

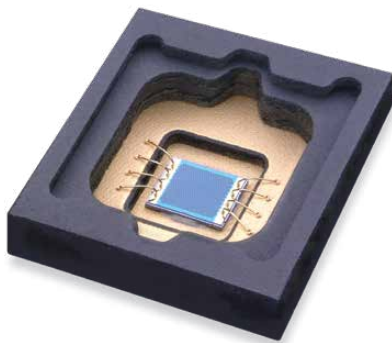


# FINISAR<sup>®</sup>



## Infrared Light for Measuring, Sensing and Controlling our Environment

VCSEL technology is extending the possibilities of consumer and scientific applications including 3D facial recognition, augmented reality, automotive in-cabin sensing and automotive LIDAR. Finisar's rich history and expertise in this technology spans more than two decades of engineering research, development, design and manufacturing experience.



*High Power Sensor VCSEL in Package*



# What is VCSEL Technology?

Finisar's Vertical Cavity Surface Emitting Laser (VCSEL) technology brings together the advantages of low cost and high efficiency within a small footprint. VCSELs have the advantage of wavelength stability over temperature and are directionally focused to maximize output efficiency. With its narrow divergence and coherent light, a VCSEL is 10 times more efficient than an LED in similar packaging.

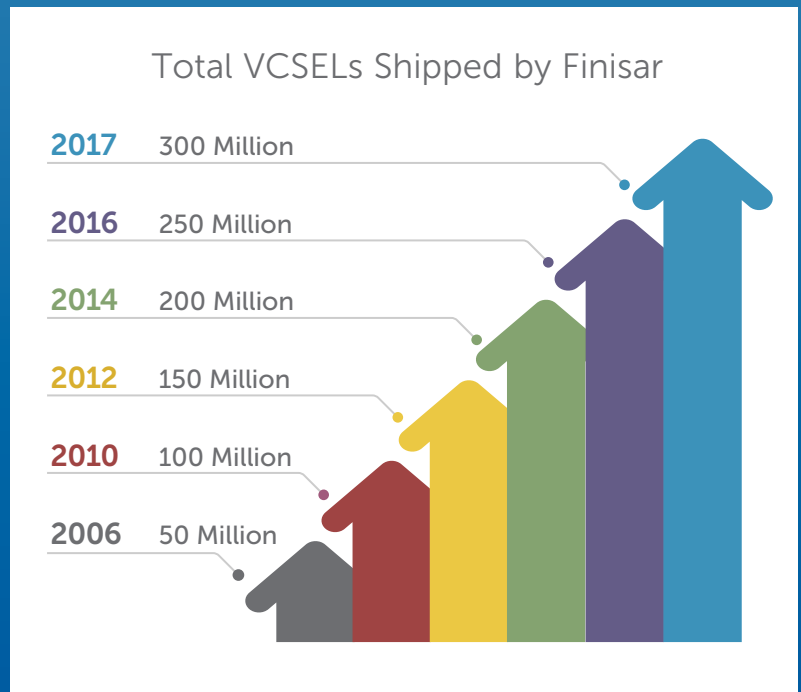
## Benefits of VCSEL Technology

- Scalable output power
- High quality optical beam
- Two available modes of operation:
  - Continuous Wave (CW) or Quasi-CW mode
  - Pulsed mode
- Higher wall-plug efficiency versus LED
- Stable wavelength over temperature and narrow spectral width
- Easy to package
- Multi-emitter increases ESD robustness and lifetime

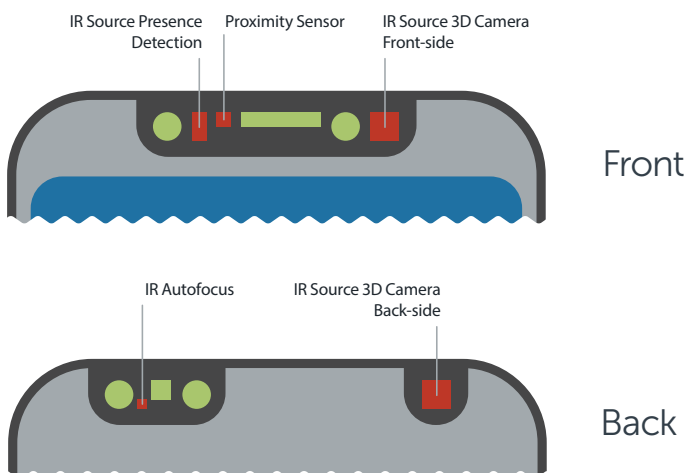
## Finisar is the Industry Leader

Finisar is recognized as the worldwide leader in VCSEL technology and manufacturing and continues to lead the commercial application of VCSELs with more than 300 million shipped. Known to have the best reliability and best performance over temperature in the industry, Finisar's VCSEL technology is both flexible and scalable, enabling OEMs to customize VCSEL arrays to meet application requirements, such as those found in Gesture Recognition and Optical Sensing.

Finisar is a global manufacturer with locations in the USA, Malaysia, China, Australia, Sweden and Germany and serves as a one-stop optical supplier.



## VCSELs in a Smartphone



## How Does It Work?

By passing unseen, infrared light through an optical element (which spreads the light into a structured pattern or a sheet of light), systems are able to capture depth information across an entire room. This enables a person to control games or their entire entertainment center with physical gestures.

In mobile devices, 3D sensing will augment camera capabilities to enable object recognition, capture depth data in an image or augment reality as seen through the device's camera.

## About Finisar

Finisar Corporation (NASDAQ: FNSR) is a global technology leader in optical communications, providing components and subsystems to networking equipment manufacturers, data center operators, telecom service providers, consumer electronics and automotive companies. Founded in 1988, Finisar designs products that meet the increasing demands for network bandwidth, data storage and 3D sensing subsystems. The company is headquartered in Sunnyvale, California, USA with R&D, manufacturing sites, and sales offices worldwide. Visit our website at [www.finisar.com](http://www.finisar.com).



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