



Wide Analog control voltage extends LED lamp dimming range

The AL8807A is an enhancement of Diodes' low EMI buck high brightness LED driver AL8807. It extends the analog dimming range in excess of 10:1.

The AL8807A provides protection against a number of potential faults within a lamp:

1. Over-temperature condition → switches itself off
2. Open-LEDs → automatically stops switching
3. Short-LEDs → continues switching but at reduced duty cycle minimising power dissipation

The AL8807A can operate at up to 1MHz – reducing the size of external components. The small MSOP-8EP package size (same footprint as AL8806/7) coupled with the need for only 4 external components produces a small solution footprint.

The accuracy, temperature range, cost and analog dimming range make it ideally suited to dimmable LED lighting applications.

A SOT25 version will be available early Q4



The Diodes Advantage

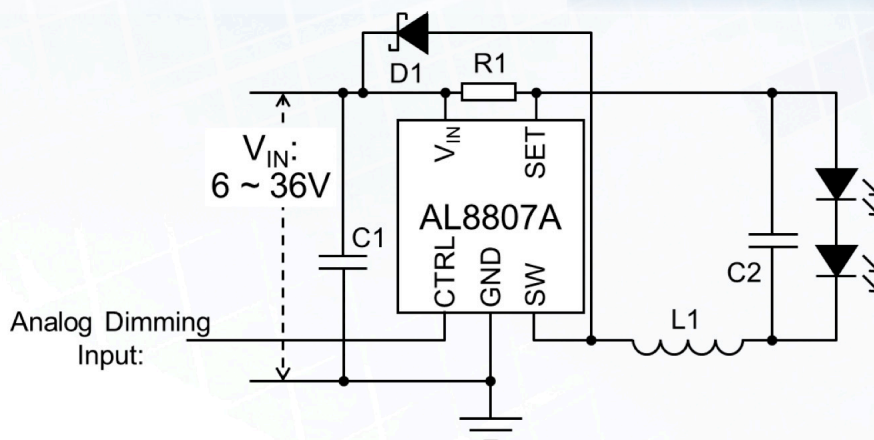
The AL8807A provides a simple wide analog dimming range solution for Low Voltage general illumination LED lamps

- **Extended Analog dimming > 10:1**
Provides a simple solution for varying LED lamps' brightness without the complications of PWM dimming
- **Reduced switching noise and ringing**
Reduces EMI issues – especially in non-optimised layout PCBs
- **Open-LED, short-LED and Over-Temperature Protection**
Open-LED → automatically stops switching,
Short-LED → f_{SW} & duty cycle reduces,
 $T_J > 145^\circ\text{C}$ → Thermal trip
- **Small footprint, low thermal impedance packages – MSOP-8EP**
High power density small PCB footprint solution
- **5% initial average LED current accuracy**
Meets accuracy requirements of most lighting apps at cost effective price and improves inter-channel matching.

Applications

- General illumination
- Multi-substrate LED driving
- Driving of parallel LED chains
- Wide Analog Dimming LED lamps
- 12V_{AC/DC} and 24V_{AC/DC} lighting
- SELV lighting

**Typical Application:
LED lamp**



Diodes Medium Voltage High brightness LED Drivers

Part number	Comment	V _{IN} V	LED Current A	Accuracy %	Switching Frequency MHz	Efficiency %	Dimming		Temp range °C	Protection			Soft- start	Package θ _{JA}
							PWM	Analog		OTP	OC	SC		
AP8800A	Low Cost 1W LED Dr	8 ~ 28	0.37	5	0.7	92	Y	Y	-40~85	-	Y	Y	Y	TSOT23-5 (250)
ZXLD1350	AEC-Q100 1W Dr	7 ~ 30	0.38	5	1	95	Y	Y	-40~105	-	Y	Y	Y	TSOT23-5 (250)
ZXLD1360	AEC-Q100 1W Dr	7 ~ 30	1	5	1	95	Y	Y	-40~125	-	Y	Y	Y	TSOT23-5 (82)
AL8805	Low Cost 3W LED Dr	6 ~ 30	1	5	1	98	Y	Y	-40~125	-	Y	Y	Ext cap	SOT25 (250)
AL8806	Multi-Die 3+W LED Dr	6 ~ 36	1.5	5	1	96	Y	Y	-40~125	-	Y	Y	Ext cap	MSOP-8EP (69)
AL8807	Low-EMI 3W LED Dr	6 ~ 36	1 1.3	5	1	98	Y	Y	-40~125	-	Y	Y	Ext cap	SOT25 (250) MSOP-8EP (69)
AL8807A	Wide Analog dimming	6 ~ 36	1.3	5	0.7	98	-	Y	-40~125	Y	Y	Y	Ext cap	MSOP-8EP (69)
AL8808	Low Cost 3W LED Dr	6 ~ 30	1	5	1	98	Y	Y	-40~125	Y	Y	Y	Ext cap	SOT25 (250)
AP8802H	60V 3W LED Dr	8 ~ 60	1	5	0.7	95	Y	Y	-40~105	-	Y	Y	Y	SO-8EP (45)
ZXLD1362	60V 3W LED Dr	6 ~ 60	1	5	1	95	Y	Y	-40~125	-	Y	Y	Y	TSOT23-5 (82)
ZXLD1366	60V 3+W LED Dr - Tighter accuracy	6 ~ 60	1	2.5	1	95	Y	Y	-40~125	-	Y	Y	Y	TSOT23-5 (82) DFN3030-6 (44) SO-8EP (45)

To find out more information:
Medium voltage LED Driver Web page
Datasheet

<http://www.diodes.com/products/catalog/detail.php?item-id=9090>
<http://www.diodes.com/datasheets/AL8807A.pdf>

Ordering information

Device	Packaging	Part mark	Reel size	Tape width	Quantity
AL8807AMP-13	MSOP-8EP	Y W X E AL8807A	13"	12mm	2500

All variants are in packages that are "Green" Molding Compound (No Br, Sb) with Lead Free Finish/RoHS Compliant (Note 1)
Notes:1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Codes for date coding on part marks

Y Year 0~9 W A~Z week 1~26 a~z week 27~53 X: A~Z: Internal code