LX1696A

Full Bridge Resonant CCFL Controller

PRODUCTION DATA SHEET

DESCRIPTION

Microsemi's LX1696A is a full bridge resonant controller designed specifically for Automotive and high performance display applications. The Direct Drive CCFL (Cold Cathode Fluorescent Lamp) controller is optimized to provide the functions, efficiency, and safety features critical to vehicular applications while providing major advancements in overall component count and costs at the system level.

Resonant full bridge topology provides near sinusoidal waveforms over a wide supply voltage range in order to maximize the life of CCFL lamps, control EMI emissions, and maximize efficiency. This new architecture also provides a wide dimming range.

The LX1696A includes safety features that limit the transformer secondary voltage and protect against fault conditions which include open lamp, broken lamp, and short-circuit faults.

In addition to this protection the LX1696A provides integrated fault indicator and shutdown features necessary in automotive environments. Integration of these functions provides significant reductions in required external support components.

The LX1696A regulates the CCFL brightness in three ways: analog dimming, digital dimming, or combined analog and digital dimming methods simultaneously to achieve the widest dimming range as well as optimizing the display performance in temperature extremes.

The LX1696A can accept a brightness control signal that is either an analog voltage[1] or a direct low frequency PWM.

The LX1696A also features integrated gate drivers for the four external power MOSFETs.

An integrated 4V LDO powers all internal control circuitry greatly simplifying supply voltage requirements.

The LX1696A is available in a 20-Pin TSSOP in extended temperature range.

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

- For Wide Voltage Range Inverter Application (7V to 22V)
- Patent Resonant Lamp Strike for Unsurpassed Striking Power Combined with Best Efficiency
- Reduced Corona Stress To Transformers
- Wide Dimming Range
- Direct Low PWM Brightness Control Input Provides > 300:1 Capability
- DC Brightness Control Input Provides > 80:1 capability
- Programmable Burst Dimming Frequency
- Programmable Time Out Protection
- Fixed Operating Frequency
- Open Lamp Voltage Protection, Short Lamp Protection, Arc Protection[2]
- Compatible with Existing Transformers

BENEFITS

- Even Display Light Distribution
- Longer Lamp Life with Optimized Lamp Current Amplitude
- Reduced Operating Voltage Lowers Corona Discharge and Prolongs Module Life
- High "Nits / Watt" Efficiency Makes Less Heat and Brighter Displays

APPLICATIONS

- Automotive
- Industrial Application
- Avionics
- Marine

PACKAGE ORDER INFO

T_A (°C)	PW Plastic TSSOP 20-Pin RoHS Compliant / Pb-free
-40 to +85	LX1696AIPW

Note: Available in Tape & Reel. Append the letters "TR" to the part number. (i.e. LX1696AIPW-TR)

1 With Analog DC voltage, it will limit the dimming ratio.
2 Arc protection is provided if the arcing level is enough to be trigged

Copyright © 2004

Microsemi
Integrated Products Division
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.

www.Microsemi.COM

Copyright

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