allows significant efficiency gains while guaranteeing strong striking power at all operating temperatures. Our method sweeps strike frequency smoothly up to the unloaded resonant frequency of the lamp and high voltage transformer. This, coupled with the LX1691B's active high output voltage regulation, produces just enough strike voltage without generating unpredictable high voltage spikes that cause arcing and component failures. Competitive devices that simply switch to a higher frequency for striking do not have this "real time" control over output voltage, and require much more attention to transformer design.

IMPORTANT: For the most current data, consult *MICROSEMI*'s website: http://www.microsemi.com

Protected by U.S. Patents: 5,615,093; 5,923,129; 5,930,121; 6,198,234; Patents Pending

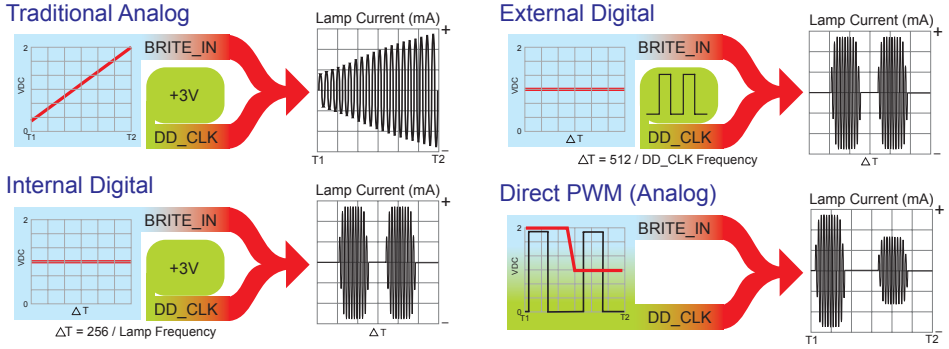
KEY FEATURES

- Wide Input Voltage Capable
- Simultaneous Amplitude And Duty Cycle Dimming Modes
- Resistor Programmable min and max Lamp Currents
- Digital Dimming Can Synch To External Or Internal Clocks
- 120 ms Power On Delay
- Open Or Shorted Lamp Regulation & Shutdown
- "On Chip" Full Wave Lamp Current Rectifier
- 16 Pin TSSOP Package
- Very Stable Oscillator with On-Chip Timing Capacitor
- Enhanced Digital Dimming Resolution

BENEFITS

- Low Component Count / Module Cost / And Size
- High "Nits/Watt" Efficiency
- Can Operate Directly From a Single Li-Ion Cell
- Industries Safest And Highest Performing Strike Voltage Generation (Patented)
- Tight Operating Frequency Tolerance For Easier System Level RFI Control

PRODUCT HIGHLIGHT



Four of Six Dimming Modes

PACKAGE ORDER INFO

T_A (°C)	MIN V_{DDP}	MAX V_{DDP}	PW Plastic TSSOP 16-PIN RoHS compliant / Pb-free
-40 to +85	2.8V	5.5V	**LX1691BIPW**

Note: Available in Tape & Reel. Append the letters "TR" to the part number. (i.e. LX1691BIPW-TR)

[1] If the lamp frequency is less than 115Khz.

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