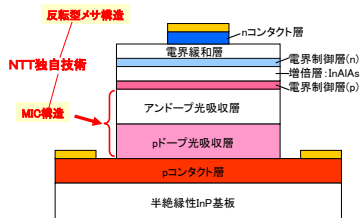
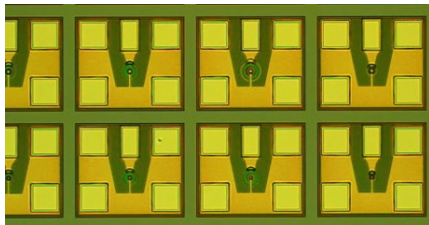


# 最先端受光デバイス

Advanced photo-detecting device

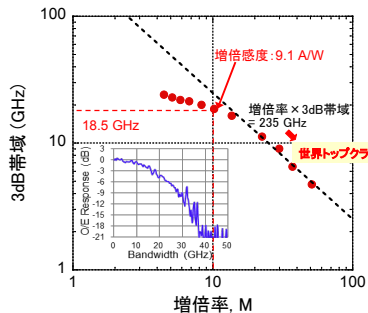
光通信ネットワークの大容量化、光通信用部品の小型低消費電力化を可能にする高速・高感度APD技術

High performance avalanche photodiode technology for upcoming optical network systems, realizing small and low-power optical components



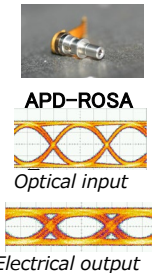
高速・高感度アバランシェフォトダイオード

The photograph and schematic cross-sectional view of the high performance APD



増倍率-3dB帯域特性

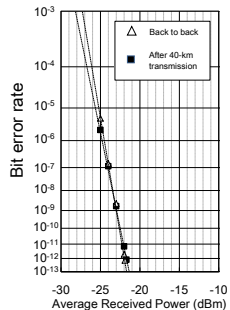
Gain-bandwidth characteristics



Electrical output

BER特性(25.8Gbit/s-40km伝送)

The BER characteristics at 25.8 Gbit/s after 40 km



- 内部増倍機能を有するアバランシェフォトダイオード(APD)を高速・高感度化することで、受信用光部品の小型化・低消費電力化、伝送距離の延伸が可能に
- NTT独自の構造(MIC構造、反転型構造)により、APDの性能を大幅に向上(高速化・高感度化・高信頼化)
- 25 Gbit/s級システムへの適用が可能となる特性(増倍感度9.1 A/W、3dB帯域18.5 GHz)を実現
- 世界で初めてAPDによる25.8 Gbit/s 40km伝送を達成

- Improving the speed and responsivity of APD, which has the internal gain, realize miniaturized component for optical network systems with low power consumption and extension of the transmission distance
- Significant advancement of the APD performances, which are speed, responsivity and reliability, using the original NTT technologies (the photoabsorption layer with MIC structure, inverted p-down structure)
- The record multiplied responsivity of 9.1 A/W was obtained at f3dB of 18.5 GHz, which is sufficient for 25-Gbit/s operation for upcoming high capacity optical network systems.
- Successful 40km-transmission at 25.8-Gbit/s using the APD for the first time