

ZLED7000

40V LED Driver with Internal Switch



Brief Description

The ZLED7000, one of our ZLED Family of LED control ICs, is an inductive step-down converter that is optimal for driving a single LED or multiple LEDs (connected in series) from a voltage source greater than the voltage rating of the LED. The ZLED7000 operates in continuous mode. Capable of operating efficiently with voltage supplies ranging from 6 VDC to 40 VDC, it is ideal for low-voltage lighting applications. The ZLED7000 minimizes current consumption by remaining in a low-current standby mode (output is off) until a voltage of $\geq 0.3V$ is applied to the ADJ pin.

In operating mode, the ZLED7000 can source LEDs with an output current of $\leq 750mA$ (≤ 30 watts of output power) that is externally adjustable.* The ZLED7000's integrated output switch and high-side current sensing circuit use an external resistor to adjust the average output current. Linearity is achieved via an external control signal at the ZLED7000's ADJ pin, implemented either as a pulse-width modulation (PWM) waveform for a gated output current or a DC voltage for a continuous current.

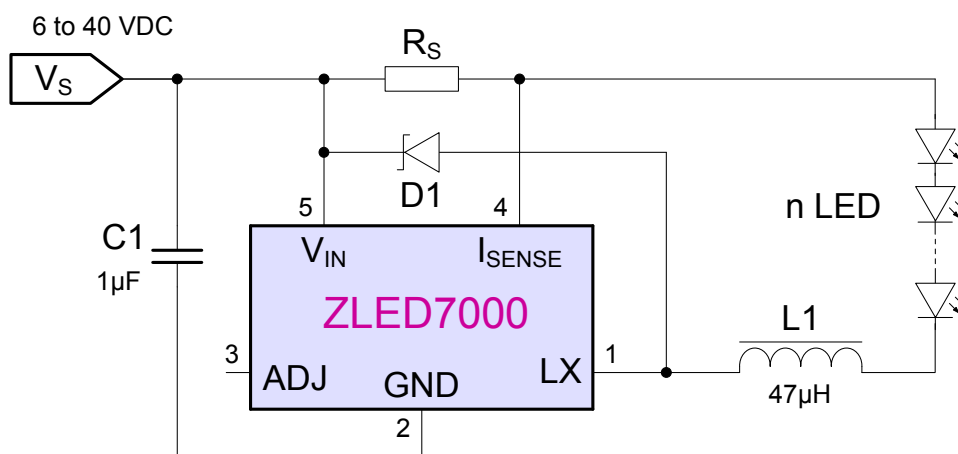
Features

- Capable of up to 95% efficiency*
- Operates in continuous mode with a wide input range from 6 VDC to 40 VDC
- Integrated 40V power switch
- One pin on/off or brightness control via PWM or DC voltage control signal input
- Switching frequency: $\leq 1MHz$
- Dimming rate: 1200:1 (typical)
- Output current accuracy: 5% (typical)
- Built-in thermal shutdown and open-circuit protection for LED
- Very few external components needed for operation
- Broad range of applications: outputs up to $\leq 750mA$
- SOT89-5 package

Application Examples

- Illuminated LED signs and other displays
- LED traffic and street lighting (low-voltage)
- Architectural LED lighting, including low-voltage applications for buildings
- Halogen replacement LEDs (low-voltage)
- LED backlighting
- General purpose exterior and interior LED lighting, including applications requiring low-voltage
- General purpose low-voltage industrial applications

ZLED7000 Application Circuit



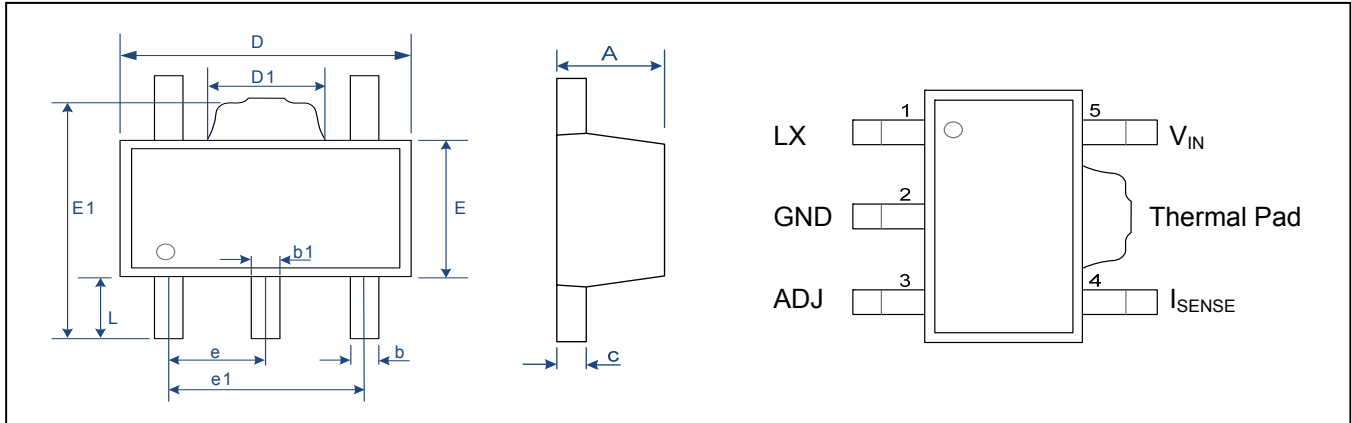
* See section 2.3 in the data-sheet for details

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SOT89-5 Package Dimensions and Pin Assignments



Symbol	Dimension (mm)		Symbol	Dimension (mm)	
	Min	Max		Min	Max
A	1.400	1.600	E	2.300	2.600
b	0.320	0.520	E1	3.940	4.250
b1	0.360	0.560	e	1.500 Typ	
c	0.350	0.440	e1	2.900	3.100
D	4.400	4.600	L	0.900	1.100
D1	1.400	1.800			

Ordering Information

Product Sales Code	Description	Package
ZLED7000-Z11R	ZLED7000 – 40V LED Driver	SOT89-5 (Tape & Reel)
ZLED7000KIT-D1	ZLED7000 used in a MR16 Halogen replacement Demo Kit 12VAC/VDC, including 1 ZLED-PCB1	Kit
ZLED-PCB1	Test PCB with one 3W white High Brightness (HB) LED, cascable to one multiple LED string	Printed Circuit Board (PCB)
ZLED-PCB2	10 unpopulated test PCBs for modular LED string with footprints of 9 common HB LED types	Printed Circuit Board (PCB)

Sales and Further Information

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