LX1691

Enhanced Multi-Mode CCFL Controller

PRODUCTION DATA SHEET

DESCRIPTION

Microsemi's LX1691 is a cost reduced, enhanced feature set, Direct Drive CCFL (Cold Cathode Fluorescent Lamp) Controller. Its architecture is based on the very popular LX1689. By limiting V_{DDP} to 5.5V and using advanced processing, die size and package pin count is decreased while improving dimming precision.

LX1691 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 both lamp current amplitude and duty cycle, either simultaneously or separately. Designers can select normal or reverse polarity dimming and precisely program minimum and maximum lamp currents with resistors. The LX1691 fault shutdown feature is enhanced to include regulation and shutdown for over voltage and over current conditions.

Microsemi's proven and patented Direct Drive architecture works with system voltages from 3 volts to more than 50 volts, limited only by the external power FET's that drive the high voltage transformer.

The LX1691 includes the Microsemi 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 LX1691'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

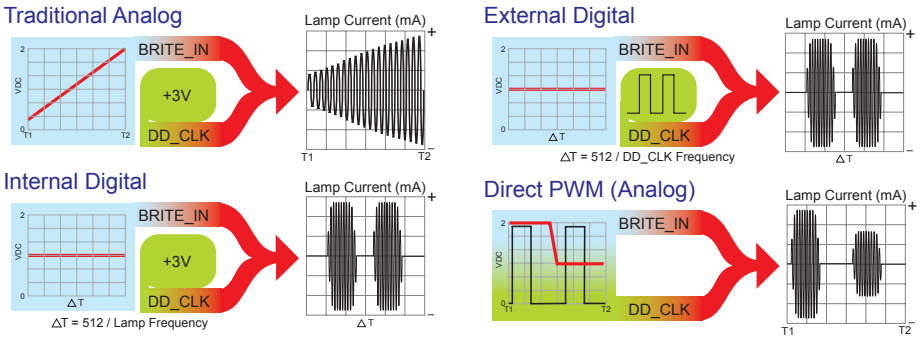
KEY FEATURES

- Simultaneous Amplitude And Duty Cycle Dimming Modes
- Resistor Programmable Min and Max Lamp Currents
- Digital Dimming Can Synch To External Or Internal Clocks
- 100 ms Power On Delay
- Open Or Shorted Lamp Regulation & Shutdown
- "On Chip" Full Wave Lamp Current & Voltage Rectifiers
- 16 Pin TSSOP Package
- Very Stable Oscillator with On-Chip Timing Capacitor
- Soft Start-Up Striking
- Enhanced Digital Dimming Resolution

BENEFITS

- Low Component Count / Module Cost / And Size
- High "Nits/Watt" Efficiency
- Operates 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	**LX1691IPW**

Note: Available in Tape & Reel. Append the letters "TR" to the part number. (i.e. LX1691IPW-TR)

Microsemi
Integrated Products
11861 Western Avenue, Garden Grove, CA. 92841, 714-898-8121, Fax: 714-893-2570

Microsemi

INFORMATION

Thank you for your interest in Microsemi® IPG products.

The full data sheet for this device contains proprietary information.

To obtain a copy, please contact your local Microsemi sales representative. The name of your local representative can be obtained at the following link
http://www.microsemi.com/contact/contactfind.asp

or

Contact us directly by sending an email to:
IPGdatasheets@microsemi.com
Be sure to specify the data sheet you are requesting and include your company name and contact information and or vcard.

We look forward to hearing from you.

Microsemi
Integrated Products Division
11861 Western Avenue, Garden Grove, CA. 92841, 714-898-8121, Fax: 714-893-2570