



New Product Announcement

AL1692 Update

Triac Dimmable LED Controller and Driver for Wide Output Voltage Range Applications

The AL1692 is a high-performance, high-efficiency buck-boost LED driver for mains dimmable high power factor LED lamp applications.

The AL1692 is available as a controller and also with internal MOSFET versions driving LED lamps from 3W-20W and can drive long LED chains such as filament lamps.

All AL1692 variants offer a wide range of device and system protection features for enhanced safety and reliability:

- Output short-circuit
- Over-temperature
- Undervoltage lockout
- Leading-edge blanking
- Cycle-by-cycle over-current protection
- Overvoltage/output-open
- Thermal fold-back protection

The AL1692 reduces the bill of material (BOM) cost by eliminating the need of auxiliary winding. The controller version is available in SO-8 and the internal MOSFET variants are available in SO-7.



The Diodes Advantage

The AL1692 provides a simple cost-effective solution for high power factor triac dimmable general illumination LED lamps.

- **Isolated (Flyback) and non-isolated (Buck-boost) solutions**
One device meets the different isolation/cost needs of different lamps
- **Single winding inductor for Buck-Boost solutions**
Eliminates the need for an auxiliary winding which lowers BOM cost and enables smaller PCB
- **Single-stage triac dimmable solution through t_{ONPMAX} control**
Good dimmer compatibility for leading edge and trailing edge
Triac dimmers with wide dimming range.
- **Boundary Conduction Mode (BCM) Operation**
Provides higher conversion efficiency with reduced EMI issues and reduced component count.
- **LED Driver Controller**
Supports 3~20W LED lamps with Low BOM cost and small PCB size

Applications

- Mains Dimmable LED Lamps:
 - 230V: GU10/PAR lamps, Class-A/B/P lamps, filament lamps
 - 120V: Class-A lamps, PAR3x lamps, DL

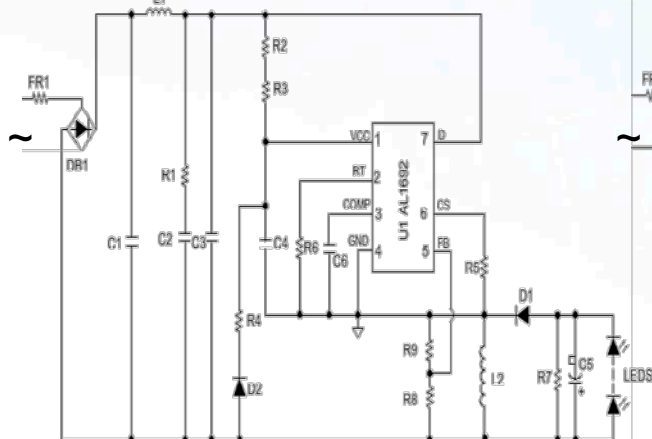


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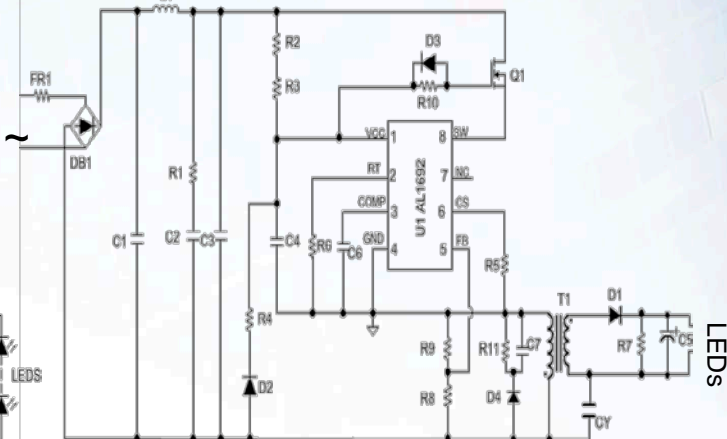
AL1692 Update

Typical Application: Triac Dimmable LED Retrofit Lamp

Non-isolated Buck-boost with Internal Switch



Isolated Flyback with External Switch



Diodes Triac Dimmable Off-line LED Drivers

Part Number	Supported Topologies			Max V _{OUT} V	Max. LED Current A	Max P _{OUT} W	Current Accuracy %	Efficiency %	Operating Temp. Range °C	High Power Factor	Triac Dimmable	Package Outline	Comments
	Buck	Buck-boost	Fly-back										
AL1692S-13		Y		Ext MOS	20	3	85	-40 ~ 105	Y	Y	SO-8	Controller	
AL1692-30BA		Y	Y	90	0.3	10	3	85	-40 ~ 105	Y	Y	SO-7	With 400V/3A MOS
AL1692-30B		Y	Y	120	0.3	10	3	85	-40 ~ 105	Y	Y	SO-7	With 500V/3A MOS
AL1692-20C		Y	Y	150	0.2	10	3	85	-40 ~ 105	Y	Y	SO-7	With 600V/2A MOS
AL1692-10E		Y	Y	250	0.1	10	3	85	-40 ~ 105	Y	Y	SO-7	With 700V/1A MOS
AL1697-30BA		Y		80	0.3	10	3	85	-40 ~ 105	Y	Y	SO-7	With 400V/3A MOS
AL1697-20C		Y		80	0.2	10	3	85	-40 ~ 105	Y	Y	SO-7	With 600V/2A MOS
AL1697-40D	Y	Y		150	0.25	15	3	85	-40 ~ 105	Y	Y	SO-7	With 650V/4A MOS

AL1692 Product Table: <https://www.diodes.com/products/power-management/led-drivers/off-line-led-drivers/part/AL1692>
 Datasheet: <https://www.diodes.com/assets/Datasheets/AL1692-30B.pdf>
<https://www.diodes.com/assets/Datasheets/AL1692-10E.pdf>
<https://www.diodes.com/assets/Datasheets/AL1692.pdf>

Ordering Information

Part Number	Internal MOSFET		Package		Tape and Reel	
	Code	Rating	Code	Type	Quantity	Part Number Suffix
AL1692S-13	Controller		S8	SO-8	4,000/Tape & Reel	-13
AL1692-10ES7-13	10D	1A/700V	S7	SO-7	4,000/Tape & Reel	-13
AL1692-20CS7-13	20C	2A/600V	S7	SO-7	4,000/Tape & Reel	-13
AL1692-30BS7-13	30B	3A/500V	S7	SO-7	4,000/Tape & Reel	-13
AL1692-30BAS7-13	30BA	3A/400V	S7	SO-7	4,000/Tape & Reel	-13