Microsemi®

High Performance CCFL Controller

DESCRIPTION

Microsemi's LX6512A is a cost effective, high performance Direct Drive CCFL (Cold Cathode Fluorescent Lamp) controller. The integrated controller is optimized to drive CCFL's (Cold Cathode Fluorescent Lamps) using either resonant full bridge inverter topology or push-pull configuration.

Resonant full bridge topology provides soft switching performance that helps to achieve near sinusoidal waveforms over a wide input voltage range, maximize the life of CCFL lamps, lower switching noise and EMI emissions, and maximize the inverter operating efficiency. This architecture is also coupled with a quiet operation over wide dimming range.

For narrow range input applications the drive signal format of LX6512A allows the user to configure a push-pull circuit. Only a single pair of N-FET is needed to be driven by the signals from LX6512A directly and thus providing a simple, low cost inverter solution.

The LX6512A contains safety features that limit the transformer secondary voltage and protect against fault conditions including open lamp or broken lamp, over voltage, arcing, and short-circuit fault. In addition, a programmable strike time out allows the user to set suitable strike time for a successful lamp strike for different applications.

The controller also provides convenient means for lamp brightness control. With the programmable dimming frequency oscillator, it allows to use an analog DC input to perform a digital dimming at the programmed frequency. Alternatively, an external PWM signal can also be applied to the dimming control pin to achieve a direct digital dimming control.

An integrated 4V LDO (Low Dropout Regulator) supplies all the internal control circuit and up to 5mA to the external circuitry to minimize the external voltage supply requirement.

The LX6512A is available in a 16-Pin SOIC package.

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; 7,112,929; Patents Pending

KEY FEATURES

- Full Bridge or Direct Drive Push Pull Configurable
- Patented Striking Technology
- Low Stress to Transformers
- Wide Dimming Range
- Programmable Operating Dimming Frequency
- Programmable Time Out Protection
- Fixed Operating Frequency
- Open Lamp Voltage Protection, Short Lamp Protection, Over Voltage Protection
- Compatible with Existing Transformer Designs

APPLICATIONS

- Note Book LCD displays
- Transportable Computers
- Web Tablet LCD displays
- Digital Picture Frame
- Monitor / TV applications
- Portable DVD Player
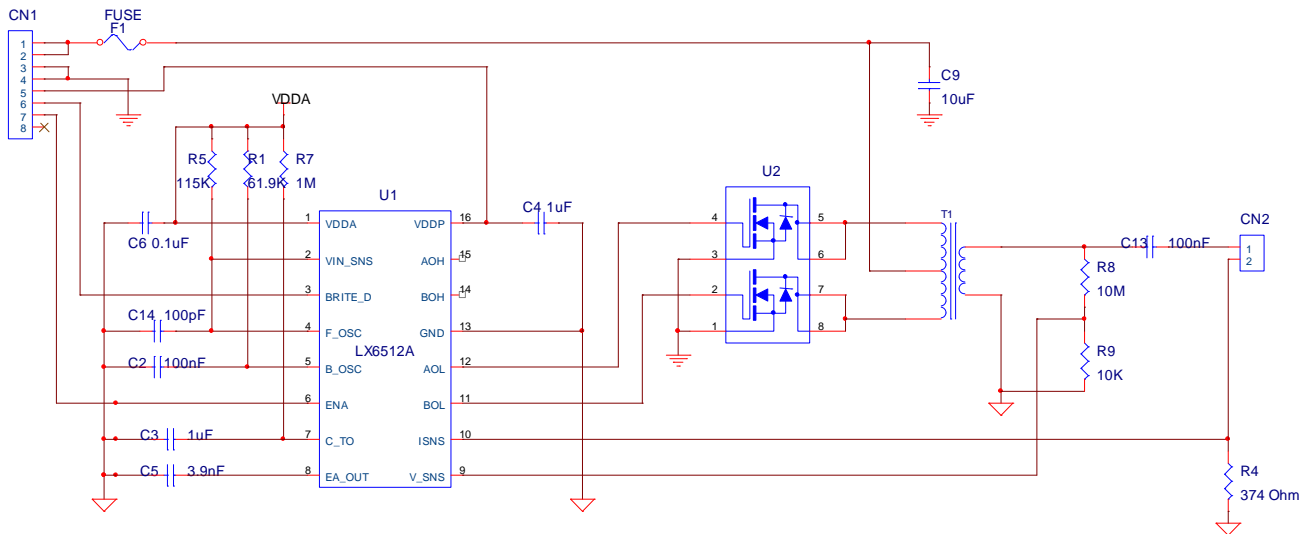
LOW COMPONENT COUNT REQUIREMENT FOR TOTAL SYSTEM SOLUTION

PACKAGE ORDER INFO		THERMAL DATA
T$_A$ (°C)	**D** **Plastic SOIC 16-pin**	**θ$_{JA}$ = 82.2 °C/W**
	RoHS Compliant / Pb-free	THERMAL RESISTANCE-JUNCTION TO AMBIENT
-20 to 85	**LX6512ACD**	Junction Temperature Calculation: $T_J = T_A + (P_D \times \theta_{JA})$.
Note: Available in Tape & Reel. Append the letters "TR" to the part number. (i.e. LX6512ACD-TR)		The θ$_{JA}$ numbers are guidelines for the thermal performance of the device/pc-board system. All of the above assume no ambient airflow.

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Page 1

PRODUCT BRIEF

ABSOLUTE MAXIMUM RATINGS

Supply Input Voltage (VDDP) ....-0.3V to 7V
Digital Inputs (ENABLE)...-0.3V to 5.5V
Analog Inputs (I_SNS, V_SNS) .... +/- 14V. Max peak current +/-100mA
Analog Inputs (BRITE_D, VIN_SNS, F_OSC, B_OSC) .... -0.3V to 5.5V
Analog Outputs (EA_OUT,C_TO) ....-0.3V to 5.5V
Analog Output (VDDA) ....-0.3V to 5.5V
Driver Outputs (AOL, AOH, BOL, BOH) ....-0.3V to 5.5V
Maximum Operating Junction Temperature ....150°C
Storage Temperature Range.. -65°C to 150°C
Lead Temperature (Soldering 10 seconds...300°C
Package Peak Temp. for Solder Reflow (40 seconds maximum exposure).....................260°C (+0 -5)

Notes: Exceeding these ratings could cause damage to the device. All voltages are with respect to Ground.
Currents are positive into, negative out of specified terminal.

PACKAGE PIN OUT

	MSC LX6512ACD xxxx	
VDDA		VDDP
VIN_SNS		AOH
BRITE_D		BOH
F_OSC		GND
B_OSC		AOL
ENABLE		BOL
C_TO		I_SNS
EA_OUT		V_SNS
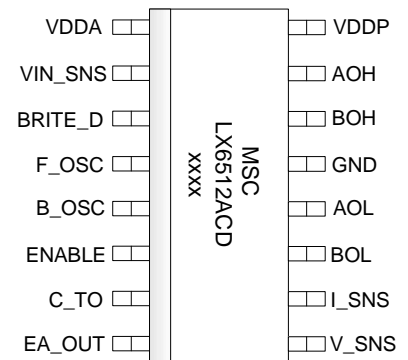
D PACKAGE
(Top View)

RoHS/Pb-free 100% matte Tin Finish
xxxx = date code / lot identifier

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Page 2