Brief Description

The ZLED7x20 continuous-mode inductive step-down converter family is part of our line of LED-control ICs. It is designed for applications requiring high brightness and high current. It can efficiently drive a single LED or multiple series-connected LEDs from a voltage input higher than the LED forward voltage: Vin = 6 to 40 VDC. It provides an adjustable output current ≤1.2A, which is set via an external resistor and controlled by the ZLED7x20's integrated high-side output current-sensing circuit and high speed internal 40V power switch. An external control signal, which can be a DC voltage, PWM, or microcontroller-generated waveform, on the ADJ pin can also be used to linearly adjust a continuous output current or to control a gated output current.

The output can be turned off by applying a voltage lower than 0.2V to the ADJ pin, which puts the ZLED7x20 in a low-current standby state.

The ZLED7x20 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 ZLED7x20 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

- Up to 1.2A output current
- Internal 40V power switch
- Wide DC input voltage range 6 to 40 VDC
- Output current accuracy: 3% (typical)
- Dimming ratio: 1200:1
- LED open-circuit protection
- Thermal shutdown protection

Benefits

- High efficiency: up to 98%
- Single pin on/off and brightness control using DC voltage or PWM
- Very few external components needed for operation
- Footprint compatible with our ZLED7000 depending on the application.

Available Support

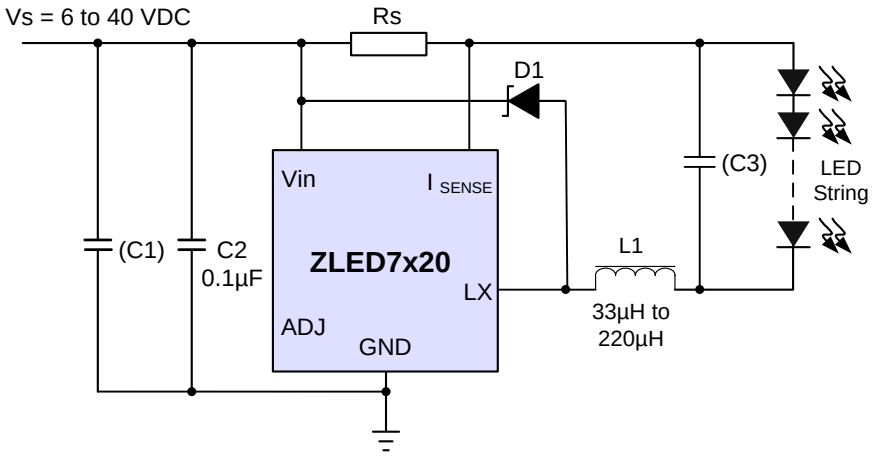
- Evaluation Kit

Physical Characteristics

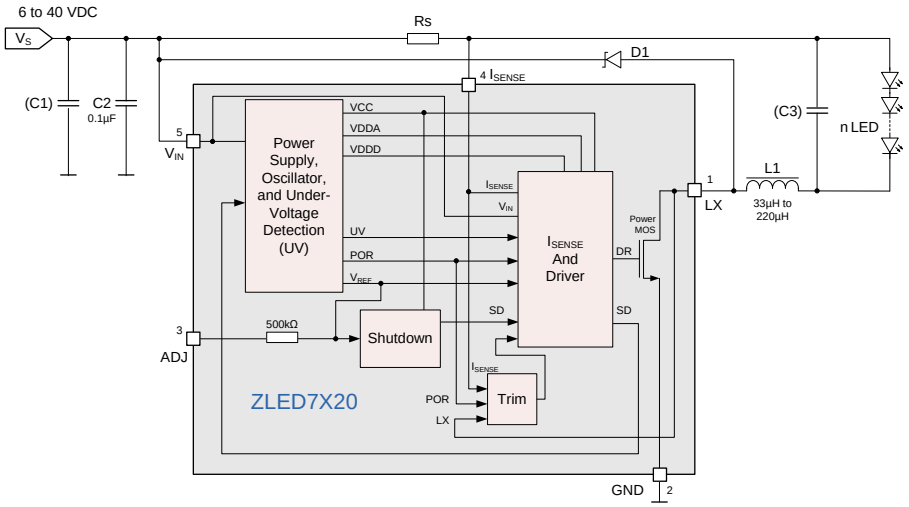
- Operating junction temperature: -40°C to 125°C
- Switching frequency: up to 1MHz

ZLED7x20 Family Selection Matrix		
Product	**Max. Current Output**	**Package**
ZLED7020	1.2A	SOT89-5
ZLED7320	1.0A	DFN-5
ZLED7520	0.75A	DFN-5
ZLED7720	0.35A	DFN-5

ZLED7x20 Typical Application Circuit



ZLED7x20 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 Code	Description	Package
ZLED7020ZI1R	ZLED7020 – High Current (1200mA) 40V LED Driver with Internal Switch	SOT89-5 (Tape & Reel)
ZLED7320ZI1R	ZLED7320 – High Current (1000mA) 40V LED Driver with Internal Switch	DFN-5 (Tape & Reel)
ZLED7520ZI1R	ZLED7520 – High Current (750mA) 40V LED Driver with Internal Switch	DFN-5 (Tape & Reel)
ZLED7720ZI1R	ZLED7720 – High Current (350mA) 40V LED Driver with Internal Switch	DFN-5 (Tape & Reel)
ZLED7020KIT-D1	ZLED7020-D1 Demo Board, 1 ZLED-PCB8 and 5 ZLED7020 ICs	Kit
ZLED-PCB8	Test PCB with a 5W white high brightness (HB) LED, cascadable to a multiple LED string	Printed Circuit Board (PCB)

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(Disclaimer Rev.1.01 Jan 2024)

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