



# New Product Announcement

## AL1698K

### High Power-Factor, Boost LED Driver Delivers 95% Efficiency with Fast Start-Up in Offline Interior LED Lamps

The DIODES AL1698K is a high-efficiency and high power-factor off-line LED driver. It supports boost, buck-boost, and flyback topologies and also triac dimmable LED lamps compliant with the NEMA SSL6 standard.

The AL1698K's high-precision current sense provides an accurate output current across wide line and load variation. In boost topology it achieves up to 95% efficiency enabling it to meet the latest lighting regulatory high-efficiency requirements. Operating in boundary conduction mode (BCM), its wide switching frequency eases EMI/EMC design and testing.

The AL1698K LED driver integrates a 600V/2A high-voltage MOSFET, enabling it to cover both 120V<sub>AC</sub> and 230V<sub>AC</sub> mains-driven LED lighting applications without an external high-voltage MOSFET. A built-in high-voltage JFET enables a fast system start-up and a stable V<sub>CC</sub> supply design.

Its built-in thermal foldback protection automatically reduces output current, thereby reducing potential temperature flickering.

The AL1698K works with a wide range of leading-edge and trailing-edge dimmers, and achieves deep dimming down to 1%.

It is available in the SO-7 package.



#### The DIODES Advantage

**The AL1698K provides a high-efficiency, high power-factor solution that meets the latest requirements of LED lamps.**

- **High-Efficiency Boost Topology up to 95%**  
Meets latest lamp efficiency targets
- **Integrated 600V/2A High-Voltage MOSFET**  
Supports both 120V and 230V LED lamps with low BOM costs
- **Integrated High-Voltage JFET for Fast Start-Up**  
Supports fast LED lamp start-up times with low BOM costs
- **Full Protection Feature Set**  
Undervoltage lockout (UVLO), thermal foldback (TFP), overvoltage (OVP), overcurrent (OCP), overtemperature (OTP), and leading-edge blanking (LEB) provide robustness and reliability
- **Compatible with a Wide Range of Leading- and Trailing-Edge Triac Dimmers**  
Simplifies lamp designs to adhere with traditional dimming methods

#### Applications

- Mains retrofit Tx tube LED
- LED power supply modules
- Triac dimmable LED lamps
- LED high bay lamps

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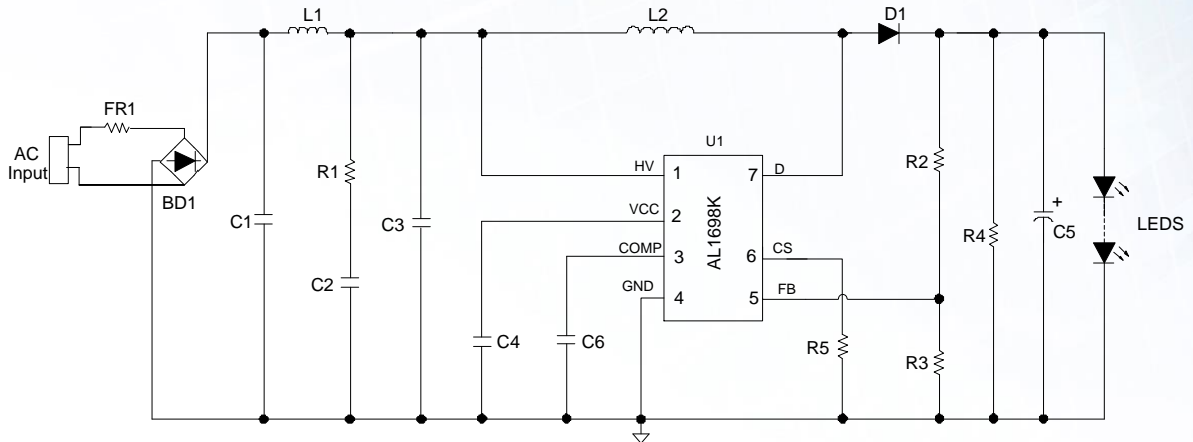
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### Typical Application



AL1698K Boost Topology LED Lamp Circuit

### Product Portfolio

Part Number	Min Input Voltage	Max Input Voltage	CS Accuracy	Efficiency	Operating Temp Range	High Power Factor	Fast System Startup	Dimming	Dimming Standard	Topology	Package
	V <sub>AC</sub>	V <sub>AC</sub>	%	%	°C						
<a href="#">AL1698K</a>	85	265	±3	95	-40 to +105	>0.9	Y	Triac	NEMA SSL6	Boost, Fly-Back, Buck-Boost	SO-7
<a href="#">AL1698</a>	85	265	±3	85	-40 to +105	>0.9	Y	Triac	NEMA SSL6	Fly-Back, Buck-Boost	SO-7

### Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAPs)	Package	Moisture Sensitivity	Packing	
				Quantity	Carrier
<a href="#">AL1698K-20CS7-13</a>	<a href="#">Standard</a>	SO-7	MSL-1	4,000	13" Tape and Reel