

MITSUBISHI ELECTRIC CORPORATION
PUBLIC RELATIONS DIVISION

7-3, Marunouchi 2-chome, Chiyoda-ku, Tokyo, 100-8310 Japan

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Customer Inquiries

 Semiconductor & Device Marketing Div.B
 Mitsubishi Electric Corporation

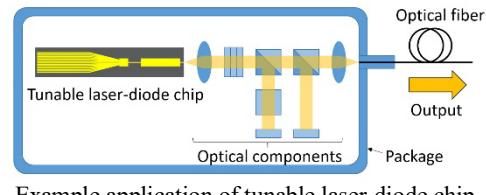
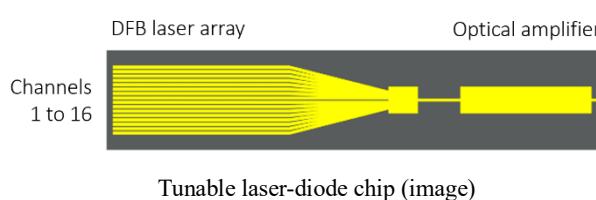
www.MitsubishiElectric.com/semiconductors/
Media Inquiries

 Public Relations Division
 Mitsubishi Electric Corporation

prd.gnews@nk.MitsubishiElectric.co.jp
www.MitsubishiElectric.com/news/

Mitsubishi Electric to Ship Samples of Tunable Laser-diode Chip for Optical-fiber Communication

Will increase capacity of digital coherent communication and downsize optical transceivers



Example application of tunable laser-diode chip

TOKYO, September 1, 2022 – [Mitsubishi Electric Corporation](#) (TOKYO: 6503) announced today that it will begin shipping samples of its new tunable laser-diode chip for use in optical transceivers of optical-fiber communication systems on October 1. The new chip is expected to help increase the capacity of digital coherent communication as well as reduce the size of optical transceivers.

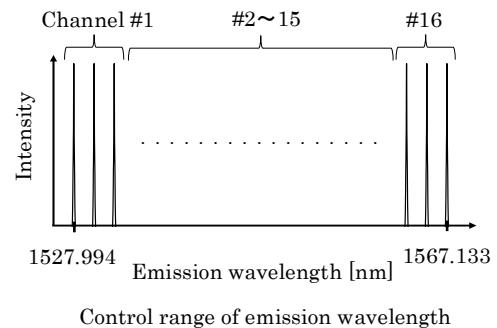
Data communication volume is rapidly increasing due to the spread of 5G mobile communication networks and the popularization of video-streaming services. In response, the capacity of high-speed communication needs to be increased from 100Gbps at present to 400Gbps in optical-fiber networks for communication between data centers as well as long distance communication. Therefore, digital coherent communication systems are now being deployed to improve communication efficiency in optical-fiber networks. At the same time, however, optical transceivers must be further downsized to accommodate space limitations in network equipment, but until now tunable laser diodes have been built into packages, making downsizing difficult.

The new chip outputs 1.55μm light wavelength that is used for digital coherent communication. It supports a wide range of wavelengths in compliance with 400Gbps optical-transceiver standard (OIF-400ZR-01.0). Offering the product in the form of a chip will allow manufacturers the flexibility to optimize package designs for specific optical transceivers. The chip's highly reliable design incorporates semiconductor production technology Mitsubishi Electric developed for the production of distributed-feedback (DFB) laser in mobile base stations and electro-absorption modulator integrated laser diode (EML) in datacenters.

Product Features

1) Supports wide range of wavelengths for larger-capacity digital coherent communication

- The structure comprises 16 DFB lasers with different emission wavelengths, arranged in parallel to support a wide range of wavelengths.
- Temperature control enables wavelength changes of approximately 2.7nm per channel, achieving 1.55μm emission wavelengths of 1527.994 to 1567.133nm.
- The above features will contribute to larger-capacity digital coherent communication in compliance with the OIF-400ZR-01.0 standard for 400Gbps optical transceivers.



2) Chip implementation supports downsizing of optical transceivers

- Chip mounting enables commonization with other optical components as well as component placement optimized for specific package designs, helping manufacturers to downsize their optical transceivers.

Future Developments

Mitsubishi Electric is targeting mass production of the chip from 2023. In addition to tunable laser-diode chips, the company is also considering developing optical modulator chips for next-generation 800Gbps products.

Main Specifications

Model	ML9CP61
Optical output	17dBm (typ.)
Wavelength range	1527.994 to 1567.133nm
Dimensions	0.75 x 3.8 x 0.1mm (typ.)
Sample shipments	From Oct. 1, 2022

Environmental Awareness

This product is compliant with the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) directive 2011/65/EU and (EU) 2015/863.

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About Mitsubishi Electric Corporation

With more than 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Mitsubishi Electric enriches society with technology in the spirit of its "Changes for the Better." The company recorded a revenue of 4,476.7 billion yen (U.S.\$ 36.7 billion*) in the fiscal year ended March 31, 2022. For more information, please visit www.MitsubishiElectric.com

*U.S. dollar amounts are translated from yen at the rate of ¥122=U.S.\$1, the approximate rate on the Tokyo Foreign Exchange Market on March 31, 2022