

## Product Overview

The 2009A MicroPuck is a versatile, compact solution for powering (1) High-Power LED from low DC voltages. The 2009A was designed to power (1) High-Power LED, or strings of 5mm (T 1-3/4) LEDs, efficiently and with stability. This driver provides maximum illumination to the LED while still mimicking the light drop-off of an incandescent bulb, which dims as the batteries are used up. Unlike an incandescent bulb, the driver's current consumption drops at very low voltages, allowing usable light to be produced by the LED much longer than conventional flashlights. Battery recovery (after the flashlight has been turned off) is also improved.

The standard offering is a 0.45"L X 0.3"W X 0.26"H encapsulated micro-puck.

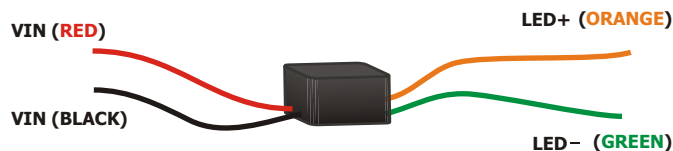
Custom sizes can be created to meet the customers' needs (see 03030 DimeDriver). The 2009A is supplied with 24 AWG 6" colored leads.



2009A MicroPuck powering (1) LED ( $V_{in}=3V$ )

## Features

- **Low Cost:** The 2009A is a compact, low cost solution for providing current to LEDs with forward voltages in excess of supply voltages.
- **Safety & Reliability:** The 2009A is encapsulated by an insulating epoxy and is resistant to harsh environments and moisture.
- **Battery Tracking:** The 2009A's output is relatively constant until the batteries have been drained to low power mode which provides some light for many more hours.
- **Small Size:** The 2009A is ideal for applications where size matters. Small size = more applications!



**Figure 1.**  
Wiring Connections

## Typical Applications

- Drop-in Replacement Bulbs
- Pen Lights
- Solar Lighting
- Road Markers
- Portable Lighting & Flashlights
- Head-Lamps / Camp Light
- Desk & Reading Lamps
- Flashing & Strobe Lighting
- Cabinet & Display Case Lighting
- Much More...



**Specifications**

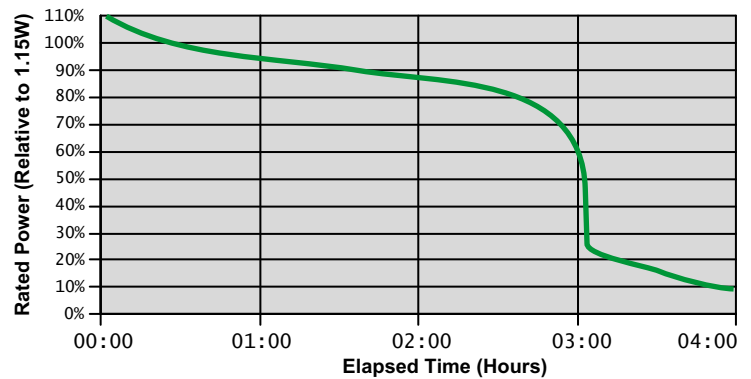
Input Voltage	3.0V <sub>DC</sub>
Output Current, 2009A	350mA <sup>1</sup>
Output Current, 2009-HI.	400mA <sup>1</sup>
Operating Temperature	-40-+85°C
Storage Temperature	-40-+125°C

**Absolute Maximum Ratings**

Input Voltage	3.0V <sub>DC</sub> <sup>2</sup>
Output Voltage	8.0V <sub>DC</sub> <sup>2</sup>
Output Power	1.5W

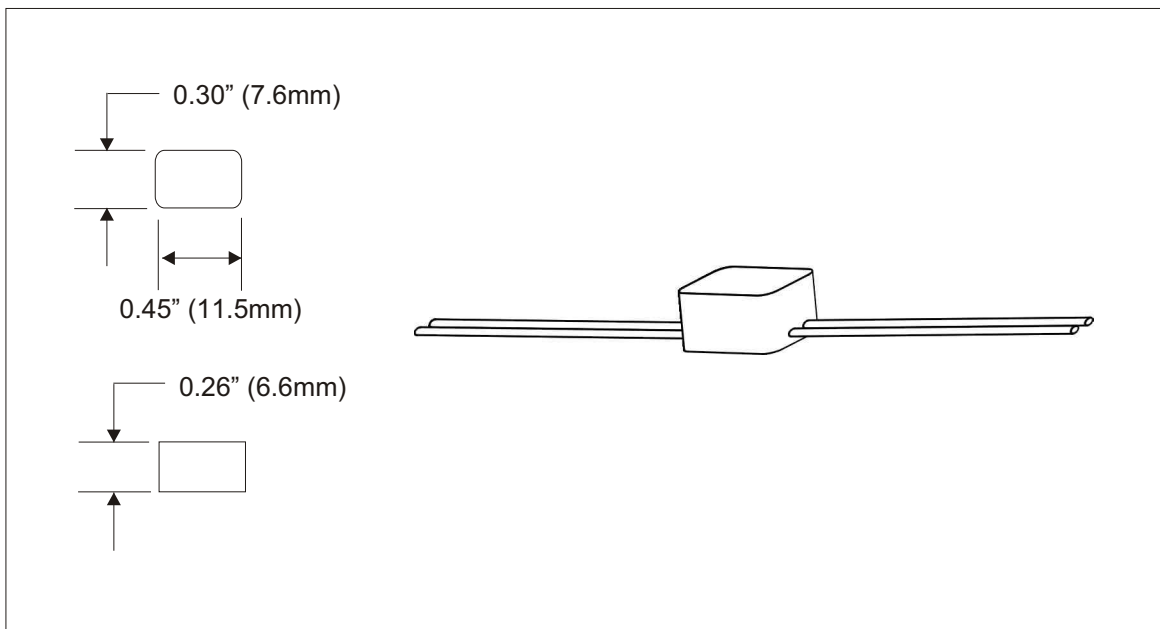
**Typical Characteristics**

Efficiency	80%
Input Voltage Minimum	0.8V <sub>DC</sub>



**FIGURE 2**  
MicroPuck 2009A powering (1) white Luxeon I\* LED with 2 "AA" Alkalines

**Physical Dimensions**



Shown approximately actual size

\* - Luxeon is a registered trademark of LumiLEDs Corporation

1 - Measured with single emitter

2 - See "Additional Applications of the 2009A MicroPuck" for additional application information.