

Triac-Dimmable LED Drivers from Diodes Incorporated Deliver Good Dimmer Compatibility for 230/120VAC Lamps

The AL1697 is a high performance, high power factor, high efficiency and high precision buck-boost LED driver for mains dimmable LED lamp applications.

The topology provides an accurate output current over wide line and load regulation. The wide switching frequency operates at boundary conduction mode (BCM) to ease EMI/EMC design.

The AL1697 with built in MOSFET solution reduces the bill of material (BOM) cost by eliminating the need of auxiliary winding and an external high voltage MOSFET.

In addition to standard internal protection features, such as output short circuit, overtemperature, undervoltage lockout, leading-edge blanking and cycle-by-cycle overcurrent protection, the AL1697 also features overvoltage/output-open and thermal foldback protection for enhanced safety and reliability.



The Diodes Advantage

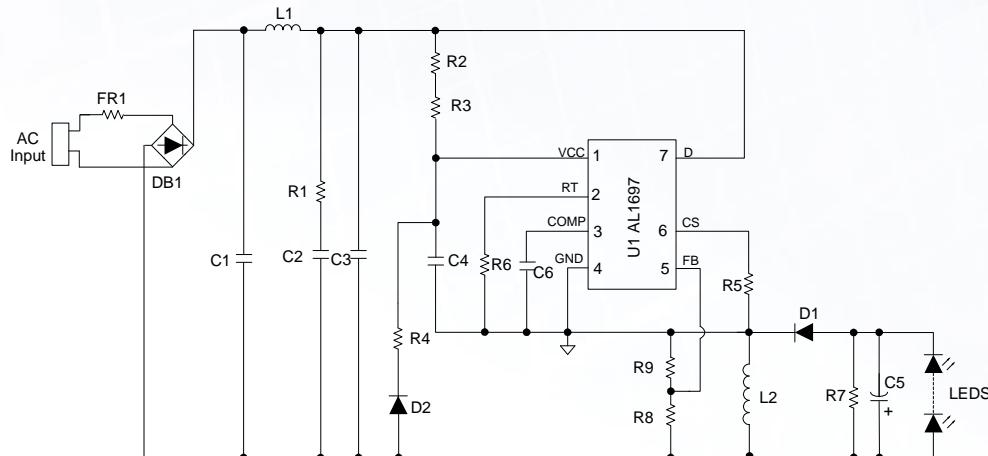
The AL1697 provides a simple, cost effective solution for general illumination LED lamps.

- **Eliminates the need for an auxiliary winding**
Single winding inductor for Buck-Boost solutions, lowers BOM cost and enables smaller PCB
- **Single stage high PF triac dimming solution through ton_max control by RT Pin**
Good dimmer compatibility with leading edge and trailing edge Triac dimmer, and wide dimming range.
- **Supports isolated (Flyback) and non-isolated (Buck-boost) solutions**
One device can meet the different isolation/cost needs of different lamps
- **Boundary Conduction Mode (BCM) Operation**
Achieved higher convert efficiency and reduced EMI issues with fewer components
- **Integration MOSFET**
Supports <15W LED lamps with Low BOM cost and small PCB size

Applications

- Mains dimmable LED lamps: GU10 light bulb

Typical Application: LED Retrofit Lamp



Diodes Dimmable Off-line LED Drivers

Part Number	Max. Output Voltage	Max. LED Current	Current Accuracy	Efficiency	Operating Temperature Range	High Power Factor	Triac Dimmable	Topology	Package Outline	Comments
	V	A	%	%	°C					
AL1696-30A	50V	240mA	3	85	-40 ~ 105	Y	Y	Buck, Buck-Boost	SO-7	120V AC dimmer With 300V/3A MOS For <10W lamps
AL1696-20B	100V(Buck-Boost) 80V (Buck)	150mA	3	85	-40 ~ 105	Y	Y	Buck, Buck-Boost	SO-7	With 500V/2A MOS For <10W lamps
AL1696-20C	130V(Buck-Boost) 80V (Buck)	150mA	3	85	-40 ~ 105	Y	Y	Buck, Buck-Boost	SO-7	With 600V/2A MOS For <10W lamps
AL1697-20C	130V	200mA	3	85	-40 ~ 105	Y	Y	Buck-Boost Flyback	SO-7	With 600V/2A MOS For <10W lamps
AL1697-40D	150V	300mA	3	85	-40 ~ 105	Y	Y	Buck-Boost Flyback	SO-7	With 650V/4A MOS For <15W lamps

Ordering Information

Part Number	Package Code	Package	Tape and Reel	
			Quantity	Part Number Suffix
AL1697-20CS7-13	S7	SO-7	4,000/Tape & Reel	-13
AL1697-40DS7-13	S7	SO-7	4,000/Tape & Reel	-13