Laser Diode Size and Specifications

Article Overview

Laser diode chips are typically very small, often around 1 mm × 0.5 mm, while packaged diodes commonly come in standard TO-can sizes of 5.6 mm or 9 mm in diameter.

Laser Diode Chip Dimensions

The active semiconductor region of a laser diode, where lasing occurs, is extremely small. Most edge-emitting laser diode chips measure approximately 1 mm in length and 0.5 mm in width, with the active layer being only a few micrometers thick . Surface-emitting laser diodes (VCSELs) can be even smaller, often just a few hundred micrometers across, due to their vertical emission design .

Packaged Laser Diodes

For practical use, laser diodes are usually mounted in protective packages. The most common packages are TO-can types, with diameters of 5.6 mm or 9 mm, which house the chip, electrical connections, and sometimes a photodiode for power monitoring . Other package types include butterfly packages, laser pigtails, and chip-on-submount configurations, which vary in size depending on cooling requirements and optical coupling .

Beam and Emission Considerations

The small size of the laser diode chip results in a highly divergent beam, often elliptical in shape. The beam diameter at the exit face is typically on the order of a f...

Article Content

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Laser Diodes by Wavelength

The Laser Diode Selection Guide provides a comprehensive list of all laser diodes available from stock, along with key specifications.

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Vertical-cavity surface-emitting laser

The vertical-cavity surface-emitting laser (VCSEL / ˈvɪksəl /) is a type of semiconductor laser diode with laser beam emission

Feb 25, 2026

Laser Diodes – semiconductor, gain, index guiding, high

The article details the many types, from small edge-emitting and surface-emitting diodes (VCSELs) to

May 19, 2026

Laser Diodes

A laser diode generates some heat at the junction points with a long time of electric current like general semiconductors. As a result,

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Laser Diode Technology

Since laser diodes are made of semiconductor materials, they do not require the fragile glass enclosures or

Jun 04, 2026

CHAPTER 4: LASER DIODE DRIVER

Beam Divergence: Semiconductor diodes, in addition to several advantages (for example, smaller size) over other type of lasers,

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Laser Diodes: Specification Guidelines | Lasers

Laser diode manufacturers know which specifications have the greatest impact on costs and can help you

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Diode chips

Available in the 790 nm to 1060 nm wavelength range. Single-emitter laser diodes with up to 45 W continuous-wave power. In-house

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What are Laser Diodes? | TechWeb

A laser diode (semiconductor laser) is an electronic component that generates laser light by converting electric current

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RLD85PZJ400A007: Laser Diode

As the temperature of laser diode increases, its maximum output will decrease and the operating range will shrink. Even when

May 13, 2026

Laser Diode Basics | Springer Nature Link

Laser diodes also have large manufacturing tolerances compared with other types of lasers. Therefore laser diodes of

Oct 04, 2025

Laser Diode Selection Guide (ALL MANUFACTURERS)

We try to help our community of laser scientists & engineers find the best products for their projects by hosting a free Open-Index

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Laser Diode: Working Principle, Construction, Types, Application

A laser diode is a small semiconductor device that emits powerful and precise light using a process known as

Sep 15, 2025

Laser Diode

A laser diode (LD) is defined as a forward-biased semiconductor diode that emits coherent light when an electrical current stimulates

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Selecting the optimum laser diode for your application

SPECIFYING YOUR LASER DIODE When specifying your laser diode, it is important to understand the level of flexibility that will be

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Laser Diodes: Ø3.8 mm, TO-46, Ø5.6 mm, Ø9 mm, and Ø9.5

We offer laser diodes with different output characteristics (power, wavelength, beam size, shape, etc.). Most lasers offered here are

Nov 15, 2025

Laser Diode Specifications

Laser Diode Specifications ... For more technical informations about working with our laser diodes you can get Operating manual in

Jul 16, 2026

Laser Diodes

ROHM Laser Diodes ROHM, among the leading laser diode manufacturers, offers a wide lineup of high-reliability laser diodes, from

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Laser diode

Laser diodes form a subset of the larger classification of semiconductor p – n junction diodes. Forward

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Laser Specifications – performance, power, laser beam,

Laser specifications describe properties of a laser system, including performance parameters, dimensions,

Apr 23, 2026

Chapter 1 Laser Diode Basics

Laser diodes also have large manufacturing tolerances compared with other types of lasers. Therefore laser diodes of the same type

Dec 21, 2025

Laser Diodes by Wavelength

We also offer optoelectronics mounts that directly accommodate many of our laser diode package options. The Laser Diode

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Understanding of Laser, Laser diodes, Laser diode packaging and its ...

Understanding of Laser, Laser diodes, Laser diode packaging and its relationship to Tungsten Copper What is LASER? Light

Oct 28, 2025

Diode Lasers Information

Diode lasers represent the vast majority of the laser market due to their small size, low cost of mass

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: https://greatpremiersolutions.co.za
Email: sales@greatpremiersolutions.co.za
Phone: +27 82 914 3675
Address: Unit 5, Silicon Heights, 22 Electron Avenue, Cape Town, 8001, South Africa

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