



# New Product Announcement

## AL1665

### Universal High Power Factor Dimmable LED Driver Controller for Industrial and Commercial Lighting

The AL1665 is a universal high-current precision, single stage flyback and buck-boost controller. It uses the primary side regulation (PSR) control method, which can provide accurate constant current (CC) regulation without optocoupler and secondary control circuitry.

It operates at BCM mode and keeps beneficial EMI and efficiency. It also keeps high PF and low THD over wide-input voltage.

The AL1665 supports both 0V to 10V analog dimming applications and direct PWM dimming as well as 0V to 2.5V analog dimming modes.

The AL1665 features low start-up current and low operation current. AL1665 integrates a full protection function and makes the LED driver more reliable. It is available in SO-8 package.



#### The Diodes Advantage

**The AL1665 is a universal, commercial dimmable LED controller.**

- **Universal Wide-Input Voltage**

Covers 85V<sub>AC</sub> to 305V<sub>AC</sub>

- **Supports Analog and PWM Dimming**

0V to 10V analog dimming applications work with all ANSI dimmers. Supports 0.5% to 100% direct PWM dimming resolution and 0V to 2.5V analog dimming.

- **Cost Effective with Fewer System-Level Components**

Adopts primary-side regulation without optocoupler

- **High Power Factor and Low Total Harmonic Distortion**

PF > 0.9 and THD < 20%

- **Tight LED Current Variation Range Across 85V<sub>AC</sub> to 305V<sub>AC</sub>**

LED current line regulation: < ±2% typical

LED current load regulation: < ±2% typical full load to half load

- **High Output Current Accuracy**

Factory tested and trimmed to achieve < 2% current accuracy for each unit

#### Applications

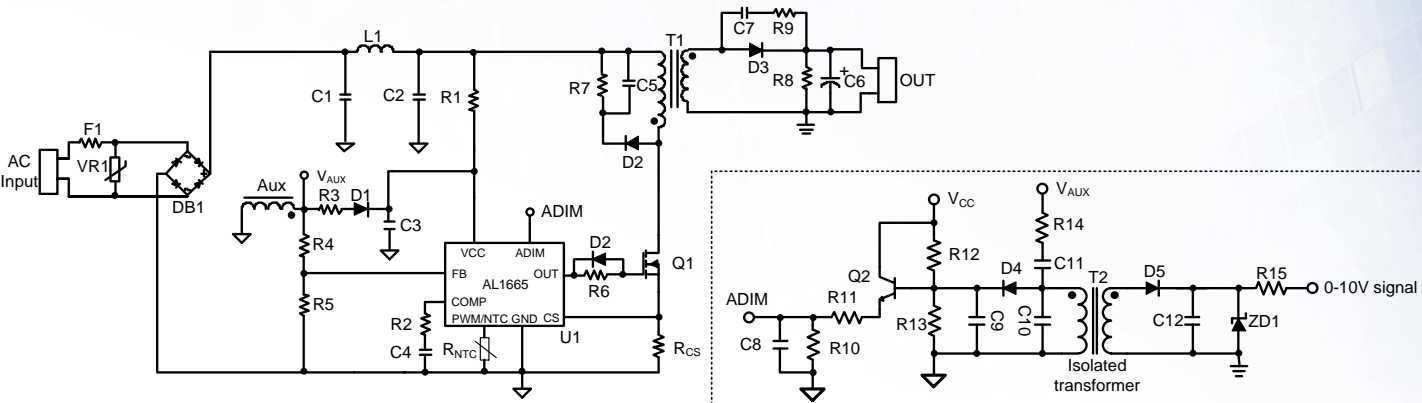
- Commercial LED Lighting
- Middle-Power LED Drivers
- LED Lighting Luminaires



# New Product Announcement

## AL1665

### Typical Application



The above circuit can be used for 0V-10V to 0.05V-2.5V analog dimming applications.

### Diodes Offline LED Drivers

Part Number	Min. Input Voltage	Max Input Voltage	Accuracy CS	Efficiency	Operating Temp Range	High Power Factor	Analog Dimming	PWM Dimmable	Topology	Package Outline	Comments
	V <sub>AC</sub>	V <sub>AC</sub>									
AL1663S-13	85	305	3	85	-40 ~ +105	0.9	0.3-2.4V	Y	Flyback/Buck-boost	SO-8	Controller
AL1663RS-13	85	305	3	85	-40 ~ +105	0.9	0.3-2.4V	Y	Flyback/Buck-boost	SO-8	Controller
AL1665S-13	85	305	1.5	>85	-40 ~ +105	> 0.9	0.05-2.5V	Y	Flyback/Buck-boost	SO-8	Controller

### Ordering Information

Part Number	Package Code	Package	Tape and Reel	
			Quantity	Part Number Suffix
AL1665S-13	S	SO-8	4,000/Tape & Reel	-13

To find out more information: <https://www.diodes.com/part/AL1665>