

High-Performance Single Stage Dimmable LED Controller

The AL1663 is a high-performance single stage Flyback and Buck-Boost controller ideally suited for dimmable LED lighting. It uses primary side regulation (PSR) which provides an accurate constant LED current (CC) without opto-coupler from secondary control circuitry. It operates in BCM mode which provides good EMI, high conversion efficiency, high PF and low total harmonic distortion (THD) over the universal input voltage.

The AL1663 supports multiple dimming modes both for PWM to DC and analog dimming modes.

The AL1663 features low start-up current with low operating and standby power. It integrates multiple protection functions including overvoltage, short-circuit, overcurrent and overtemperature protection.

The AL1663S and AL1663RS are available in SO-8 package.



The Diodes Advantage

High PF Dimmable Solutions Providing Accurate Output Current and Wide Protection Features

- **High Power Factor**
Power factor above 0.9 for universal mains input
- **Boundary Mode Control (Valley Switching)**
Low switching losses providing high efficiency
- **Closed-Loop Compensation with External Comp Pin**
Achieves accurate constant output current across a wide range of load and line voltages
- **Supports Multiple Dimming Modes**
PWM to DC, Analog and Digital PWM dimming
- **Primary Side Regulation (PSR)**
Reduced number of external components without Opto-coupler

Applications

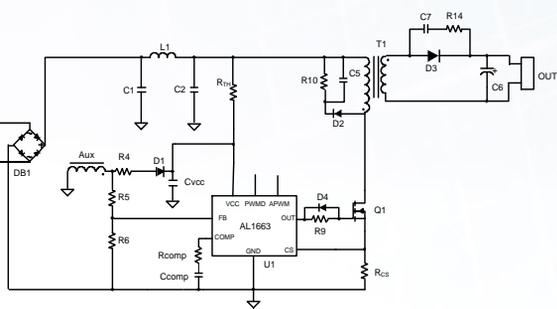
- General LED Lighting Driver with Dimming Function
- General Purpose Constant Current Source
- LED Backlighting Driver
- Smart LED Lighting



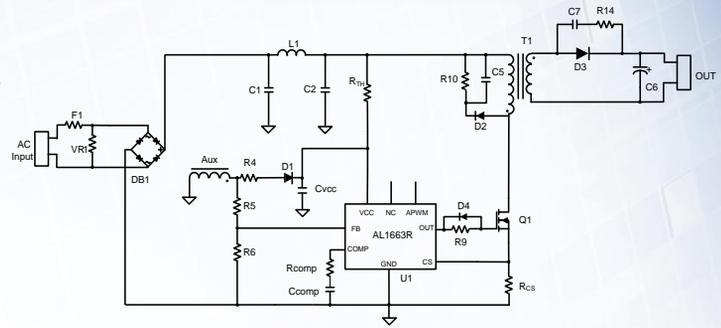
New Product Announcement

AL1663

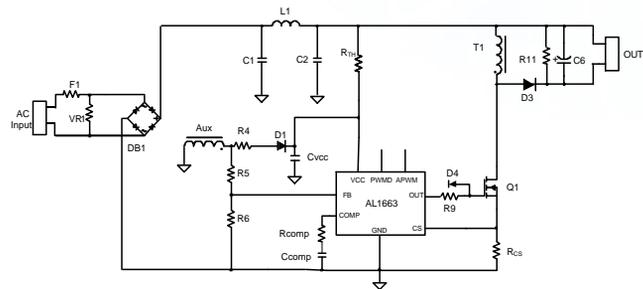
Typical Application Schematic



AL1663 Flyback Schematic



AL1663R Flyback Schematic



AL1663 Buck-Boost Schematic

Diodes High PF, Dimmable LED Controller

Part Number	Min. Input Voltage	Max. Input Voltage	Max Gate Output Current	MAX OUTPUT LED Current	Reference Voltage Accuracy	Switching frequency	Efficiency	Dimming	Supply Current	Ambient Temperature Range	Package Outlines
	V	V	mA	mA	+/- %	kHz	%		mA	°C	
AL1663	7.8	30	-	ext. MOS	3	Up to 150kHz	85	PWM / Analog / PWM to DC	1	-40~ +105	SO-8
AL1663R	7.8	30	-	ext. MOS	3	Up to 150kHz	85	PWM / Analog	1	-40~ +105	SO-8

Family page: http://www.diodes.com/catalog/Off-Line_LED_Drivers_121

Ordering Information

Part Number	Package Code	Package	13" Tape and Reel	
			Quantity	Part Number Suffix
AL1663S-13	S	SO-8	4,000/Tape & Reel	-13
AL1663RS-13	S	SO-8	4,000/Tape & Reel	-13