

Sony launches first 400mW blue-violet laser for Blu-ray

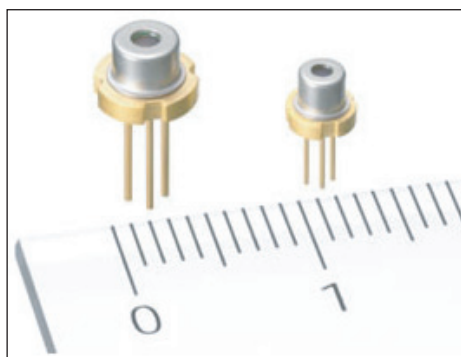
Catastrophic optical damage threshold raised from 300mW-class laser

Sony Corp has launched the SLD3237VF blue-violet laser diode, manufactured by subsidiary Sony Shiroishi Semiconductor Inc of Miyagi-Prefecture, Japan, which targets use for recording and playing Blu-ray discs, and supports BDXL, a new standard for large-capacity Blu-ray discs, reports Nikkei Electronics.

According to Sony, the SLD3237VF is the first blue-violet laser diode with a pulsed output power of 400mW or higher, allowing the use of a wider variety of optical components such as lenses and prisms and hence freer design of hardware.

Sony says that, to realize the high output, innovative technologies are necessary to prevent the end face of a laser resonator being melted by the heat from the laser — i.e. catastrophic optical damage (COD) — and to enhance the quality of the gallium nitride (GaN) crystal, in order to ensure high reliability.

The firm has therefore developed an end-face coating material and a



New 400mW-output laser SLD3237VF (left) and 350mW-output laser SLD3237VFR (right).

film-forming method, raising the optical output threshold for causing COD compared with that of the firm's 300mW-class laser diode.

The firm has developed an end-face coating material and a film-forming method, raising the optical output threshold for causing COD

Moreover, to improve crystal quality, Sony has developed new metal-organic chemical vapor deposition (MOCVD) crystal growth equipment optimized for producing GaN materials. The firm says that the equipment can grow on multiple substrates simultaneously as well as being able to deal with a future increase in demand for Blu-ray disc lasers.

Furthermore, Sony has developed a process and processing equipment that, it claims, boosts production efficiency in wafer processing.

The SLD3237VF is mounted in a standard package with a diameter of 5.6mm, and its operating temperature range is 0–85°C.

Sony has also launched the SLD3237VFR, which has a pulsed output of 350mW. Mounted in a 3.8mm-diameter package, its operating temperature range is 0–90°C.

Both lasers have a sample price of ¥1000 (about US\$11.9).

www.sony.co.jp

Quantum dot laser wins Japan's Green IT Award

As part of the Green IT Awards 2010 granted by Japan's Green IT Promotion Council, Tokyo-based QD Laser Inc, Fujitsu Ltd and the University of Tokyo have received the Ministry of Trade, Economy and Industry Minister Award in the category of 'Savings in IT-related Energy Consumption' for their quantum dot semiconductor laser technology. The award recognizes quantum dot laser technology as making a significant contribution to the energy efficiency of IT equipment.

The Green IT Award was founded to "honor contributions to the development, expansion and application of IT equipment, services and solutions that reduce society's energy consumption, with the aim of increasing the prevalence of green IT and bringing about a society that

both preserves the environment and achieves economic growth".

The advantages of QD lasers over other types of semiconductor lasers include lower power consumption, better temperature stability, and higher temperature tolerance. The lasers will make it possible to conserve energy as energy usage increases with the expansion of the Internet and improvements in the capabilities of ICT equipment.

The technology was proposed in 1982 by professor Yasuhiko Arakawa, director of the Institute for Nano Quantum Information Electronics at the University of Tokyo, and was subsequently developed through an industrial-academic collaboration between Fujitsu and the University of Tokyo. QD Laser Inc was

founded in 2006 with funding from Fujitsu and Mitsui Ventures to commercialize the technology, and the firm has begun the world's first mass production of QD lasers for use in optical communications.

The Green IT Award recognized the advanced capabilities of the device technology, as well as its wide range of potential medium- to long-term applications. It also praised the creative thinking that led researchers to bring about innovation by leveraging the principles underlying the device, as well as the achievements resulting from the innovation and the 15-year-long industrial-academic collaboration.

www.fujitsu.com

www.qdlaser.com

www.qdot.iis.u-tokyo.ac.jp