



## Simple solution 40V, 1.5A Buck LED Driver

The AL8861 is a 1.5A hysteretic mode DC-DC Buck LED driver, and operates from input supplies between 4.5V and 40V. Depending on input voltage and external components, the AL8861 will provide up to 40W output power.

The AL8861 integrates a low  $R_{DS(ON)}$  power switch and a high-side LED/inductor current sensing circuit, which uses an external resistor to set the nominal average LED current.

For increased robustness the AL8861's Power switch incorporates short-circuit current protection.

Dimming can be realized by applying an external control signal to the VSET pin. The VSET pin accepts either a DC voltage signal or a PWM signal.

The AL8861 is available in TSOT25, MSOP-8EP and SOT89-5 packages.



### The Diodes Advantage

#### Simple and low BOM cost 40V LED Driver

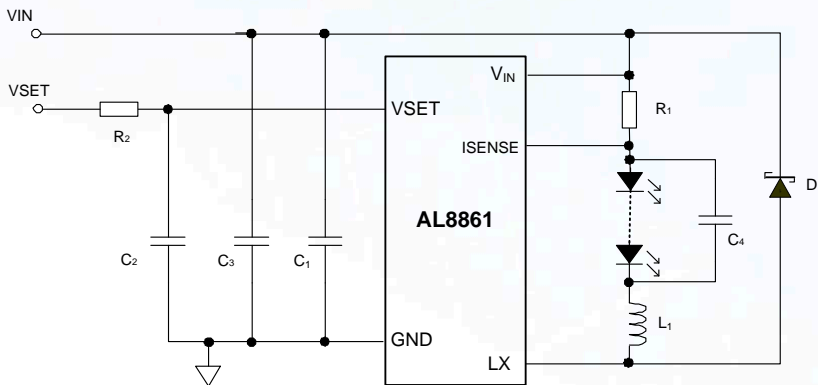
- **Integrated 40V/0.2Ω power MOSFET supports LED currents up to 1.5A**  
Needs only 4 external components and provides higher efficiency while driving 0.5W, 1W, 3W and multi-die LEDs
- **Input voltage range from 4.5V to 40V**  
Operates from "5V<sub>DC</sub>", "12V<sub>AC/DC</sub>" and "24V<sub>AC/DC</sub>" standard voltage rails supporting a wide range of applications
- **Multi-function VSET pin supports Analog and PWM dimming**  
Maximises the versatility of dimming
- **Analog Dimming range from 0% to 100%**  
Deep dimming range without flicker
- **Built-in protection against LED short/Open, thermal overload (OTP) and Power-switch-short conditions**  
Provides reliable system performance



# New Product Announcement

## AL8861

### Typical Application Circuit



Part Number	Min. Max.		Max LED Current A	Switching Frequency MHz	Efficiency %	Dimming		Ambient Temperature Range °C	Isense Current Threshold Voltage mV	Isense Current Accuracy %	Isense Current Threshold Hysteresis %	R <sub>DS(ON)</sub> Ω	Quiescent Current mA	Protection				Package
	Input Voltage V					PWM	Analog							OTP	Open Load	Shorted Load	Switch shorted	
	V	V																
AL8861	4.5	40	1 1.5 1.5	1	97	Y	Y	-40~ +105	100	±5	±13	0.2	0.55	Y	Y	Y	Y	TSOT25 SOT89-5 MSOP-8EP
AL8860	4.5	40	1 1.5	1	97	Y	Y	-40~ +105	100	±5	±20	0.2	0.55	Y	Y	Y	N	TSOT25 MSOP-8EP
AL8805	6	36	1	1	98	Y	Y	-40~ +125	100	±5	±20	0.25	0.35	N	Y	Y	N	SOT25
AL8806	6	36	1.5	1	98	Y	Y	-40~ +125	100	±5	±20	0.18	0.35	N	Y	Y	N	MSOP-8EP
AL8808	6	30	1	1	96	Y	Y	-40~ +125	100	±5	±20	0.35	0.35	Y	Y	Y	N	TSOT25

For complete family see <https://www.diodes.com/products/power-management/led-drivers/medium-voltage-dc-dc-led-drivers/>

### Ordering Information

Part Number	Package Code	Package	7" Tape and Reel	
			Quantity	Part Number Suffix
AL8861WT-7	WT	TSOT25	3,000/Tape & Reel	-7
AL8861Y-13	Y	SOT89-5	2,500/Tape & Reel	-13
AL8861MP-13	MP	MSOP-8EP	2,500/Tape & Reel	-13