

Laser Diode Wiring on a Custom CD Burner



AI Overview

Laser diodes from CD/DVD drives typically have three pins: common ground, laser anode, and photodiode anode, and must be driven with a regulated current source to operate safely.

Identifying Pins and Wiring

Most CD/DVD laser diodes have three pins:

- Common ground (cathode for both laser and photodiode)
- Laser diode anode (+)
- Monitor photodiode anode (+)

If the diode is unmarked, you can identify the pins by briefly applying a low voltage (1.8–2.2 V) and observing current draw; the laser will draw current only when correctly connected. In some CD-RW drives, the infrared diode for CDs has a voltage drop of ~2.1–2.15 V and operates at 100–150 mA continuous current, while the red DVD diode may require slightly higher voltage (~2.5 V) and similar current.

Powering the Diode

Laser diodes must never be powered directly from a voltage source without current limiting. Options include:

- Series resistor: Simple but less precise; calculate using supply voltage minus diode voltage divided by desired current.
- Adjustable current driver: Recommended for stability and safety. Common ICs include LM317 or LM358-based adjustable drivers, capable of 10–400 mA with TTL enable/disable control. Always ensure the diode is mounted on a metal heat sink to prevent overheating.

Optical Considerations

The diode should be aligned precisely with the lens axis to focus the beam correctly. CD/DVD optics often include two lenses: one to collimate and one to focus. You may need to remove or adjust lenses to achieve the desired focal distance for experiments or engraving.

Infrared diodes are invisible; use a camera or IR-sensitive device to verify the beam.

Safety Precautions

CD/DVD laser diodes are Class IIIb lasers, capable of causing permanent eye damage and burns. Always wear laser-rated safety glasses and avoid reflective surfaces. Never operate the diode outside a sufficiently large metal enclos...

Article Content

Building a Laser Cutter with DVD-RW Laser Diode

Yes, you can build a very small laser “engraver/cutter” using the red burning diode from a DVD-RW drive, plus two DVD/CD sleds for X-Y motion, an Arduino running GRBL, and a constant-current

Laser Engraver Made With Repurposed CD/DVD

Laser Engraver Made With Repurposed CD/DVD Computer Drives: Over half a year ago now, while trying to think up ideas for a project, I found a tutorial for a pen

Sciencing DVD-RW Laser Diodes

If you've played around with laser diodes that you've scavenged from old equipment, you know that it can be a hit-or-miss proposition. (And if you

How to Make a Powerful Laser from a CD ROM Drive | Laser Lights

In this video, we show you how to extract the laser diode from an old CD-ROM and turn it into a working laser light. This fun and educational project is perfect for hobbyists and anyone interested ...

How to Make a Powerful Burning Laser for CHEAP!

How to Make a Powerful Burning Laser for CHEAP!: After watching many videos on of people burning things with high power lasers, I wanted one. Those

How to Make a Mini Laser Engraver Kit from DVD

Need to build your own laser cutter engraving machine? Review this DIY guide on how making a small laser engraver kit from DVD-ROM with

DVD to Laser Engraver : 12 Steps (with Pictures)

DVD to Laser Engraver: Hello everybody !! This is my very first instructable, i've been in this page for a couple of years now, and this is the first BIG project i

41J Blog » Blog Archive » Playing with DVD RW Laser

I've always wanted to extract laser diodes from DVD RW and Blu ray drives and play around with them. After killing a few lasers I finally got one

DVD Laser Diode Used To Build A Laser Engraver

It's a laser engraver built from a DVD burner diode (translated). It turned out so well we wonder what other projects he's forgotten to tip us off about?

DVD Formats and How to Drive Laser Diodes to Record and ...

The drivers consist of three input channels, a read channel with RF oscillator and two precision current amplifier outputs to drive the CD and DVD laser diodes for erasing and writing. The

Arduino CNC Laser Engraver From DVD Drive

Arduino CNC Laser Engraver From DVD Drive: Hello everybody, this is project How-ToDo, today I'll show you how I made a laser engraver from old DvD drives.

DIY Laser Engraver with old DVD/CD parts

I'm working on a DIY laser engraver and making pretty good progress. I mostly know what I'm doing but need some guidance/help from the

DIY DVD Laser Engraver Guide | PDF | Arduino | Power Supply

The document provides step-by-step instructions for converting DVD burners into a laser engraver by salvaging the laser diode, linear movement modules, screws, and plastic cases from DVD burners

DIY Powerful Burning Laser Guide

This document provides instructions for building a powerful burning laser for cheap using parts from an old DVD burner. It begins by explaining how the author built

Can an IR Laser diode salvaged from CD burner be used for ranging?

Can IR diodes like the ones shown in the following link (salvaged from CD burners) be used for ranging applications? LucidScience - Build the LASER NIGHT VISION - Page 3 of 13 If yes,

Custom Infrared CW Laser from CD-RW Drive,

This infrared (NIR) 780nm diode was extracted from a CD-RW burner drive and is quite powerful. The device can burn thick black plastic and ignites

DIY LASER GUN? Why not? How to Make a Powerful

Did you know that a DVD drive contains a powerful laser diode that can be turned into a burning laser? In this video, I'll show you step-by-step how

Powerful Burning Laser : 5 Steps (with Pictures)

We need to take off a laser diode from dvd driver, open it, find moving part with lenses, usually there is you'll see 2 diodes IR for CD and just red for DVD, carefully take them from hit sinks, better before

Harvesting a Laser Diode From an Optical Drive

Harvesting a Laser Diode From an Optical Drive: Have you ever wondered how powerful that tiny little laser is in your CD, DVD, or BluRay drive/burner? Well now you can.

Laser diodes from CD-RW drives can cut and burn!

If the diode is connected to any power source (even regulated) without resistance or current regulator, the diode will be destroyed! The laser diode has almost zero

HACKED!: Laser Diode from DVD Burner || Constant Current Source

Here is a small video where I use another laser diode: • Laser Diode from DVD Burner ignites a match ! Previous video: • Electronic Basics #13: Coils / Inductors (...)

About DVD/CD reader laser diodes : r/AskElectronics

I salvaged an old DVD and a CD reader, among some other stuff, I made a stealthy drawer in my PC just big enough to hold my USBs and some other small stuff. I just looked what other stuff I could use

Powerful laser diodes from DVD-RW drive

Powerful laser diodes from DVD-RW drive I got into my hand broken DVD-RW burner. Its fate was clear :). In the mechanic you can find two laser diode

Building a Burning Laser from an Old Computer!!!

Here I take an old computer and utilize its parts to make a burning laser! This is one of my favorite DIY laser projects out there, as it makes use of old parts and makes a very cool final project.

Optical Drive Repair Help: Learn How to Fix It Yourself.

However, some disc drives, such as those equipped in the newer Sony Playstations, are equipped with variable wavelength laser diodes and are able to read multiple

DVD Burner Red Laser diode

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How to Make a Powerful Burning Laser From DVD-RW

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An Introduction to Laser Diodes

An Introduction to Laser Diodes Learn about the laser diode, including package types, applications, drive circuitry, and some laser diode

Easy DIY Laser Engraver: Build Your Own from a DVD Drive

Turn an old DVD drive into a powerful laser engraver with this easy-to-follow DIY guide! Learn how to assemble the hardware, including the laser diode, stepper motors, and Arduino controller.

Davide Gironi blog: 38mm x 38mm Laser Engraver build

38mm x 38mm Laser Engraver build using CD-ROM/Writer on ATmega328p A laser engraving machine, is a tool that uses lasers to engrave an

Diy Laser Burner Module From Old DvD''wr.

Diy Laser Burner Module From Old DvD''wr.: This tutorial is about how i make my own laser diode from old dvd writer. I need such a laser burner module for my

Diy Laser Burner Module From Old DvD''wr.

This tutorial is about how i make my own laser diode from old dvd writer. I need such a laser burner module for my cnc engraver project such type of modules are very

DvdRW laser diode not burning?

So I made a driver circuit, made it output the max output for the laser diode, but even when focused it doesn't burn. I thought It was the diode from just a simple dvd/cd rom. But no, It was from

How to Build a Laser Diode Circuit

In this article, we will show how to connect and build a simple laser diode circuit to get light output from a laser diode.

How to Make a Powerful Laser from a CD ROM Drive

In this video, we show you how to extract the laser diode from an old CD-ROM and turn it into a working laser light.

Powerful laser diodes from DVD-RW drive

One is infrared (CD burner) and one red (DVD burner). Both diodes have about the same order of magnitude performance and thermal effects (maybe the infra burn

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