

ZLED7330

High Current 40V LED Driver with Switch Dimming

ZMDI[®]

The Analog Mixed Signal Company



Brief Description

The ZLED7x30 continuous-mode inductive step-down converter family is one of our ZLED LED-control ICs. It is designed for applications requiring high brightness and high current. The ZLED7x30 can efficiently drive a single LED or multiple series-connected LEDs from a voltage input higher than the LED forward voltage ($V_{in} = 8.5$ to 40VDC). It provides an adjustable output current (1.2A maximum), which is set via an external resistor and controlled by the ZLED7x30's integrated high-side output current-sensing circuit and high speed internal 40V power switch. Its low conducting impedance ensures high system efficiency.

The ZLED7x30 provides a switch dimming function. It detects external switch action to adjust output current, allowing dimming functionality to be achieved without changing the original lighting system circuitry.

The switch dimming is implemented in either two-level mode or three-level mode. The output current of every level and the total number of levels are customer selected by setting the corresponding input conditions of DIM1 and DIM2 pin.

The ZLED7x30 enables diverse industrial and consumer lighting applications requiring high driving currents, wide operating voltage range, high efficiency, and variable brightness control. It offers over-temperature and LED open-circuit protection. The ZLED7x30 can also minimize bill-of-material costs because very few external components are required for most applications. Only a resistor, a diode, an inductor, and three capacitors are needed for a typical basic application.

Features

- Switch dimming with multiple levels
- Three modes for output level settings
- Up to 1.0A output current
- Internal 40V power switch
- Wide DC input voltage range 8.5 to 40 VDC
- Output current accuracy: 5% (typical)
- LED open-circuit protection
- Thermal shutdown protection

Benefits

- High efficiency: up to 98%
- Very few external components needed for operation
- Adds switch dimming function to existing installation

Available Support

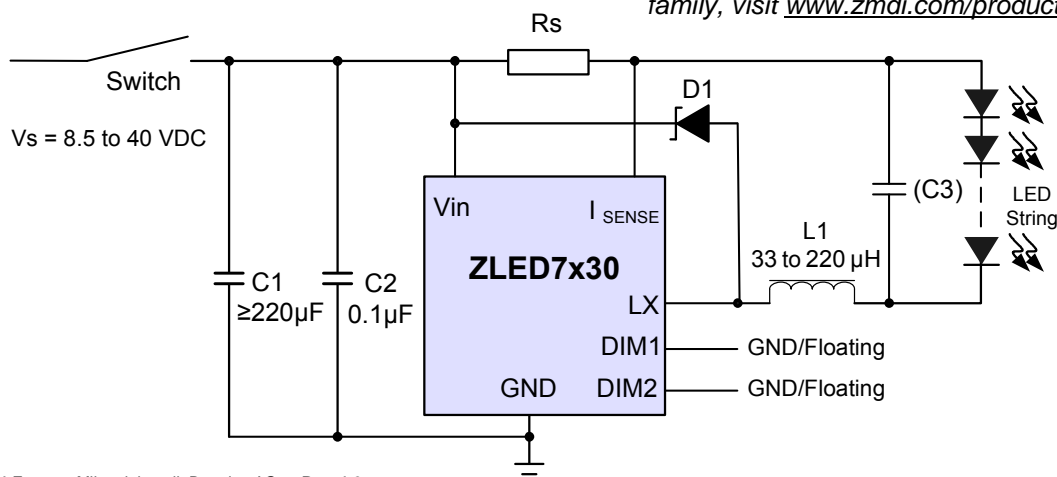
- Evaluation Kit

Physical Characteristics

- Operating temperature: -40°C to 105°C
- Switching frequency: up to 1MHz
- SOP-8 package

ZLED7x30 Family Selection Matrix		
Product	Max. Current Output	Package
ZLED7030	1.2A	SOP-8
ZLED7330	1.0A	SOP-8
ZLED7530	0.75A	SOP-8
ZLED7730	0.35A	SOP-8

ZLED7x30 Typical Application Circuit



For additional information on our ZLED driver family, visit www.zmdi.com/products/led-drivers/

ZLED7330

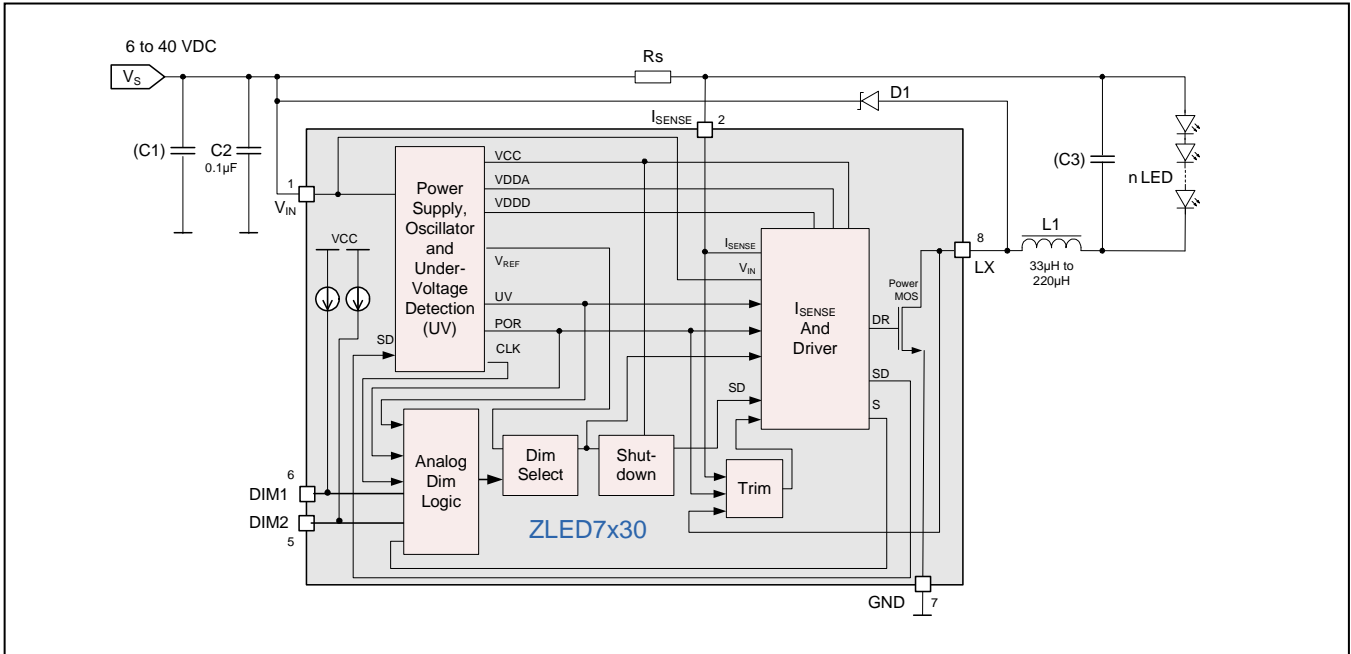
High Current 40V LED Driver with Switch Dimming



The Analog Mixed Signal Company



ZLED7x30 Block Diagram



Typical Applications

- ❖ Illuminated LED signs and other displays
- ❖ LED street and traffic lighting (low voltage)
- ❖ Architecture/building LED lighting
- ❖ LED backlighting
- ❖ Interior/exterior LED lighting
- ❖ MR16 LED spot lights
- ❖ Retrofit LED lighting fixtures
- ❖ General purpose industrial and consumer LED applications

Ordering Information

Product Sales Code	Description	Package
ZLED7030-ZI1R	ZLED7030 – High Current (1200mA) 40V LED Driver with Switch Dimming	SOP-8 (Tape & Reel)
ZLED7330-ZI1R	ZLED7330 – High Current (1000mA) 40V LED Driver with Switch Dimming	SOP-8 (Tape & Reel)
ZLED7530-ZI1R	ZLED7530 – High Current (750mA) 40V LED Driver with Switch Dimming	SOP-8 (Tape & Reel)
ZLED7730-ZI1R	ZLED7730 – High Current (350mA) 40V LED Driver with Switch Dimming	SOP-8 (Tape & Reel)
ZLED7030KIT-D1	ZLED7030-D1 Demo Board, 1 ZLED-PCB8 and 5 ZLED7030 ICs	Kit
ZLED-PCB8	Test PCB with one 5W white High Brightness (HB) LED, cascadable to one multiple LED string	Printed Circuit Board (PCB)

Sales and Further Information		www.zmdi.com	LED_Drivers@zmdi.com
Zentrum Mikroelektronik Dresden AG (ZMD AG) Grenzstrasse 28 01109 Dresden Germany Phone +49 (0)351.8822.7.533 Fax +49 (0)351.8822.8.7533	ZMD America, Inc. 8413 Excelsior Drive Suite 200 Madison, WI 53717 USA Phone +1 (608) 829-1987 Fax +1 (631) 549-2882	Zentrum Mikroelektronik Dresden AG, Japan Office 2nd Floor, Shinbashi Tokyu Bldg. 4-21-3, Shinbashi, Minato-ku Tokyo, 105-0004 Japan Phone +81.3.6895.7410 Fax +81.3.6895.7301	ZMD FAR EAST, Ltd. 3F, No. 51, Sec. 2, Keelung Road 11052 Taipei Taiwan Phone +886.2.2377.8189 Fax +886.2.2377.8199
<small>DISCLAIMER: This information applies to a product under development. Its characteristics and specifications are subject to change without notice. Zentrum Mikroelektronik Dresden AG (ZMD AG) assumes no obligation regarding future manufacture unless otherwise agreed to in writing. The information furnished hereby is believed to be true and accurate. However, under no circumstances shall ZMD AG be liable to any customer, licensee, or any other third party for any special, indirect, incidental, or consequential damages of any kind or nature whatsoever arising out of or in any way related to the furnishing, performance, or use of this technical data. ZMD AG hereby expressly disclaims any liability of ZMD AG to any customer, licensee or any other third party, and any such customer, licensee and any other third party hereby waives any liability of ZMD AG for any damages in connection with or arising out of the furnishing, performance or use of this technical data, whether based on contract, warranty, tort (including negligence), strict liability, or otherwise.</small>			