

**FOR IMMEDIATE RELEASE**

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*Product Inquiries:*

Hideo Sasaki  
Optical Fiber Communication Device  
& Module Marketing Section  
Mitsubishi Electric Corporation  
Tel: +81-3-3218-4772  
Sasaki.Hideo@dn.MitsubishiElectric.co.jp

*Media Contact:*

Travis Woodward  
Public Relations Department  
Mitsubishi Electric Corporation  
Tel: +81-3-3218-3380  
Travis.Woodward@eb.MitsubishiElectric.co.jp  
<http://global.mitsubishielectric.com/news/>

## **MITSUBISHI ELECTRIC ANNOUNCES SHIPMENT OF 1.3 $\mu$ m WAVELENGTH LASER DIODE FOR 2.5 Gbps TRANSMISSION**

**Tokyo, December 15, 2005** – Mitsubishi Electric Corporation (President and CEO: Tamotsu Nomakuchi) announced today the shipment of its ML7xx34 series laser diode scheduled for January 10, 2006. The device has the world's greatest operating temperature range (-40 degrees C ~ +95 degrees C), and is for use in 2.5 Gbps transmission at a wavelength of 1.3 micrometers.

**Summary of sale**

Product name	Summary	Price of sample	Shipment date	Number produced
ML7xx34 series	-1.3 micrometer DFB-LD -2.5 Gbps transmission -Operating temperature range: (-40C ~ +95C) -Standard CAN package	4,000 yen	01/10/2006	10,000/month from 4/2006

**Aim of sale**

As ADSL, Fiber To The Home (FTTH), and other high-speed, high-capacity communications services spread to the home consumer market, carriers have been rushing to upgrade their fiber optic communications network in the 20 km or so transmission distance area that connects subscribers with trunk lines. Carriers have been looking for small, energy-efficient optical communications devices with high-density mounting for use in these areas, and have been calling for a laser diode capable of high-speed transmission at high temperatures without the need for a temperature controller.

The ML7xx34 series, with its 1.3-micrometer wavelength DFB-LD suitable for transmissions of around 20km, is capable of operating at the world's greatest operating temperature range (-40 degrees C ~ +95 degrees C), without need for a temperature controller in almost all mounting configurations. Along with our sample shipment in September of this year of our ML9xx43 series<sup>1</sup> 1.55-micrometer wavelength DFB-LD for 2.5Gbps/100 km transmission, this new shipment will contribute to the miniaturization and energy efficiency of optical communications devices.

<sup>1</sup> 8/23/2005 release. Operation temperature range of -20C-+95

## Features of new product

### **1. World's greatest operating temperature range**

Previous 1.3 micrometer wavelength DFB-LD for 2.5 Gbps transmission were limited to an operation temperature range of  $-20$  degrees C  $\sim$   $+85$  degrees C<sup>2</sup> because of a inverse relationship of high speed response at low and high temperatures with optical output. We have improved the optical conversion efficiency of this laser diode by optimizing the active layer structure, and can now achieve high speed response and optical output at temperatures ranging from  $-40$  degrees C  $\sim$   $+95$  degree C without temperature control. This means the optical transceiver will no longer need a temperature controller, contributing to miniaturization, high density mounting and cost savings.

<sup>2</sup>Mitsubishi Electric's ML7xx16 series

### **2. Energy-efficient optical transceiver**

To obtain the optical output at high temperatures of  $+95$  degrees C necessary for transmission, it was necessary to improve the conversion efficiency of the input current to the laser, known as slope efficiency. By optimizing device structure, we have made a 40% improvement in slope efficiency to  $0.36$  W/A<sup>3</sup> compared to our previous model<sup>4</sup>, and improves energy efficiency in optical receiver.

<sup>3</sup>Slope efficiency of Mitsubishi Electric ML7xx16 series is  $0.25$  W/A

<sup>4</sup>Values are for a case temperature of  $25$  degrees C

Parameter	Typical value <sup>5</sup>	Condition
Threshold Current	30mA	Tc=95degrees C
Operation Current	60mA	Po=5mW, Tc=95 degrees C
Slope Efficiency	0.36W/A	Po=5mW, Tc=25 degrees C
	0.18 W/A	Po=5mW, Tc=95 degrees C
Oscillation wavelength	1.3 micrometers	Po=5mW, Tc=25 degrees C
Side-mode suppression ratio	11 GHz	Tc=25 degrees C Ib=Ith, Ipp=40 mA

<sup>5</sup>The above values are typical values and cannot be guaranteed. For guaranteed values, please contact the 'Product Inquiries' contact at the top of this release.

### **About Mitsubishi Electric**

With over 80 years of experience in providing reliable, high-quality products to both corporate clients and general consumers all over the world, Mitsubishi Electric Corporation (TSE: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. The company recorded consolidated group sales of 3,410 billion yen (US\$ 31.9billion\*) in the fiscal year ended March 31, 2005. For more information visit <http://global.mitsubishielectric.com>

\*At an exchange rate of 107 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2005.

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