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MITSUBISHI ELECTRIC DEVELOPS LOW NOISE AVALANCHE PHOTODIODE FOR USE IN 2.5 Gbps OPTICAL RECEIVERS

Tokyo, March 13, 2007 – Mitsubishi Electric Corporation (President and CEO: Setsuhiro Shimomura) announced today the development of an Avalanche Photodiode (APD[1]). The device has the world's highest functionality and the lowest receiver sensitivity for a light-receiving element used in 2.5 Gbps fiber optic communication at the date of this release. The results of this development will be announced at The Optical Fiber Communication Conference & Exposition and the National Fiber Optic Engineers Conference 2007 (OFC/NFOEC 2007) held in the US (California) from 3/25-29, 2007.

[1] a semiconductor receiver element that changes an optical signal to an electric signal and amplifies it

Model name	Application	Characteristics
2.5Gbps Aluminum Indium Arsenic (AlInAs[2]) Avalanche Photodiode	High-sensitivity optical receiver for long distance and metropolitan-area network communications, Fiber To The Home (FTTH), etc.	-40% reduction in element interference over our previous models -37dBm receiver sensitivity (world's lowest)

[2] Aluminum/Indium/Arsenic: new material to replace InP (Indium phosphate) in the amplifying layer. Reduces amount of time it takes to amplify the signal and has an increased response speed, and will be used in receiver elements of 2.5Gbps and above

Background

With the expansion of high speed, large volume communication services to homes in recent years, there has been a rush to increase speed and volume of fiber optic communications networks. There has been a movement to increase speeds on subscriber lines, which connect home transmission stations to 2.5 Gbps in both directions. However, to improve transmission speeds an optical reception element with low noise interference and high receiver sensitivity is necessary.

Mitsubishi Electric developed an avalanche photodiode for 2.5 Gbps optical receivers in 1995 that combined an optical receiving function with an amplifier function. Since then, deliveries to optical transmission device manufacturers have continued, and Mitsubishi Electric has been trying to further reduce noise interference and improve receiver sensitivity.

The photodiode we have developed this time uses AlInAs[2], which was used in the low noise construction of the Avalanche Photodiode for use in 10 Gbps optical receivers that was developed in September 2005, in the amplifier component. Using a planar construction[3], we were able to develop an avalanche photodiode for use in 2.5 Gbps optical receivers with low noise interference and the world's highest performance and lowest receiver sensitivity.

Main characteristics

1) World's lowest noise output

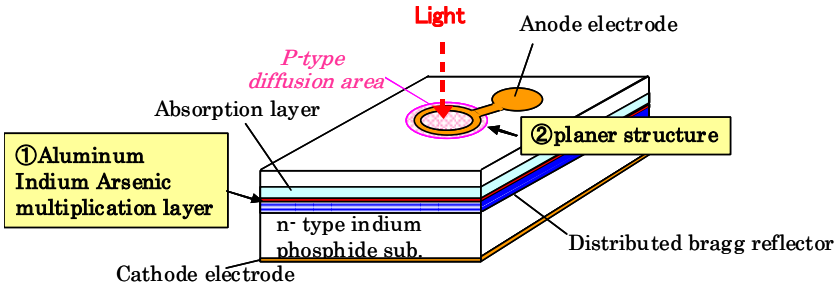
To more effectively amplify a decaying receiver signal over long distance transmission, it is necessary to control the resulting noise emitted by the receiving element. We changed the element material from the InP that has been used until now with AlInAs, reducing element sound interference by 40% compared to previous models and the world's lowest level.

2) World's highest performing receiver sensitivity

Deterioration of receiving element receiver sensitivity is caused by electric current escaping from both inside and outside of the receiver area. Using a planar construction, we have successfully controlled escaping electric current. By adding an APD-Trans Impedence Amplifier (TIA) CAN package to the avalanche photodiode we have improved receiver sensitivity by 2dB compared to our previous PD8xx3 model and achieved the world's highest performance of –37dBm.

Future Developments

Using this development as a base, we plan to begin mass production in December 2007



Chip structure

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 3,604 billion yen (US$ 30.8billion*) in the fiscal year ended March 31, 2006. For more information visit http://global.mitsubishielectric.com

*At an exchange rate of 117 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2006