XR46701 Product Brief

Current Controller with Dimming Function

Description

The XR46701 is a current controller which integrates a PWM dimming function which can be controlled by a 1V to 4V control signal. Current is regulated through an external N-channel power MOSFET which allows one to scale current and spread heat dissipation.

The XR46701 is generally configured to be the last step in an LED AC direct step drive solution which provides excellent Power Factor and THD without the need for bulk capacitance or inductors. The DC dimming control signal applied to the DIM pin is converted to a Pulse Width Modulation signal to adjust the LED brightness.

The XR46701 also includes thermal foldback and power line regulation to avoid excessive power loss and over heating which can significantly reduce the life of LEDs. The Over Voltage Protection (OVP) and Over Temperature Protection (OTP) provide a failsafe in the worst operating conditions. The OVP can also be used to enable unique dual range AC direct drive solutions.

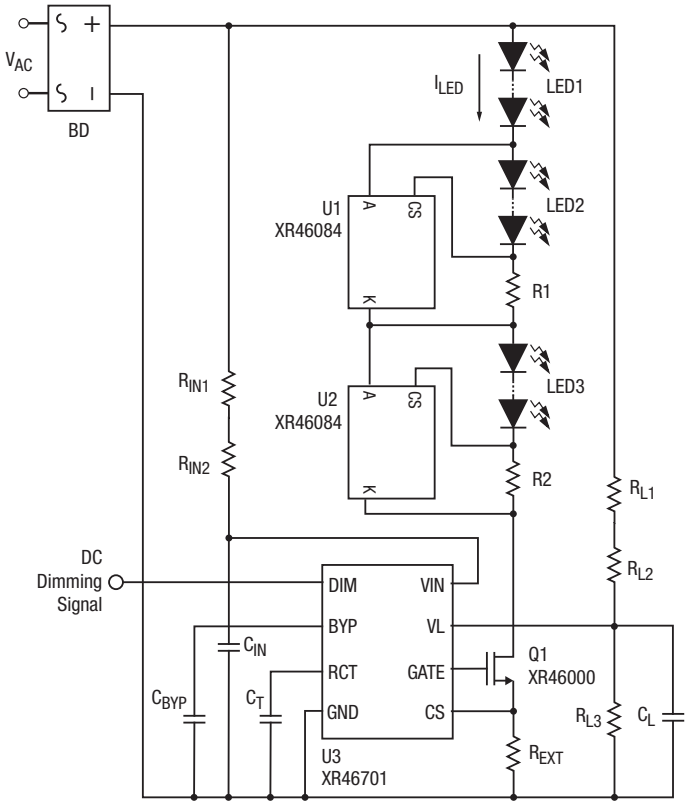
FEATURES

- 4V to 40V supply voltage range
- Power line regulation
- 1V to 4V DC to PWM dimming control range
- 400 to 2000 Hz adjustable internal PWM oscillator
- V_{IN} supply clamp eliminates external zener
- Dual Mode over temperature protection
  - Thermal current foldback
  - Thermal shutdown
- Over voltage protection enables dual range lighting solutions
- >600V Native Surge protection extends MOV life
- 5V 1mA output

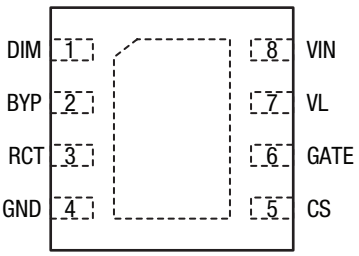
APPLICATIONS

- AC direct drive LED lighting
- High bay lighting
- Dual range light engines
- Downlights
- Smart lighting

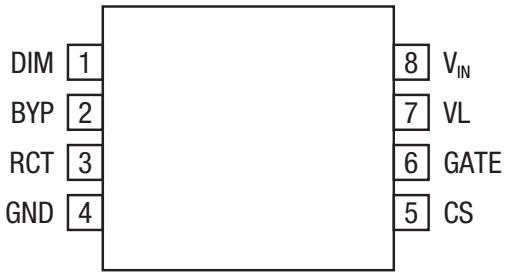
Typical Application



Pin Configurations



3mm x 3mm DFN-8L, Top View



MSOP-8, Top View

Ordering Information[1]

Part Number	Operating Temperature Range	Lead-Free	Package	Packaging Method
XR46701IHBTR	-40°C ≤ T_J ≤ 125°C	Yes[2]	DFN-8	Tape and reel
XR46701IRBTR	-40°C ≤ T_J ≤ 125°C		MSOP-8	Tape and reel

NOTE:
1. Refer to www.exar.com/XR46701 for most up-to-date Ordering Information.
2. Visit www.exar.com for additional information on Environmental Rating.

Please contact LEDtechsupport@exar.com to request a complete datasheet.

Corporate Headquarters:
5966 La Place Court
Suite 100
Carlsbad, CA 92008
Tel.:+1 (760) 692-0711
Fax: +1 (760) 444-8598
www.maxlinear.com

High Performance Analog:
48720 Kato Road
Fremont, CA 94538
Tel.: +1 (510) 668-7000
Fax: +1 (510) 668-7001
Email: LEDtechsupport@exar.com
www.exar.com