

2008B POWERPUCK™

Wide Range LED Power Module

PRODUCT OVERVIEW

The 2008B PowerPuck™ series of LED drivers are a line of true current regulated power supplies for LEDs. Simple and versatile, the 2008B PowerPuck offers a cost effective solution for driving High-Power LEDs for many applications.

The line of 2008B PowerPuck drivers exhibit very high efficiency and require no external current-limiting resistors or additional heat sinking. The 2008B PowerPuck accepts a wide input voltage range and can power up to (6) High-Power LEDs in series (up to 18 total).

A wide range of current outputs are available. Standard units are fully potted in an extremely small form factor, measuring only 1.5" diameter by 0.5" tall and the 2008B PowerPuck includes an aluminum mounting bracket. Other custom sizes can be created to meet customer's needs. Visit www.LUXdrive.com or contact LUXdrive support for more information. [The unit is supplied with 24 AWG 6" colored leads for easy connection to the LED(s).]



FEATURES

- ✓ Low Voltage DC input power up to 32V
- ✓ Extremely small form factor measuring just 1.5" dia x 0.5" tall
- ✓ Supplied with 24 AWG 6" colored leads for simple connection
- ✓ Optional mounting bracket
- ✓ 350mA, 700mA, or 1.0A constant current output
- ✓ Output short circuit protection up to 15 seconds
- ✓ Output open circuit protection

TYPICAL APPLICATIONS

- ✓ Solar & Landscape Lighting
- ✓ Architectural Lighting
- ✓ Track Lighting
- ✓ Automotive & Marine Lighting
- ✓ Portable Lighting & Flashlights
- ✓ Point of Purchase Lighting
- ✓ Desk & Reading Lamps
- ✓ Signal & marker Lighting
- ✓ Cabinet & Display Case Lighting
- ✓ Sign & Channel Letters
- ✓ Much More...

Typical Application



**PowerPuck 2008B-700 driving (4)
Cree™ or Luxeon™ LEDs from 12VDC.**



RoHS
Compliant
2002/95/EC

MADE IN



U. S. A.

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Part Number Identification Table

Part Number	DC Input	Drive Current	Control Dimming	Connection Type
2008B-350	5-32VDC	350mA ¹	No	4 Wires
2008B-700	5-32VDC	700mA ¹	No	4 Wires
2008B-1000	5-32VDC	1000mA ¹	No	4 Wires

Absolute Maximum Ratings

Input Voltage, DC Model	32V
Output Voltage	30V

Typical Characteristics

Output tolerance (within specified temp. range)	±5%
Efficiency	95%
Input Voltage Minimum	5VDC
Input Margin (350mA unit ¹ , add to LED Vf MAX)	2VDC

Specifications

Operating Temperature	-40+85°C
Storage Temperature	-40+125°C

Application Information

Description

The 2008B PowerPuck™ Wide Range LED Power Module is a high efficiency dc to dc converter which delivers a fixed output current by varying the output voltage as required to maintain the specified current. Many current output options are available allowing for use with many types of LEDs and in a variety of applications.

Fixed Current Drive

The fixed output current of the 2008B PowerPuck drivers are designed to supply their rated current to one or more LED junctions. For example, a 350 mA rated unit will drive up to six Cree XPE2 LEDs connected in series. Due to the nature of the buck regulator, the input voltage must always be higher than the total forward voltage drop of the LED junction(s) connected in series (2.0V for DC models). Thus, for a series string of six junctions having an average forward drop of 3.0V, the required minimum input voltage will be 20VDC . A standard 24VDC power supply is a good choice for this application.

1- Measured with single emitter; output current drops slightly with additional series junctions to limit maximum power dissipation.

Figure 1.
Efficiency vs. Vin

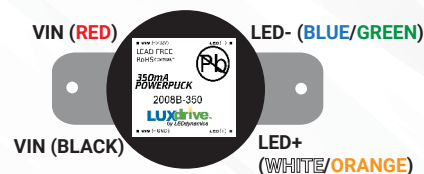
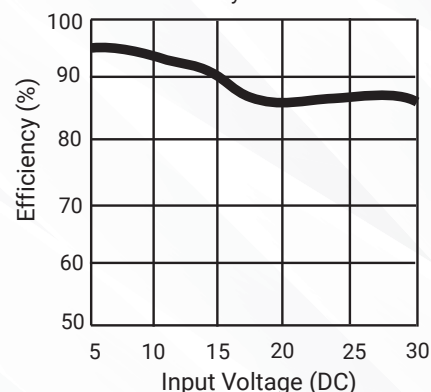


Figure 2.
Wire Configuration

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Figures 3 through 8 show 700mA (2008B-700) and 1000mA (2008B-1000) units driving various LED circuits. Note that parallel strings of LEDs can be driven directly with no additional circuitry required to insure current sharing. The nature of the LEDs themselves will often provide good current sharing if the parallel strings comprise 3 or more junctions each. Figure 7 shows a 700mA unit driving a Luxeon® V. This could also represent a 350mA unit driving a Luxeon® I, a 1000mA unit driving Luxeon® III, or a 500mA unit driving a Nichia Jupiter®.

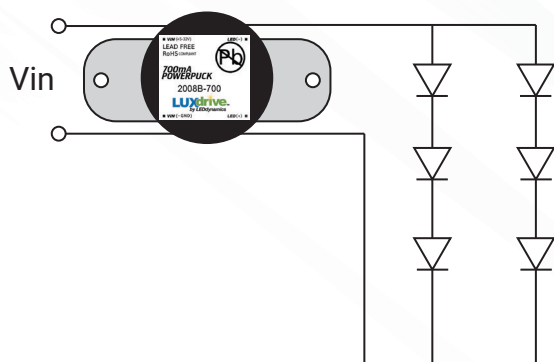


Figure 3.
700mA unit driving LumiLEDs
6-ring (VIN > 12VDC)

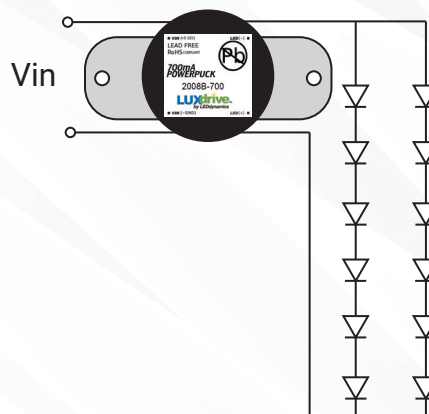


Figure 4.
700mA unit driving LumiLEDs
12-ring (VIN > 24VDC, IOUT limited to **600mA**)

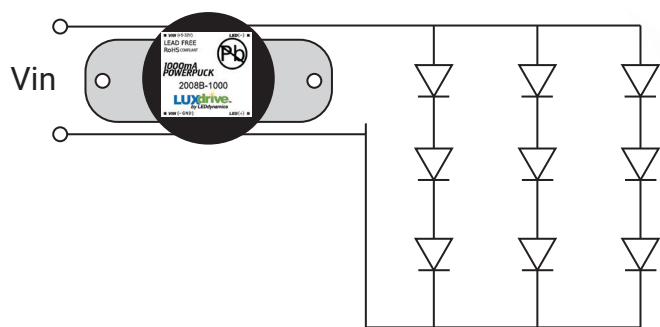


Figure 5.
1000mA unit driving nine Luxeon® I emitters
(VIN > 12VDC)

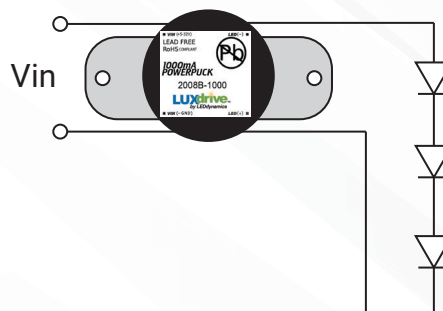


Figure 6.
1000mA unit driving three Luxeon® III
emitters (VIN > 12VDC)

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Figure 7.
700mA unit driving one Luxeon® V emitter
(VIN > 12VDC)

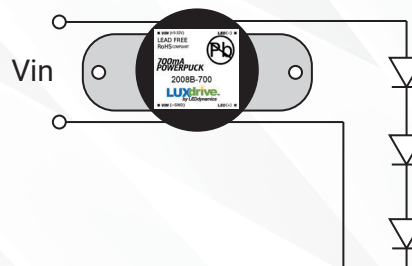


Figure 8.
700mA unit driving three Luxeon® V emitters
(VIN > 24VDC)

Connections

In all cases, the LEDs being driven should be located as close to the 2008 LED output as possible. When the use of long leads is required, use heavier gauge wire.

The power input wires/traces should also be kept short. Where DC input units are located more than 18" from the source, a 220µF, 50V capacitor should be placed across the input terminals as shown in Figure 9.

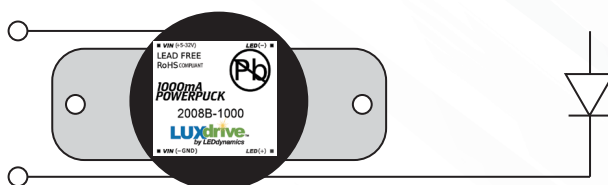


Figure 9.
Place a capacitor across the input terminals when the distance to the DC power source is greater than 18 inches

Physical Dimensions

