



New Product Announcement

AL1666

Universal AC Line Dimmable LED Driver-Controller Supports 0 to 10V Dimming down to 1%

The AL1666 is a universal high-current precision, single stage Fly-back and Buck-boost controller. It uses primary side regulation (PSR) control method which can provide accurate constant current (CC) regulation without opto-coupler and secondary control circuitry.

The AL1666 operates at BCM mode and provides good EMI, efficiency, and high PF with low THD over wide input voltage range.

It supports 0V to 10V analog dimming applications and PWM to DC dimming mode with the dimming range 1%~100%.

The AL1666 features a tight current sense (CS) reference voltage accuracy of $0.4V \pm 1.5\%$ and integrates rich protection functionality that makes the LED driver more reliable.

It is available in SO8 package.



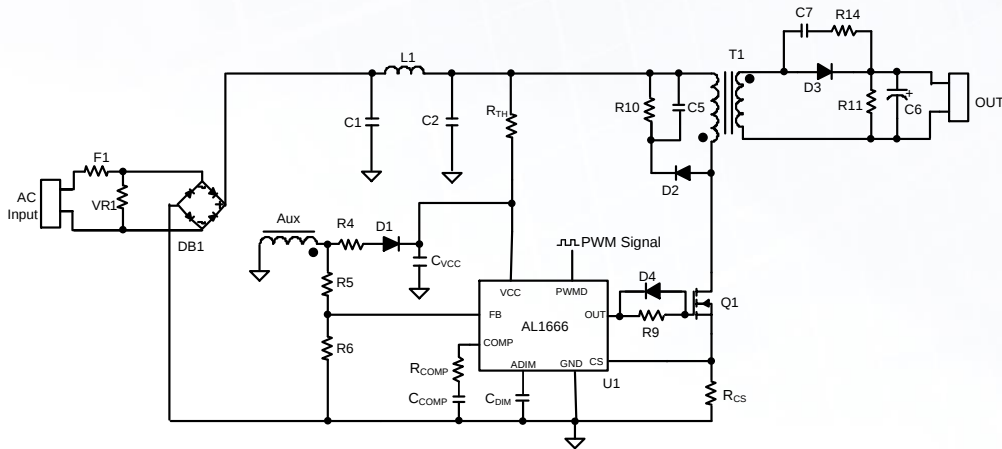
The DIODES Advantage

- **Universal wide input voltage**
Covers $85V_{AC}$ to $305V_{AC}$
- **Supports Analog and PWM to DC dimming**
0V to 10V Analog Dimming applications, works with all ANSI dimmers. Analog and PWM to DC dimming range is 1%~100%.
- **Cost effective and fewer system level components**
Adopts primary side regulation without Opto-coupler
- **High power factor (>0.9) and low total harmonic distortion (<20%)**
Meets modern system requirements
- **Tight LED current variation range across $85V_{AC}$ to $305V_{AC}$**
LED current line regulation: $< \pm 2\%$ typical
LED current load regulation: $< \pm 2\%$ typical full load to half load
- **High output current accuracy**
Factory tested and trimmed to achieve 1.5% current feedback voltage accuracy for each unit

Applications

- LED driver up to 100W
- Dimmable LED lighting luminaires
- Commercial LED lighting fixtures
- Industrial LED lighting
- Mid-power LED drivers

Typical Application



Diodes Off-line LED Driver-Controllers

Part Number	Min. Input Voltage	Max Input Voltage	CS Accuracy	Efficiency	Operating temp range	High Power Factor	Analog Dimming	PWM to DC Dimming	Analog Dimming Range	PWM On/Off Dimming	Topology	Package Outline	Comments
	V _{AC}	V _{AC}	%	%	°C								
AL1665S-13	85	305	±1.5	>85	-40 ~ +105	> 0.9	0.05-2.5V	N	5%~100%	Y	Fly-back/Buck-boost	SO-8	Controller
AL1666S-13	85	305	±1.5	>85	-40 ~ +105	> 0.9	0-2.5V	Y	1%~100%	N	Fly-back/Buck-boost	SO-8	Controller

Ordering Information

Part Number	Package Code	Package	Tape and Reel	
			Quantity	Part Number Suffix
AL1666S-13	S	SO8	4000/Tape & Reel	-13

To find out more information:

<https://www.diodes.com/part/AL1666>